THE USEFULNESS OR USELESSNESS OF NOVELTY: RE-EXAMINING
ASSUMPTIONS ABOUT THE RELATIONSHIP BETWEEN CREATIVITY AND
INNOVATION

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ABSTRACT

TINA L. JUILLERAT: The usefulness or uselessness of novelty: Re-examining assumptions about the relationship between creativity and innovation
(Under the direction of David Hoffman and Francesca Gino)

Creativity and innovation continue to attract significant attention from both scholars and practitioners, yet little is known about the processes by which ideas (i.e. potential innovations) are evaluated and selected following initial generation. This research applied a behavioral decision research (BDR) perspective to test boundary conditions for a traditional assumption of the creativity and innovation literatures, the notion that increases in creative idea generation will increase the likelihood of innovation. Two studies challenge the traditional assumption by demonstrating that the creativity component of novelty can be inversely related to subsequent idea evaluation and selection. Study 1 found that idea novelty was negatively related to idea selection and recommendation after controlling for idea usefulness. Study 2 replicated the negative relationship between idea novelty and idea selection, and also found that idea novelty and novelty goals interacted to negatively influence idea selection. These findings suggest that scholars and practitioners need to devote greater attention to understanding idea evaluation and selection processes to translate creative efforts to actual innovation in organizations.
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# TABLE OF CONTENTS

LIST OF TABLES ........................................................................................................................................ v

Chapter

1. INTRODUCTION ........................................................................................................................................ 1
   An Introduction to Creativity and Innovation .................................................................................. 1
   Overview of Creativity Research .............................................................................................. 3
   Overview of Innovation Research ............................................................................................ 5
   Open Questions ..................................................................................................................... 6

2. FURTHER EXPLORATION OF THE CREATIVITY AND INNOVATION LITERATURES ................................................................................................................................. 10
   The Development and Evolution of Two Literatures .................................................................. 10
   Similarities and Shared Assumptions .......................................................................................... 11

3. AN INTEGRATED PERSPECTIVE ON CREATIVITY AND INNOVATION ................................. 16
   Re-Examining Traditional Assumptions ..................................................................................... 16
   Benefits of a New Perspective: Behavioral Decision Research (BDR) ..................................... 19

4. THEORY AND HYPOTHESES ................................................................................................................. 22
   The Novelty Bias and the Systematic Devaluation of Novel (Unique) Ideas ................................ 23
   The Status Quo Bias and the Systematic Devaluation of Novel (New) Ideas .................................. 26
   Potential Moderators of the Novelty and Status Quo Biases ..................................................... 33

5. STUDY 1 ................................................................................................................................................... 39
   Ideation Phase ............................................................................................................................ 39
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Study 1 Means, Standard Deviations, and Correlations</td>
<td>95</td>
</tr>
<tr>
<td>2.</td>
<td>Study 1 Regression Analyses - Perceived Usefulness</td>
<td>96</td>
</tr>
<tr>
<td>3.</td>
<td>Study 1 Regression Analyses – Overall Evaluation</td>
<td>97</td>
</tr>
<tr>
<td>4.</td>
<td>Study 1 Regression Analyses - Selection</td>
<td>98</td>
</tr>
<tr>
<td>5.</td>
<td>Study 1 Regression Analyses - Recommendation</td>
<td>99</td>
</tr>
<tr>
<td>6.</td>
<td>Study 2 Means, Standard Deviations, and Correlations (Full Sample)</td>
<td>100</td>
</tr>
<tr>
<td>7.</td>
<td>Study 2 Suppression Regression Analyses (Full Sample) – Perceived Usefulness</td>
<td>101</td>
</tr>
<tr>
<td>8.</td>
<td>Study 2 Suppression Regression Analyses (Full Sample) – Overall Evaluation</td>
<td>102</td>
</tr>
<tr>
<td>9.</td>
<td>Study 2 Suppression Regression Analyses (Full Sample) – Selection</td>
<td>103</td>
</tr>
<tr>
<td>10.</td>
<td>Study 2 Suppression Regression Analyses (Full Sample) – Recommendation</td>
<td>104</td>
</tr>
<tr>
<td>11.</td>
<td>Study 2 Regression Analyses (Full Sample) - Perceived Usefulness</td>
<td>105</td>
</tr>
<tr>
<td>12.</td>
<td>Study 2 Regression Analyses (Full Sample) - Perceived Legitimacy</td>
<td>106</td>
</tr>
<tr>
<td>13.</td>
<td>Study 2 Regression Analyses (Full Sample) - Overall Evaluation</td>
<td>107</td>
</tr>
<tr>
<td>14.</td>
<td>Study 2 Regression Analyses (Full Sample) - Selection</td>
<td>108</td>
</tr>
<tr>
<td>15.</td>
<td>Study 2 Regression Analyses (Full Sample) - Recommendation</td>
<td>109</td>
</tr>
<tr>
<td>16.</td>
<td>Study 2 Means, Standard Deviations, and Correlations (Revised Sample)</td>
<td>110</td>
</tr>
<tr>
<td>17.</td>
<td>Study 2 Suppression Regression Analyses (Revised Sample) – Perceived Usefulness</td>
<td>111</td>
</tr>
<tr>
<td>18.</td>
<td>Study 2 Suppression Regression Analyses (Revised Sample) – Overall Evaluation</td>
<td>112</td>
</tr>
<tr>
<td>19.</td>
<td>Study 2 Suppression Regression Analyses (Revised Sample) – Selection</td>
<td>113</td>
</tr>
</tbody>
</table>
20. Study 2 Suppression Regression Analyses (Revised Sample) – Recommendation .................................................................114
21. Study 2 Regression Analyses (Revised Sample) - Perceived Usefulness......115
22. Study 2 Regression Analyses (Revised Sample)- Perceived Legitimacy......116
23. Study 2 Regression Analyses (Revised Sample) - Overall Evaluation.........117
24. Study 2 Regression Analyses (Revised Sample) - Selection.......................118
25. Study 2 Regression Analyses (Revised Sample) - Recommendation.........119
CHAPTER 1
INTRODUCTION

An Introduction to Creativity and Innovation

Creativity and innovation have long been noted as the ultimate forces that drive civilization forward (Hennessey & Amabile, 2010). Creativity is typically defined as the generation of ideas that are both novel and useful (Amabile, 1988, 1996; Oldham & Cummings, 1996), with novelty representing the degree of uniqueness relative to other ideas currently available and usefulness indicating the potential to provide direct or indirect value in either the short or long term (Amabile, 1996; Zhou & Shalley, 2003). Creativity has also frequently been linked to innovation, the intentional introduction and application of ideas, processes, products, or procedures which are new to the adopter and intended to provide significant benefits to an individual, group, organization, or society (West & Farr, 1990). Thus, creativity can be viewed as the generation of novel and useful ideas with the potential to translate to subsequent innovation through adoption and use.

Since both creativity and innovation are clearly linked to ideas with the potential to provide important benefits, they are viewed as increasingly essential to our ability to address a myriad of societal challenges in both the public and private sector arenas (Hennessey & Amabile, 2010; Runco, 2004). For example, many reformers have suggested that innovative school practices can remedy faltering educational performance (Kanter, 2006; Sternberg, 2008), and creative designs for “green” products have great potential to mitigate
environmental threats such as declining natural resources or harmful emissions (Nidumolu, Prahalad, & Rangaswami, 2009). Similarly, creativity and innovation are believed to promote organizational effectiveness and survival (Amabile, 1996; Nonaka, 1991) in the private sector. The development and use of creative and innovative ideas enables business organizations to adapt to challenging environments characterized by increasing uncertainty, competition, and technological change (George, 2008; Greenhalgh, Robert, Bate, Macfarlane, & Kyriakidou, 2005; Klein & Sorra, 1996; Oldham, 2002; Shalley, Zhou, & Oldham, 2004). For example, Apple (formerly known as Apple Computer) has thrived after responding to unfavorable conditions in its former core business of computer hardware by transforming into a provider of new software, entertainment, and consumer products and services such as iTunes software, the Apple Music Store, and iPod and iPhone consumer devices (Johnson, Christensen, & Kagermann, 2008; Rigby, Gruver, & Allen, 2009).

Not surprisingly, businesses and consultants are peddling an array of new tools which promise to dramatically improve creativity and innovation. Eli Lilly’s initiative to solicit innovative ideas to revitalize its drug pipeline was so successful that it was spun off as a new business venture. The resulting company, named Innocentive, provides innovation services to other organizations, which include hosting “challenges” or contests for “solvers” to propose solutions to clients’ most difficult problems (Chesbrough & Graman, 2009). IDEO, the product design consulting firm, has developed a new service offering based on the notion that the techniques which it has successfully employed to design innovative products can be extended to help client organizations become more creative and innovative (Brown, 2009).

Given this level of hope, enthusiasm, and spending, it is clearly important to understand creativity and innovation. Moreover, although some researchers have tended to
define innovation in terms of creativity (George, 2008; Hennessey & Amabile, 2010), they are clearly distinct concepts (Anderson et al., 2004; Shalley, 2002), and understanding creativity and innovation thus also requires recognizing the fundamental differences between them (Shalley et al., 2004; West, 2002). In colloquial terms, innovation scholars have suggested that creativity involves thinking about new things, whereas innovation involves doing new things (West & Rickards, 1999). Similarly, creativity scholars have described creative ideas as the “raw material” for subsequent innovation (Shalley et al., 2004). More formally, creativity researchers have suggested that creativity be conceptualized as a first yet necessary step in the innovation process (Mumford & Gustafson, 1988). According to this view, creativity involves the development of novel and potentially useful ideas, but innovation only occurs when the ideas are implemented within a unit or organization (Amabile, 1996). Innovation researchers have similarly suggested that idea generation alone can be considered creativity, in contrast to innovation which has an inherent application element, and thus includes both idea generation and implementation (Anderson et al., 2004). In sum, both creativity and innovation researchers have generally agreed that creativity is a first stage in the innovation process and involves the development of ideas, whereas innovation is the application and implementation of ideas in practice (West, 1997). Consequently, the term ‘idea’ will be used in this research to reflect not only creative outputs, but also innovation inputs in the form of potential innovations.

**Overview of Creativity Research**

Given the significance of creativity and innovation, it is not surprising that research on both topics has also mushroomed. Within the domain of creativity, a considerable number of new publication outlets have emerged, and the topic has also garnered increased interest in
mainstream journals within disciplines such as psychology and organizational behavior (Hennessey & Amabile, 2010). As a result, creativity scholars have created a vast body of literature and empirical studies regarding a large number of contextual and individual factors which can promote or inhibit the generation of creative ideas (Shalley et al., 2004).

Within group and organizational contexts, a number of variables have been found to significantly enhance or inhibit creative performance, such as job complexity (Amabile & Gryskiewicz, 1989; Farmer, Tierney, & Kung-McIntyre, 2003; Oldham & Cummings, 1996), supervisory (Amabile & Conti, 1999; Frese, Teng, & Wijnen, 1999; Shalley & Gilson, 2004) and coworker (Madjar, Oldham, & Pratt, 2002; Zhou & George, 2003) relationships, rewards and evaluation systems (Amabile, 1996; Baer, Oldham, & Cummings, 2003; Zhou & Shalley, 2003), the physical workspace (Oldham, Cummings, & Zhou, 1995; Shalley & Oldham, 1997), temporal dynamics (Amabile, Hadley, & Kramer, 2002; Andrews & Smith, 1996), creativity prompts (Fitzsimons, Chartrand, & Fitzsimons, 2008; Shalley et al., 2004; Unsworth, Wall, & Carter, 2005), networks (Perry-Smith, 2006; Uzzi & Spiro, 2005), and psychological safety (George, 2008; Lee, Edmondson, Thomke, & Worline, 2004). For example, studies have found fairly consistent relationships between job complexity and creativity (Shalley et al., 2004), including positive relationships between objective measures of employee job complexity and supervisor ratings of creativity (Tierney & Farmer, 2002), as well as positive relationships between employee self-reported job complexity and the number of creative ideas submitted to an organizational suggestion system (Hatcher, Ross, & Collins, 1989).

At the individual level, a number of personality (Rodan & Galunic, 2004; Tierney & Farmer, 2002) and cognitive style (Kirton, 1994; Kwang & Rodrigues, 2002; Tierney,
Farmer, & Graen, 1999; Woodman, Sawyer, & Griffin, 1993) dimensions have been found to either promote or inhibit creativity. For example, the “Big Five” personality trait of openness to experience (McCrae & Costa, 1997) has been found to promote creativity in several studies across a variety of domains (Feist, 1998), including manager ratings of employee creativity within an organizational setting (Scratchley & Hakstian, 2000). Finally, creativity researchers have also made progress in exploring and identifying the mechanisms through which individual and contextual factors may translate to creativity and idea generation, such as intrinsic motivation (Amabile, Goldfarb, & Brackfield, 1990; Shin & Zhou, 2003), affective mood states (Isen, 1999; Madjar & Oldham, 2002; George & Zhou, 2001), and creative processes (Drazin, Glynn, & Kazanjian, 1999; Mumford, 2000).

Overview of Innovation Research

Innovation scholars have similarly developed a substantial base of research knowledge over the past several decades (Anderson, De Dreu, & Nijstad, 2004; West, 2002), including the individual, group or team, and organizational factors which facilitate or inhibit innovation. At the individual level, a number of motivational (Amabile & Conti, 1999; Frese, Teng, & Wijnen, 1999), job design (Cordery, 1996; Axtell, Holman, Unsworth, Wall, Waterson, & Harrington, 2000), personality (Barron & Harrington, 1981; George & Zhou, 2001), cognitive ability (Kirton, 1976; Patterson, 1999), and affective (George, 1996; Zhou & George, 2002) dimensions have been found to facilitate innovation (Anderson et al., 2004; West, 2002).

Similarly, at the workgroup or team level, innovation is influenced by various team member characteristics (De Dreu, 1997; Paulus, 2002), team structure (Ancona & Caldwell, 1992; West & Anderson, 1996), team process (Nemeth & Owens, 1996; Sutton & Hargadon,
team leadership (Tierney, Farmer, & Graen, 1999; Shalley & Perry-Smith, 2001), and team climate (De Dreu & West, 2001; Edmondson, 1999) dimensions (Anderson et al., 2004; West, 2002). For example, a number of studies have found team climates with support for innovation, in which attempts to innovate are rewarded rather than punished (Kanter, 1983), to be positively related to objective measures of team innovation within health care (West & Anderson, 1996), TV production (Carter & West, 1998), and community mental health (Borrill et al., 2000) settings.

Moreover, researchers have also identified important organization-level enablers of innovation (Birkinshaw et al., 2008; West et al., 2004) including organizational strategy (Burgelman, 1991; Miles & Snow, 1978), organizational size (Rogers, 2003), organizational structure (Damanpour, 1991; Kimberly, 1981), organizational resources (Damanpour, 1991; Kanter, 1983), and organizational culture (Madjar et al., 2002; West & Anderson, 1992). Finally, innovation research has expanded from an initial focus on technological innovation (Henderson & Clark, 1990; Utterback, 1994) to the examination of additional forms of innovation such as process innovation (Pisano, 1996), service innovation (Gallouj & Weinstein, 1997), strategic innovation (Hamel, 1998), and management innovation (Birkinshaw et al., 2008).

Open Questions

Despite this impressive body of research on creativity and innovation, important questions remain relatively neglected, poorly understood, or unexamined entirely (Mumford, 2003; West, 2002). Although creativity and innovation include several sequential stages including problem construction, information gathering, conceptual combination, idea generation, idea evaluation, implementation planning, and monitoring (Mumford &
Gustafson, 1988; Mumford, 1991), most studies have focused on idea generation (Blair & Mumford, 2007; West, 2002). However, since innovation does not occur unless the ideas generated are also selected to be implemented (Levine, Choi, & Moreland, 2003; Mumford, 2003), creativity or idea generation is a necessary but insufficient condition for innovation (George, 2008; Nijstad & DeDreue, 2002; Shalley et al., 2004). As a result, although research has made significant progress in understanding creative idea generation (Licuanan, Dailey, & Mumford, 2007; Litchfield, 2008; Lonergan, Mumford, & Scott, 2004), the relationship between idea generation and implementation remains poorly understood (Mumford, 2003; Runco & Chand, 1994; West, 2002).

Surprisingly, little research has examined what actually happens once ideas have been generated (Shalley et al., 2004; West, 2002). How and why new ideas and practices are adopted have long been central questions in management and organizational theory, yet research exploring exactly what motivates adoption decisions has received a surprising lack of attention (Kennedy & Fiss, 2009; West, 2002). For example, idea evaluation, the process by which an idea is tested or appraised according to various criteria or standards to determine whether it represents a potentially ‘useful’ product in the focal domain (Amabile, 1996; Csikszentmihalyi, 1999), has been relatively neglected (Blair & Mumford, 2007; Lonergan, Scott, & Mumford, 2004). Similarly, idea selection, which refers to the decision to adopt or use an innovation (Choi & Chang, 2009; Nijstad & De Dreu, 2002), is also poorly understood.

Although their view is not uncontested (Litchfield, 2008), several scholars have suggested that creativity or idea generation is “the easy bit” (Shalley, 2002; West, 2002) compared to subsequent adoption and innovation. Indeed, leaders at companies such as IBM
or Microsoft can be bombarded with thousands of ideas from employees (Bjelland & Wood, 2008; Bruch & Menges, 2010). In contrast, subsequent processes such as idea evaluation and selection are not only equally necessary for innovation (Runco & Smith, 1992), but may be significantly more difficult given the complexity of evaluating novel and unproven ideas (Mumford, Blair, Dailey, Leritz, & Osburn, 2006). Since the likelihood of success for each idea is uncertain (Cardinal & Hatfield, 2000) and only a small subset of the myriad ideas which are generated can be implemented (West, 2002), both effective idea evaluation and idea selection are directly related to desired innovation outcomes. How exactly might the sponsor of an Innocentive contest or a leader at Microsoft or IBM evaluate and ultimately select the most promising idea(s) to implement from a myriad of alternatives?

Unfortunately, little is known about the processes used to evaluate these ideas with uncertain outcomes or the selection processes which govern choices among the ideas which have been generated (Blair & Mumford, 2007; Nijstad & De Dreu, 2002). As a result, increasing understanding of the factors which promote the implementation of ideas into practice may ultimately be the most critical determinant of outcomes (Lonergan, Mumford, & Scott, 2004; West, 2002), and is an important and urgent priority (Mumford, 2003; Runco & Smith, 1992). To address this need, this research will proceed through several stages.

Chapter 2 will briefly explore the creativity and innovation literatures to examine potential sources of this gap in knowledge about the idea evaluation and selection processes which are believed to link creativity and innovation, and to propose that it results from a shared but untested assumption between two very similar literatures. In Chapter 3, a behavioral decision research (BDR) perspective will be applied to examine and ultimately challenge the reasonableness of an assumption shared by the two literatures: the notion that
increased creativity will increase the likelihood of innovation. Chapter 4 will extend the BDR framework to develop new theory and hypotheses regarding the relationship between creative idea generation and implementation. More specifically, BDR perspectives on the availability, representativeness, and categorization heuristics will be applied to propose that decision makers will automatically and reflexively discount and perceive novel (unique) ideas to be less useful. Similarly, BDR perspectives on the endowment effect, system justification theory, and the appraisal tendency framework will be extended to propose that decision makers will automatically and reflexively discount novel (new) ideas and perceive them to be less useful. Based on the insights provided by these perspectives, the traditional assumption that increased creativity promotes innovation will be re-examined. This research will propose that the relationship between creativity and innovation is more complex than traditionally expected, and thus that increases in creativity do not necessarily promote increased innovation. Chapter 5 will describe and report the results from the first of two empirical studies used to test the new theory and hypotheses. Next, based on the results of the first empirical study, Chapter 6 will refine and extend the theoretical model. Chapter 7 will describe and report the results from a second empirical study, which was designed to test the refined theory and hypotheses. Finally, Chapter 8 will discuss this research within the broader context of creativity and innovation scholarship, including its theoretical contribution, limitations, possible extensions via future research, and practical implications.
CHAPTER 2
FURTHER EXPLORATION OF THE CREATIVITY AND INNOVATION LITERATURES

The Development and Evolution of Two Literatures

On the one hand, the lack of focus on the relationship between creative idea generation and implementation, including the processes of idea evaluation and selection, is surprising. However, such a gap may be more understandable when viewed within the context of the historical development of the creativity and innovation literatures. For example, the relatively separate evolution of the two literatures could provide one potential explanation of the gap. Creativity research has traditionally been the domain of social psychologists, focused primarily on individual level outcomes, and conducted with experimental methods and relatively short time horizons. In contrast, innovation research has more often been the domain of organizational scholars, focused on organizational level outcomes, and conducted with field and often longitudinal methods. As such, the community of creativity scholars has tended to focus on the individual personality and social psychological influences (George, 2008) on the generation of ideas, including underlying causal mechanisms. Innovation scholars, on the other hand, have devoted greater attention to what makes organizations more or less capable of adopting new practices or technologies (Strang & Soule, 1998) and thus have had much less to say about generative mechanisms (Birkinshaw et al., 2008). In sum, the relatively separate development of both literatures has resulted in two streams of research which are highly focused on either idea generation or idea
implementation, as opposed to questions regarding the relationship between these two
necessary steps in the innovation process (Nijstad & DeDreu, 2002).

Similarities and Shared Assumptions

On the one hand, the separate development of the creativity and innovation literatures
seems to be an intuitive explanation for the lack of attention devoted to the relationship
between idea generation and idea implementation. However, despite being published in
different domains by different researchers, the two literatures have also often discussed
similar constructs, and thus it is also important to consider their common elements. Indeed,
despite the separate development of the creativity and innovation literatures, closer
examination reveals many similarities and overlaps between the two domains of scholarship.
First, both literatures have examined similar factors which may promote or inhibit the desired
outcome (e.g. creativity or innovation). Not only have both domains examined similar levels
of analysis such as individual, team, and organizational factors (Hennessey & Amabile,
2010; West, 2002), but many of the factors shown to influence creativity at a particular level
have also separately been shown to influence innovation. For example, group psychological
safety has been linked to both creativity (Edmondson & Mogelof, 2006; George, 2008) and
innovation (Edmondson, 1999; Gibson & Gibbs, 2006; West, 2002). Both literatures have
also noted that these influences can significantly impact the ability to generate ideas or to
innovate, although the innovation literature has also examined factors which influence
successful implementation of innovations (Klein, Conn, & Sorra, 2001; Klein & Knight,
2005) following the decision to adopt (i.e. after idea selection).

Second, the constructs used to measure or assess creativity and innovation have also
tended to be similar. Both literatures have tended to conceptualize the focal outcome in
terms of novelty and usefulness (Amabile, 1996; West & Farr, 1990), as well as to employ very similar conceptions of relevant constructs and their underlying dimensions. For example, within the domain of novelty, each literature has highlighted distinctions between absolute and relative novelty, which respectively represent whether something is entirely new or merely new to the relevant unit of adoption (Anderson & King, 1983; Shalley et al., 2004). Both areas of research have also employed continuum models to assess novelty. For example, innovation research has indicated that innovations can range from small and incremental to radical and competence destroying. More specifically, innovations can be categorized as improvement, incremental, ad hoc, recombinative, formalization, or radical based on the degree and nature of change they imply for an existing system (Gallouj & Weinstein, 2007). Similarly, creativity scholars have also noted that creative ideas can represent either incremental or radical departures from the status quo (George, 2008; Mumford & Gustafson, 1988; Shalley et al., 2004). For example, creativity research has distinguished between “Little C” and “Big C” forms of creativity, which respectively represent “daily problem solving and the ability to adapt to change” versus “relatively rare displays of creativity that have a major impact on others” (Hennessey & Amabile, 2010).

Third, both literatures not only employ stage process models by which they are purported to improve organizational outcomes, but the respective models also exhibit similarities and overlaps despite the use of slightly different terminology. As noted previously, creativity is believed to involve stages such as problem construction, information gathering, concept selection, conceptual combination, idea generation, idea evaluation, implementation planning, and monitoring (Mumford, Mobley, Uhlman, Reiter-Palmon, & Doares, 1991). Innovation researchers have also suggested that innovation proceeds
according to stages, which include awareness, adoption, implementation, and routinization (Rogers, 2003). Although there appears to be limited overlap between the respective stage models during the early stages of creativity, such as problem construction, information gathering, or concept selection, the latter idea generation, idea evaluation, implementation planning, and monitoring stages within the creativity literature appear to exhibit substantial overlap with the innovation literature stages of awareness, adoption, implementation, and routinization.

Fourth, both creativity and innovation researchers reference similar mechanisms by which individual or contextual factors may promote the desired proximal outcomes (e.g. creativity or innovation). For example, group processes such as effective conflict management have been positively linked to both creativity (Mumford & Gustafson, 1988) and innovation (Nemeth, 1986; West, 2002). Similarly, researchers have also linked individual and group integrative processes to creativity (Taggar, 2002) and innovation (Stevens & Campion, 1994; Anderson et al., 2004). Perhaps more importantly, both literatures have recognized and emphasized that creativity and innovation include significant motivational and cognitive components or processes. For example, scholars examining innovation have noted that cognition is essential to the process of adoption (George, Chattopadhyay, Sitkin, & Barden, 2006; Kennedy & Fiss, 2009; Ocasio, 1997). Similarly, creativity researchers have noted that creativity is a complex and highly cognitive activity (Runco, 2004) which can involve underlying cognitive operations such as conceptualization (Mumford, Olsen, & James, 1989), imagination (Singer, 1999), incubation (Smith & Dodds, 1999), insight (Sternberg & Davidson, 1999), intuition (Policastro, 1999), Janusian simultaneous consideration of perspectives (Rothenberg, 1999), logic (Johnson-Laird, 1999),
metaphor (Gibbs, 1999), mindfulness (Moldoveanu & Langer, 1999), misjudgment (Runco 1999a), perceptgenesis (Smith, 1999), and perspective taking (Runco 1999b). Noting the highly cognitive nature of the creative process, creativity scholars have increasingly advocated greater attention to how cognition and “the mind” (George, 2008) influence creativity in organizations.

Finally, the similarity between the two research streams might be expected to promote convergence and confidence in common or shared knowledge. However, the substantial overlaps between the two literatures have also resulted in shared gaps and weaknesses given the tendency to explore (or neglect) many of the same questions; examine similar concepts and life cycle stages; and adopt the same underlying assumptions. For example, both communities of researchers have tended to advocate that maximization of the final stage outcome (e.g. creativity or innovation) is a universal good, although both literatures have also recently begun to advocate a more balanced view that creativity could have unintended or even negative consequences (Anderson et al., 2004; George, 2008; Mumford, 2003; West & Anderson, 1992). More significantly, scholars have also noted that research has been characterized by a traditional yet unexamined assumption that increased creativity is not only inherently desirable, but inevitably produces greater innovation and other desirable outcomes (Mumford, 2003; Paulus, 2002; Shalley et al., 2004; West, 2002).

On the one hand, the belief that greater creativity equates to greater innovation is somewhat understandable given the similarities between the literatures and some resulting confusion about the difference between them. However, the traditional assumption that more creativity translates to more innovation has tended to foreclose explicit consideration of the relationship between the two constructs, and thus has obscured understanding of relationships
between idea generation and implementation. Fortunately, scholars in both domains have increasingly begun to advocate exploration of unexamined assumptions and previously neglected questions (Birkinshaw et al., 2008; George, 2008; Nijstad & De Dreu, 2002; Shalley et al., 2004). For example, scholars have increasingly highlighted that existing models are only a first step, and that plausible model assumptions and propositions must be subjected to direct empirical test (Lonergan, Scott, & Mumford, 2004). Similarly, creativity researchers have begun to advance potential models of the idea evaluation process (Mumford, Lonergan, & Scott, 2002) which might increase understanding of the relationship between idea generation and implementation.
CHAPTER 3

AN INTEGRATED PERSPECTIVE ON CREATIVITY AND INNOVATION

Although traditional assumptions which tend to equate creativity with innovation have yet to attract much conceptual attention or empirical scrutiny (George, 2008), they do not appear to be entirely unreasonable. Indeed, the notion that an increase in the presence of creative ideas will increase the likelihood that creative ideas will be selected and implemented (Shalley et al., 2004) seems logical and intuitively appealing. Since creativity is most frequently defined in terms of ideas with high novelty and usefulness (George, 2008), an increase in creativity can be reasonably conceptualized as either 1) an increase in the number of ideas (holding novelty and usefulness constant); 2) an increase in the novelty of ideas (holding the number of ideas and usefulness constant); or 3) an increase in the usefulness of ideas (holding the number of ideas and novelty constant). As such, an individual, team, or organization which receives a boost in the presence of creativity as defined above (e.g. more ideas of equal novelty and usefulness, more novel ideas holding the number and usefulness of ideas constant, or more useful ideas holding the number and novelty of ideas constant), would be expected to ultimately select and implement a similar mix of ideas, resulting in a higher level of innovation.

Re-Examining Traditional Assumptions

While the traditional assumption seems plausible, much anecdotal evidence also suggests that the generation of creative ideas often fails to translate to favorable evaluation
and ultimately selection and innovation. Extremely original and useful ideas are often not selected and even resoundingly rejected. For example, J.D. Rowling’s spectacularly successful Harry Potter series was rejected by numerous publishers, and many technology companies such as IBM failed to see the value in the personal computer (Licuanan, Dailey, & Mumford, 2007). Consistent with this view, scholars have increasingly suggested that the traditional assumption should not be taken for granted and that creativity may not translate to innovation (George, 2008; Shalley et al., 2004). Even as formidable an intellect as Emerson struggled to effectively evaluate creative ideas and translate them to innovation, noting “In every work of genius we recognize our own rejected thoughts: they come back to us with a certain alienated majesty” (Emerson, 2009).

Beyond anecdotal evidence, several findings from existing creativity and innovation research also highlight that the belief that creativity will lead to innovation warrants more careful consideration. For example, prior research has suggested that certain contextual factors may be more effective in promoting creativity rather than innovation or vice versa (Nijstad & DeDreu, 2002). More specifically, brainstorming research has long indicated that individuals are more effective than groups in generating creative ideas (Diehl & Stroebe, 1987; Kerr & Tindale, 2004), yet innovation researchers have suggested that groups may be more effective than individuals in selecting and implementing ideas (Nijstad & DeDreu, 2002). As such, the notion that the factors which optimize creativity may differ from those which maximize innovation (West, 2002) challenges the assumption that an increase in the former one will lead to an increase in the latter. Moreover, certain contextual factors, such as external demands, are believed to have opposing effects on creativity (Amabile, 1998) and innovation (West, 2002). Granted, this finding relates to how creativity and innovation are
influenced by external demands, as opposed to the relationship between them. However, it is difficult to reconcile the idea that more creativity promotes more innovation with the observation that creativity is inhibited by a contextual variable which is simultaneously believed to promote innovation.

Similarly, established bases of evidence from several other research domains also seem to counter the notion that an increase in creativity will seamlessly increase subsequent idea selection and innovation. First, consistent with the views of scholars who have noted that the generation of creative ideas may have unanticipated or even undesirable consequences (George, 2008; Shalley et al., 2004), an increase in the number of ideas could actually decrease innovation. For example, an emerging literature in behavioral decision research (BDR) suggests that providing decision makers with more alternatives can actually reduce the likelihood that any of the various choices will be selected (Dhar, 1997; Iyengar & Lepper, 2000; Shafir, Simonson, & Tversky, 1993). As a result, an increase in the number of creative ideas could reduce innovation by decreasing the likelihood that any of the ideas would be subsequently selected for implementation. Second, the mere presence of more useful ideas does not appear to trigger increased idea selection and innovation. Indeed, a substantial literature on the research-practice gap has illustrated that many useful ideas generated through research are not implemented in practice even when practitioners are provided with substantial evidence of their usefulness (Highhouse, 2008; Johns, 1993; Rynes, Bartunek, & Daft, 2001; Schmitt, 1997). Finally, the mere presence of more novel ideas may not promote increases in idea selection and innovation. For example, research on newcomer socialization has demonstrated that the ideas of newcomers, many of whom are hired
specifically to provide creative ideas and new perspectives, are typically rejected (Levine, Choi, & Moreland, 2003).

**Benefits of a New Perspective: Behavioral Decision Research (BDR)**

Given that the traditional assumption about the relationship between creativity and innovation is increasingly subject to challenge based on converging findings from several other literatures, further examination is clearly warranted. On the one hand, the traditional view seems valid if idea evaluation and selection processes are optimally effective as implied by traditional rational and logical models of decision making (Hammond, Keeney, & Raiffa, 1999; Simon, 1956), which would predict that the most promising ideas will be selected and implemented. Moreover, the traditional assumption may be reasonable even if evaluation and selection processes are not optimally accurate or effective. After all, even if idea evaluation and selection are purely random processes, an increase in the average level of novelty or usefulness for the average idea would presumably result in the selection of more novel and/or useful ideas on average (Litchfield, 2008; Rietzschel, Nijstad, & Stroebe, 2006). In sum, the traditional assumption seems reasonable if evaluation and selection processes are either entirely random and thus relatively benign, or accurate and effective in accordance with rational (and idealized) models of decision making.

On the other hand, the traditional assumption is less tenable if evaluation and selection processes are neither optimally rational nor entirely random, and thus subject to systematic error. For example, if decision makers make systematic errors in their evaluation and selection of highly novel ideas (e.g. the proposal for the first Harry Potter book), the traditional view would clearly be subject to challenge. Interestingly, a long tradition of BDR scholarship illustrates that human judgment and decisions do not conform to rational ideals
and are subject to systematic errors and biases (Gilovich, Griffin, & Kahneman, 2002; Kahneman, Slovic, & Tversky, 1982; Simon, 1956; Tversky & Kahneman, 1974). Since these judgment and decision errors have been demonstrated in a number of domains in a variety of organizational settings (Dunning, Heath, & Suls, 2004; Gilovich et al., 2002; Moore & Flynn, 2008), a BDR perspective provides a highly robust framework to examine and potentially challenge the traditional assumptions of the two literatures.

A BDR perspective also provides a particularly useful lens for exploring the creativity and innovation literatures since researchers in both domains have emphasized that both processes are highly cognitive (Mumford, Blair, Dailey, Leritz, & Osburn, 2006; Runco, 2004; Kennedy & Fiss, 2009), yet have employed models of motivation and cognition with decidedly rationalist tenets and assumptions (Birkinshaw et al., 2008; Damanpour, 1987; George, 2008). In contrast, a substantial body of BDR literature indicates that motivation and cognition are not entirely rational (Kunda, 1990; Larrick, 1993; Wilson & Brekke, 1994) and that rational models of behavior may be inappropriate for assessing individual and organizational behavior and decisions (Lerner & Tetlock, 1999; March, 1991; Simon, 1956; Tetlock, 1985). Consistent with the view that a BDR framework can significantly inform topics of interest to organizational researchers (Moore & Flynn, 2008), the BDR perspective provides a particularly relevant framework for re-examining the creativity and innovation literatures given its ability to question the traditional rationalistic underpinnings or assumptions of the two domains. Moreover, a BDR framework not only provides a means to challenge the rationalistic assumptions of the two literatures, but also can leverage a substantial base of existing research on cognitive biases and errors to predict how and when specific assumptions within the two literatures may be flawed. This research will focus on
the traditional rationalistic assumption of the two literatures that an increase in creativity will increase innovation. While an increase in creativity can be conceptualized as an increase in the number, usefulness, and/or novelty of ideas, this research will examine the effects of increased novelty. Novelty was deemed most meaningful for relevant for purposes of this research since the BDR literature has already examined the relationship between number of choices and decision outcomes (Iyengar & Lepper, 2000; Iyengar, Wells, & Schwarz, 2006), and the innovation literature (West & Anderson, 1992; 1996) has similarly examined the relationship between the perceived usefulness of an innovation and its subsequent implementation.
CHAPTER 4
THEORY AND HYPOTHESES

BDR scholarship, which emphasizes that decision makers have cognitive limitations and thus make systematic errors in judgments and decisions (Heath, Larrick, & Klayman, 1998; Larrick, 2004; Nisbett & Ross, 1980; Simon, 1956; Tversky & Kahneman, 1974), challenges the intuitive notion that an increase in creativity (e.g. idea generation) will result in greater selection and implementation of these potential innovations. Since the BDR literature includes a vast array of decision making heuristics and resulting biases which have been reviewed extensively elsewhere (see Gilovich, Griffin, & Kahneman, 2002; Kahneman, Slovic, & Tversky, 1982; Kerr, McCoun, & Kramer, 1996; Moore & Flynn, 2008), this review will not consider the implications of the entire spectrum of BDR knowledge for idea evaluation and selection. Rather, this analysis will highlight the clear relevance of BDR principles to innovation decisions by closely examining two cognitive biases which seem especially relevant to the relationship between creativity and innovation, including underlying processes of idea evaluation and selection.

First, since both creativity and innovation have been defined in terms of novelty, any biases toward novelty seem especially relevant to innovation decisions. Moreover, since people tend to exhibit strong preferences for the typical and familiar compared to more novel and unique alternatives which are less familiar (Reber & Schwarz, 1999; Schwarz, Sanna, Skurnik, & Yoon, 2007; Tellis, 2004; Zajonc, 2001), increases in creativity (i.e. novelty)
thus may not translate to subsequent selection and implementation. Second, since both the creativity and innovation literatures have emphasized that creativity and innovation can be conceptualized in terms of change relative to the status quo (Mumford & Gustafson, 2002; West, 2002), the status quo bias (Samuelson & Zeckhauser 1988) is also especially pertinent to innovation decisions. People often exhibit an irrational preference for the status quo compared to other alternatives (Jost & Banaji, 1994; Jost, Pietrzak, Liviatan, Mandisodza, & Napier, 2008; Sen & Johnson, 1997; Thaler & Sunstein, 2008), and thus increases in creativity (i.e. new ideas which represent greater change relative to the status quo) may not result in subsequent idea selection and implementation. In sum, BDR research suggests that the very factors by which novelty is typically defined are also likely to be negatively related to subsequent evaluation, selection, and implementation. Consequently, this analysis will challenge the premise that generation of creative ideas will consistently result in improvements in actual innovation (e.g. implementation).

The Novelty Bias and the Systematic Devaluation of Novel (Unique) Ideas

The established finding that people prefer the typical and familiar to more novel and unique hence less familiar alternatives (Reber & Schwarz, 1999; Schwarz et al., 2007; Tellis, 2004; Zajonc, 2001) suggests that decision makers are likely to exhibit a novelty bias, such that they may automatically view more novel and unique ideas as less useful. This biased evaluation or judgment can be explained by decision makers’ reliance on several automatic and unconscious decision making heuristics, each of which has been established in prior BDR research.

First, an extensive body of research on the availability heuristic has demonstrated that our assessments of the likelihood of the outcomes of our decisions are biased. Rather than
simply reflecting true likelihoods based on actual outcome probabilities, they are influenced by the ease with which we can recall ‘available’ relevant examples (Tversky & Kahneman, 1974). For example, a person estimating the likelihood that a particular investment will be successful will form more optimistic assessments when they can easily recall examples of investments which have been profitable than when they have difficulty identifying relevant exemplars. Moreover, knowledge of the availability heuristic and resulting biases suggests that decision makers who intuitively use this heuristic are likely to perceive highly novel ideas as less useful. For example, information related to highly novel and unique ideas may be less available and accessible in memory than information for less novel but more familiar alternatives. As a result, decision makers assessing more novel ideas may generate lower assessments of potential benefits and/or lower judgments of the likelihood of success due to the relative difficulty of recalling relevant examples compared to the ease of recall for less novel and more familiar alternatives.

Second, a substantial literature on the representativeness heuristic has illustrated that our judgments of probability or frequency are biased, since they are influenced by the degree of resemblance between our hypotheses and available data (Kahneman & Frederick, 2002; Tversky & Kahneman, 1974). For example, if a person has a hypothesis (i.e. effective salespeople are talkative and attractive), and then encounters data which do not resemble the hypothesis (i.e. a job candidate who is neither talkative nor especially attractive), he or she will tend to underestimate the probability of related judgments (e.g. that the job candidate will be an effective salesperson). Moreover, knowledge of the representativeness heuristic and resulting biases suggests that decision makers who naturally apply this heuristic and its notion that “like equals like” (Thaler & Sunstein, 2008) are likely to perceive highly novel
and unique ideas as less useful. For example, judgments of the probability for the “hypothesis” that an idea will solve a problem may be influenced by the degree to which the idea appears to represent (i.e., be similar to) the problem domain. However, since highly novel and unique ideas are unusual by definition, decision makers are likely to perceive less “likeness” or similarity between these potential innovations and most problem domains. As a result, decision makers assessing more novel (i.e., more unique) ideas may generate lower assessments of the probability that a novel idea will solve the problem in a given domain compared to less novel alternatives which appear to be more similar to the focal domain. More specifically, decision makers may generate lower judgments of the potential benefits and the likelihood of success for more novel and unique ideas compared to less novel and unique ideas, which are likely to be perceived as more representative and similar to the relevant problem domains.

Third, an established literature on the cognitive processes of categorization has illustrated that our assessments of many objects are biased, because they are influenced not only by the items’ placements within categories (Dhar, 1997; Tversky & Shafir, 1992), but also by the “mere presence” of meaningful or even arbitrary categories (Bettman, Luce, & Payne, 1998; Johnson & Payne, 1985; Mogilner, Rudnick, & Iyengar, 2008). For example, research on the “categorical imperative” has demonstrated that objects which do not fit existing categories and cognitive schemas are automatically discounted and often outright dismissed (Urban, Hulland, & Weinberg, 1993; Zuckerman, 1999). Moreover, knowledge of categorization cognitive processes suggests that decision makers who intuitively use this heuristic are likely to perceive highly novel ideas as less useful. For example, highly novel (e.g., more unique) ideas will be less likely to “fit” or trigger associations with existing
categories and cognitive schemas, whereas less novel (e.g., less unique) alternatives are more likely to fit or be assimilated to existing categories and schemas. As a result, decision makers assessing more novel and unique ideas may generate lower assessments of potential benefits and/or lower judgments of the likelihood of success due to the relative difficulty of “fitting” novel ideas into existing categories or schemas, which will result in the subsequent dismissal or discounting of their usefulness or even legitimacy.

In sum, BDR research on availability, representativeness, and categorization heuristics suggests that decision makers will tend to discount novel (e.g., unique) ideas, automatically and reflexively perceiving them to be less useful. Since the creativity and innovation literatures indicate that ideas which are both highly novel and highly useful are indeed rare (Litchfield, 2008; Rietzschel, Nijstad, & Stroebe, 2006), this novelty heuristic or decision rule is highly functional and adaptive in most decision situations. Nevertheless, it also suggests that decisions regarding novel ideas will be biased, since ideas which are higher in novelty will consistently be evaluated less favorably compared to less novel ideas. Moreover, since extant models suggest that creativity and innovation proceed through stages of idea generation, evaluation, selection, and implementation, these biased evaluations can also be expected to impact subsequent processes of selection and implementation. As a result, ideas or potential innovations which are higher in novelty will not only be evaluated less favorably, but will also be selected less frequently via the preceding and mediating process of idea evaluation.

The Status Quo Bias and the Systematic Devaluation of Novel (New) Ideas

The established finding from BDR research that people often exhibit an irrational preference for the status quo compared to other alternatives (Jost, Banaji, & Nosek, 2004;
Jost et al., 2008; Samuelson & Zeckhauser, 1988; Thaler & Sunstein, 2008) suggests that decision makers are likely to exhibit a status quo bias, such that they will automatically view new ideas or potential innovations as less useful and desirable than existing alternatives. This biased evaluation can be explained by decision makers’ reliance on several automatic and unconscious cognitive processes, each of which has been established in prior BDR research.

First, BDR research on the endowment effect (Thaler, 1980) has indicated that our assessments of the value (i.e. usefulness) of objects are often biased. Rather than simply reflecting actual objective characteristics or benefits, they are influenced by whether or not we already own the focal objects (Strahilevitz & Loewenstein, 1998). In particular, people have a tendency to overvalue what they own, such that a person places a higher value on a good when they own it than otherwise (Kahneman, Knetsch, & Thaler, 1990). For example, a home seller will think that their current house is worth more than they would be willing to pay for an equivalent home that they do not own (Bazerman & Moore, 2009). Similarly, if a person owns a ticket to a sporting event, they will demand a higher selling price than they would have originally been willing to pay for the ticket (Carmon & Ariely, 2000).

BDR scholars (Brenner, Rottenstreich, Sood, & Bilgin, 2007; Novemsky & Kahneman, 2005; van Dijk & van Knippenberg, 1998) have suggested that the endowment effect may be explained by loss aversion, which is the tendency for the loss of an existing good to outweigh the potential gain from a new good of objectively equal value (Kahneman & Tversky, 1979; Tversky & Kahneman, 1991). Regardless of the underlying mechanism, the endowment effect represents a clear deviation from rational models of decision making, since objectively rational decision makers should express consistent preferences in their
buying and selling prices for the same good, and should also be indifferent between losses and gains of equal magnitude.

Assuming ideas can be viewed as “goods” in the language of the BDR literature, the endowment effect has important implications for the evaluation and selection of new ideas. After all, a new idea often involves a change from an alternative already in possession, as when a new innovative medical technology might replace an existing medical procedure. As a result, the selection and implementation of the new idea typically implies a change to the status quo and the possible loss of an existing (endowed) alternative. According to BDR research on the endowment effect, objects that we already own or possess are valued more highly than equivalent items which we do not already own. As a result, new ideas may be evaluated less favorably (i.e. valued less) since existing (endowed) alternatives are valued more highly compared to alternatives not already in possession. Similarly, BDR research on loss aversion indicates that losses are weighted more heavily than gains in decision making. As a result, new ideas and innovations are especially unlikely to be selected since decision makers will not only value the existing (e.g. status quo) alternative more highly than new alternatives, but will also weight the loss of the existing (e.g. status quo) alternative more heavily than the potential gain from the new alternative.

Second, BDR research on system justification theory not only reinforces the predictions of the endowment effect literature, but also suggests that the preference for the status quo will exist even in the absence of endowment (Samuelson & Zeckhausen, 1988; Sen & Johnson, 1997), as when decision makers do not themselves possess or have direct experience with the existing (i.e. status quo) solution or alternative. According to theories of system justification, defined as a “process by which existing social arrangements are
legitimized” (Jost & Banaji, 1994: 2) people are highly motivated to rationalize and legitimate the existing social order or status quo. Given this need to justify the existing order and system of arrangements, individuals have strong motivations to perceive the status quo to be legitimate and to evaluate it more favorably, even at the expense of personal or group interests (Jost et al., 2008). For example, a person who clearly is disadvantaged within the existing social order, such as a low income person in a country with high income inequality or a low wage employee in an organization with significant pay differentials, may nevertheless express favorable views of high income inequality and other characteristics of the existing order. In contrast to rational decision models which would suggest that these individuals might be the strongest advocates for change to the status quo, system justification theory and research suggest that the most disadvantaged often have the strongest motivations to defend the existing order (Jost, Banaji, & Nosek, 2004),

Moreover, since new ideas by definition represent changes to the existing order or status quo, system justification processes have important implications for the evaluation and selection of new ideas. Since individuals are highly motivated to perceive the existing order to be legitimate and to evaluate it more favorably in order to justify the status quo, new ideas will be evaluated less favorably (i.e. valued less) compared to existing status quo alternatives, which will be valued more highly to justify and rationalize the existing system of arrangements. As a result, new ideas are also likely to be selected less frequently compared to existing status quo alternatives with otherwise equal characteristics and benefits. Moreover, these effects are likely to occur even among individuals who are clearly disadvantaged by the status quo and might seem to benefit the most from changes to existing arrangements.
Third, BDR research on the relationship between emotions and decision making further challenges the notion that new ideas will be evaluated and selected according to the predictions of rational decision models. For example, although rational decision models indicate that emotions should be irrelevant to economic decisions, BDR scholars have found that emotions such as sadness or disgust can significantly influence buying and selling decisions (Lerner, Small, & Loewenstein, 2004). Moreover, within this domain of research on how emotions influence decision making, an emerging literature known as the ATF or appraisal tendency framework (Han, Lerner, & Keltner, 2007; Lerner & Keltner, 2000, 2001; Lerner & Tiedens, 2006) provides insight into specific mechanisms which can be expected to reinforce the status quo bias.

According to this perspective, emotions have motivational properties which shape subsequent judgments and decisions through specific appraisal themes or tendencies (Lazarus, 1994; Smith & Ellsworth, 1985). As such, an ATF framework not only elaborates underlying mechanisms (e.g. appraisal tendencies) through which emotions influence decisions, but also provides further insight into how specific emotions may translate to biased judgments and decisions. For example, the emotion of fear is associated with the motivation to eliminate current threats or avoid future threats, and thus the appraisal tendency to form more pessimistic assessments of risk (Han, Lerner, & Keltner, 2007; Lerner, Gonzalez, Small, & Fischhoff, 2003). Similarly, the emotion of anxiety has been linked to the motivation to avoid threats and risks, and thus a heightened appraisal tendency regarding uncertainty. As a result, individuals experiencing fear or anxiety will tend to perceive situations and ideas as more risky and uncertain, and also to be motivated to avoid or reduce risk and uncertainty (Han, Lerner, & Keltner, 2007; Raghunathan & Pham, 1999).
Combined with system justification theory, ATF research provides further support for the status quo bias and the notion that existing alternatives will be favored relative to new ideas. For example, system justification theory suggests that the introduction of a new idea may trigger perceptions of threat to the legitimacy of the existing system. Since individuals who feel threatened experience emotions such as fear and anxiety, the appraisal tendencies associated with these emotions may also influence subsequent judgments and decisions about the ideas. More specifically, the appraisal tendencies associated with fear and anxiety may translate to less favorable evaluations by motivating decision makers to perceive new alternatives as more risky and more uncertain. As a result of these heightened perceptions of risk and uncertainty, decision makers will tend to form lower assessments of potential benefits and the likelihood of success for new ideas. As such, the ATF framework suggests that new ideas will induce appraisal tendencies which will often translate to pessimistic evaluations and reduced likelihood of selection, in contrast to existing status quo alternatives which are familiar and thus will not evoke the same negative emotions and appraisal tendencies.

Moreover, since ATF research indicates that new ideas will be perceived as more risky and less certain, they will be especially unlikely to be selected when decision makers prefer less risky and more certain alternatives. Interestingly, the same emotions which cause new ideas to be perceived as more risky and less certain also motivate decision makers to reduce risk and uncertainty, and thus to prefer less risky and more certain alternatives. As a result, ATF research strongly suggests that new innovations will be especially unlikely to be selected compared to a status quo alternative. Indeed, new ideas will tend to be perceived as the most risky and least certain precisely when decision makers will tend to have the
strongest preferences for less risky and more certain alternatives. Interestingly, since unfamiliar objects tend to be viewed as more threatening than familiar options (Bornstein, 1989; Zajonc, 2001), the status quo bias may be strongest for the most novel ideas. After all, since new ideas (e.g. potential innovations) are less familiar by definition, they will be most likely to trigger the perceptions of threat and the resulting emotions and appraisal tendencies which bias individuals to prefer the status quo relative to new alternatives.

In sum, BDR research on the endowment effect, system justification theory, and the appraisal tendency framework (ATF) suggests that decision makers will tend to discount new ideas, automatically and reflexively perceiving them to be less useful. This status quo heuristic or decision rule may be functional and adaptive in many decision situations. After all, since significant modifications expose organizations and social systems to “hazards of change” (Hannan & Freeman, 1984) which often threaten organizational survival (Amburgey, Kelley, & Barnett, 1993; Hannan & Freeman, 1977), some degree of conservatism and inertia is often beneficial. Nevertheless, BDR research suggests that decisions regarding new ideas will be biased, since new ideas will consistently be evaluated less favorably compared to existing alternatives of objectively equal usefulness. Moreover, since extant models suggest that creativity and innovation proceed through stages of innovation generation, evaluation, selection, and implementation (Anderson et al, 2004; Mumford, 2003), these biased evaluations can also be expected to impact subsequent processes of selection. As a result, new ideas will not only be evaluated less favorably than existing alternatives, but will also be selected less frequently via the preceding process of innovation evaluation. Finally, these effects may be strongest when ideas are most novel,
since novel new objects are less familiar and thus more likely to be perceived as threats compared to objects which are more familiar.

**H1A: The relationship between idea novelty (uniqueness and newness) and perceived idea usefulness will be negative, such that ideas which are higher in novelty will be perceived to be less useful compared to less novel ideas.**

**H1B: The relationship between idea novelty (uniqueness and newness) and idea overall evaluation will be negative, such that ideas which are higher in novelty will be evaluated less favorably compared to less novel ideas.**

**H1C: The relationship between idea novelty (uniqueness and newness) and idea selection will be negative, such that ideas which are higher in novelty will be selected less frequently compared to less novel ideas.**

**H1D: The relationship between idea novelty (uniqueness and newness) and idea recommendation will be negative, such that ideas which are higher in novelty will be recommended less frequently compared to less novel ideas.**

**Potential Moderators of the Novelty and Status Quo Biases**

Although BDR research might seem to provide a pessimistic view of the likelihood that creative ideas will be perceived to be useful and ultimately selected and implemented, it is also conceivable that additional knowledge from the BDR paradigm could be leveraged to mitigate the novelty and status quo biases which otherwise could inhibit the implementation of creative ideas. For example, BDR research on the focusing illusion (Schkade & Kahneman, 1998) indicates that people tend to devote their attention to only a limited set of available information. While focusing one’s attention is indeed necessary since individuals have cognitive limitations, this tendency does result in the underweighting of unattended
information. Building on this perspective, if novel and unique ideas are indeed valuable, focusing decision makers’ attention on idea novelty might result in more appropriate weighting of information and thus mitigate the negative relationship(s) between idea novelty and both perceived usefulness and idea selection. Conversely, focusing decision makers’ attention on idea usefulness might amplify the novelty bias by limiting attention to idea usefulness and thus result in overweighting of practical usefulness relative to the value of idea novelty or uniqueness. As such, one might intuitively expect that instructing decision makers to focus on idea novelty would help mitigate the tendency to undervalue highly novel and unique ideas.

However, these seemingly logical approaches might actually backfire if decision makers are subject to an unconscious bias against novelty. For example, if a decision maker who reflexively and unconsciously devalues novelty is directed to focus on the novelty of ideas, the focusing effect could actually amplify the bias by focusing attention on the very attributes which trigger the spontaneous devaluation of creative ideas. Similarly, if the default tendency for decision makers in an organizational context is to focus on usefulness rather than novelty, instructing a decision maker to explicit consider both novelty and usefulness attributes might amplify the bias by directing attention to a specific attribute which prompts reflexive and unfavorable evaluations of creative ideas. Conversely, if a decision maker who reflexively devalues novelty is instructed to focus on identifying highly useful and practical ideas, the focusing effect could actually mitigate the bias by directing decision makers’ attention to the potential usefulness of highly novel ideas. While counterintuitive, BDR research on the novelty bias and the focusing illusion suggests that focusing decision maker attention on “the opposite” (e.g. idea practical usefulness) of the
desired implementation outcome (e.g. idea novelty) may be a means to mitigate the bias against novelty.

**H2A:** The (negative) relationship between idea novelty and idea overall evaluation will be moderated by evaluation focus, such that the relationship will be stronger when ideas are evaluated according to novelty than when ideas are evaluated according to usefulness or both novelty and usefulness.

**H2B:** The (negative) relationship between idea novelty and idea selection will be moderated by evaluation focus, such that the relationship will be stronger when ideas are evaluated according to novelty than when ideas are evaluated according to usefulness or both novelty and usefulness.

**H2C:** The (negative) relationship between idea novelty and idea recommendation will be moderated by evaluation focus, such that the relationship will be stronger when ideas are evaluated according to novelty than when ideas are evaluated according to usefulness alone or both novelty and usefulness.

Since knowledge from BDR research offers potential insights which might be utilized to mitigate the novelty bias, it is also useful to examine whether BDR research might similarly be leveraged to mitigate the status quo bias. For example, BDR research on the effects of accountability indicates that making individuals accountable for their decisions can attenuate or mitigate cognitive biases by fostering effortful and self-critical thinking (Lerner & Tetlock, 1999). As such, it seems reasonable to anticipate that making an individual accountable (e.g. responsible) for idea evaluation and selection would improve innovation outcomes. After all, accountability has been shown to attenuate biases resulting from overconfidence (Tetlock & Kim, 1987), stereotyping (Pendry & Macrae, 1996), and
overweighting irrelevant cues such as communicator likeability (Chaiken, 1980). Consequently, it seems reasonable to expect that appointing a Director of Innovation to be responsible for creative idea evaluation and selection would promote innovation. After all, if accountability can attenuate other cognitive biases, it might also be expected to mitigate the status quo bias which otherwise can inhibit the effective evaluation and selection of new ideas.

However, BDR research indicates that accountability is not a universal solution to all organizational problems. Rather, it is a complex phenomenon which sometimes improves outcomes, sometimes has no effect, and sometimes promotes worse outcomes. Moreover, accountability has been shown to amplify or exacerbate several biases which seem particularly relevant to the evaluation of novel (new) ideas, including ambiguity aversion (Taylor, 1995), loss aversion (Tetlock & Boettger, 1994), and the attraction effect (Simonson, 1989). First, loss aversion, an increased responsiveness to the potential risk of loss, is highly relevant since the evaluation and selection of a novel or new idea typically implies a change to the status quo and therefore the loss of an existing alternative. Second, ambiguity aversion, the preference for alternatives with less ambiguity given equal risk (Bazerman & Moore, 2009), is also highly relevant to the status quo bias and the evaluation and selection of more novel or new ideas. After all, an existing status quo alternative is likely to be less ambiguous than a new idea by virtue of the increased exposure and familiarity provided by its longer existence (Eidelman, Crandall, & Pattershall, 2000). Finally, the attraction effect, a preference for the dominating alternative in a choice set (Simonson, 1989), is also highly relevant to the status quo bias and the evaluation and selection of more novel or new ideas. Given the long tradition of research demonstrating the
preference for the status quo, an existing status quo alternative is highly likely to be viewed as the dominant option in the choice set of potential ideas.

In sum, accountability has been shown to exacerbate several cognitive biases which are especially relevant to the evaluation of new and more novel ideas, including loss aversion, ambiguity aversion, and the attraction effect. Consequently, greater accountability is expected to amplify or exacerbate, rather than attenuate or mitigate, the status quo bias. Indeed, BDR research suggests that individuals who are NOT accountable (e.g. responsible) for promoting innovation outcomes may be more likely to implement creative ideas.

**H3A:** The (negative) relationship between idea novelty (newness) and perceived idea usefulness will be moderated by accountability (responsibility), such that the relationship will be stronger when accountability is higher.

**H3B:** The (negative) relationship between idea novelty (“newness”) and idea overall evaluation will be moderated by accountability (responsibility), such that the relationship will be stronger when accountability is higher.

**H3C:** The (negative) relationship between idea novelty (“newness”) and idea selection will be moderated by accountability (responsibility), such that the relationship will be stronger when accountability is higher.

**H3D:** The (negative) relationship between idea novelty (“newness”) and idea recommendation will be moderated by accountability (responsibility), such that the relationship will be stronger when accountability is higher.

**Overview of Empirical Research**

Two studies were conducted to test these hypotheses which question the fundamental assumption that an increase in creativity will promote favorable idea evaluation, selection,
and ultimately innovation. In Study 1, Hypotheses 1-3 were tested by conducting a
laboratory experiment with a sample of university faculty from a large research institution.
In Study 2, another laboratory experiment was conducted with a broader sample of faculty to
attempt to replicate unanticipated findings from Study 1, test new hypotheses, and obtain
preliminary support for the causal mechanisms underlying the new hypotheses. Prior to
Study 1 and 2, a separate ideation phase was completed to solicit and validate the pool of
ideas to be utilized in subsequent studies. The ideation phase included two parts: idea
generation and consensual assessment of ideas. First, an idea generation exercise was
conducted to solicit a pool of ideas (e.g. potential innovations) for use in subsequent studies.
Second, the consensual assessment method (Amabile, 1982) was applied to obtain informed
assessments of the ideas from domain experts. These assessments were used to provide
relevant control variables for Studies 1 and 2, as well as to confirm that the attributes of the
ideas in the focal dataset could be recognized with an appropriate level of consensus.
CHAPTER 5
STUDY 1

Idea Generation Exercise Sample and Procedure. The pool of ideas for Studies 1 and 2 was obtained from undergraduate business school students at a large university in the southeastern United States. Students were informed via email by the Director of the
Undergraduate Program that the school was soliciting ideas to improve the student learning experience, and that ideas they submitted to the program would be considered for implementation. To encourage participation, students were also informed that the participant whose idea was rated most promising by the program staff would receive their choice of a gift card (or cash) in the amount of $100. Eight students (62.5% male and 37.5% female) voluntarily signed up to participate. Participants averaged 20.5 years in age (min 18, max 23) and 1.2 years of work experience (min 0, max 3). Approximately 63% of the participants were Caucasian and 37% were Asian.

Each of the 8 participants completed an online survey which included contributing 6 ideas, which then provided a pool of 48 ideas to consider for use in subsequent studies. To promote creative idea generation, participants performed divergent thinking and active cognitive processing (Licuanan, Dailey, & Mumford, 2007) tasks prior to providing their ideas. Participants completed an item from the Remote Association Test (Melnick 1962) for the divergent thinking task, whereas participants wrote a paragraph about the problem domain (e.g. the student learning experience at KFBS) for the active cognitive processing task (Licuanan, Dailey, & Mumford, 2007). To increase the range in the novelty and/or usefulness of the ideas provided, participants were instructed to provide 2 highly practical, 2 highly original, and 2 highly original AND highly practical ideas.

**Consensual Assessment Exercise.**

**Sample.** Domain expertise for the purpose of this research involved not only experience with teaching and the student learning experience, but also familiarity with the relevant creativity and innovation constructs. As a result, the domain experts selected to perform the consensual assessment were 13 faculty members and doctoral students in the
same business school as the idea generation exercise participants. Each participant not only had teaching experience, but also had an understanding of creativity and innovation concepts based on their departmental affiliation (e.g. organizational behavior) or research program (e.g. strategy or entrepreneurship).

**Design and Procedures.** The 48 ideas obtained in the idea generation exercise were compiled and examined for potential duplicates or “double-barrelled” items. Although there were no duplicates, 3 “double-barrelled” ideas were identified and further decomposed to produce a dataset of 51 ideas. Consistent with the consensual assessment method (Amabile, 1982), domain expert participants all had some experience with the focal domain, made their assessments independently, rated the ideas relative to one another rather than according to absolute standards, and evaluated ideas in a random (e.g. counterbalanced) sequence.

Each domain expert was randomly assigned to provide ratings of all 51 ideas for 1 of the 2 creativity attributes of primary interest for this research (e.g. novelty or usefulness). This single-attribute approach not only promoted greater consistency in ratings, but also mitigated potential “contamination” of idea assessments which otherwise might have been expected to occur based on the hypothesized novelty and status quo biases. The domain experts also rated each idea according to several other dimensions, including the amount of effort required for implementation, an overall evaluation, likelihood of implementation, and likelihood of recommendation.

**Measures**

**Novelty.** The Novelty of each idea was assessed with a single item “How Novel (e.g. New, Original, Unique) is this idea?” (1 = not at all, 7 = extremely) adapted from prior creativity and innovation research (Dailey & Mumford, 2006; West & Anderson, 1996).
**Usefulness.** The Usefulness of each idea was assessed with a single item “How Useful (e.g. Valuable, Beneficial, Relevant, Practical) is this idea?” (1 = not at all, 7 = extremely) adapted from prior creativity research (Smith et al., 2007; West & Anderson, 1996).

**Amount of Effort.** The Amount of Effort involved in implementing each idea was assessed with a single item “What is your impression of the amount of effort involved in implementing this idea?” (1 = very low, 7 = very high) adapted from prior creativity research (Blair & Mumford, 2007).

**Overall Evaluation.** The Overall Evaluation of each idea was assessed with a single item “What is your overall evaluation of this idea?” (1 = not at all favorable, 7 = extremely favorable) adapted from prior creativity research (Smith et al., 2008).

**Likelihood of Implementation.** The Likelihood of Implementation for each idea was assessed with a single item “How likely would you be to implement this idea?” (1 = not at all, 7 = extremely) adapted from prior creativity research (Smith et al., 2008).

**Likelihood of Recommendation.** The Likelihood of Recommendation for each idea was assessed with a single item “How likely would you be to recommend this idea to others to implement?” (1 = not at all, 7 = extremely) adapted from prior creativity research (Smith et al., 2008).

**Results.** To confirm that the domain expert evaluations of the 51 ideas represented consensual assessments, the inter-rater reliability between domain experts was examined. Results demonstrated reasonably high between-person, within-idea agreement, ICC(1) = .259, ICC(2) = .820, and both ps < .01. Despite the variability between ideas and across persons, these results indicated adequate inter-rater agreement (LeBreton & Senter, 2008).
among raters for a given idea. Consequently, these results provided confidence that both the set of ideas and the domain expert ratings (e.g. control variables) were appropriate for subsequent use in Study 1 and Study 2.

However, to provide a more manageable number of ideas for use in subsequent Study 1 and Study 2, a smaller set of 10 ideas was constructed by applying several filtering criteria to the full set of 51 ideas. The filtering criteria were designed to provide a group of ideas which would best support empirical testing of hypotheses related to creativity and innovation, including relationships between idea novelty, usefulness, and subsequent evaluation and selection. For example, the filtering criteria were designed to ensure that the ideas included in subsequent studies did indeed meet the definition of creativity, namely ideas which are both novel and potentially useful (George, 2008; Hennessey & Amabile, 2010). Similarly, to examine relationships between idea novelty and downstream outcomes such as idea evaluation and selection (after controlling for idea usefulness), filtering criteria were designed to produce a set of ideas which was dispersed in terms of novelty, but which were also reasonably equivalent and comparable in terms of usefulness.

To meet the preceding objectives for idea dispersion and comparability, the set of 10 ideas included 8 items which met the definition of creativity, as well as 2 of the “worst ideas” which did not meet the definition of creativity but provided additional dispersion on the novelty dimension. First, 2 of the “worst ideas” were selected from the original set of 51 ideas based on the criterion of lowest combined novelty and usefulness rating. Second, to ensure that the ideas included in subsequent studies met the criteria for creative ideas, the full idea set was filtered to eliminate ideas which were not consensually perceived as moderately or highly useful (Blair & Mumford, 2007). Only those ideas with mean novelty ratings of at
least 3.5 (on a 7 point scale) and mean usefulness ratings of at least 3.5 (on a 7 point scale) were considered for potential inclusion in subsequent studies. Based on these criteria, 22 creative ideas were further evaluated for inclusion in subsequent studies according to a variation of an existing creativity benchmarking technique (Mumford et al., 2002). To ensure that the 8 creative ideas selected for subsequent studies provided sufficient dispersion, the 22 creative ideas were further categorized into groups with the highest mean novelty ratings, the lowest mean novelty ratings, and moderate novelty ratings (e.g. nearest the scale midpoint). Based on these groupings, a subset of 8 highly dispersed creative ideas was constructed by choosing 3 ideas from the high end of the range, 2 ideas from the middle of the range, and 3 ideas from the low end of the range. Combined, the 2 “worst ideas” and the 8 highly dispersed creative ideas formed the set of 10 ideas to be used in the subsequent Study 1 and Study 2.

Study 1 Method

Overview. Study 1 tested 3 specific hypotheses related to the anticipated Novelty bias. First, the study assessed a main effect of novelty (H1A –H1D), namely whether more novel ideas are perceived to be less useful, evaluated less favorably, and less likely to be selected and recommended. Second, this study explored the interaction between novelty and responsibility for implementation (H2A-H2D). More specifically, this research tested whether responsibility for implementation strengthens the negative relationships between the novelty of an idea and its perceived usefulness, overall evaluation, and likelihood of selection and recommendation. Finally, this study examined an interaction between novelty and evaluation condition (H3A-H3C). More specifically, this study investigated whether evaluation of ideas based solely on novelty strengthens the negative relationships between
the novelty of an idea and its overall evaluation, likelihood of selection, and likelihood of recommendation.

Sample. The participants in this study were full-time faculty at a large research university in the southeastern United States. Faculty were contacted via email by the researchers and invited to participate in the study. To encourage participation, faculty members were informed that those who completed the study would be entered into raffle in which 3 participants would be selected to receive $100 (cash or gift card). Of 2985 faculty, 205 (44.4% female, 55.6% male) voluntarily participated in the study, providing a response rate of 6.87%. Participants averaged 49.79 years in age (min 28, max 78, SD 10.94) and 22.87 years of teaching experience (min 1, max 50, SD 17.36). Approximately 85.9% of the participants were Caucasian, 5.9% were Asian, 2.2% were African-American, 2.2% were Hispanic, and 4.4% were Other or declined to report ethnicity.

Design and Procedures. Each participant was randomly assigned to 1 of 2 responsibility conditions and 1 of 3 idea evaluation conditions. In the responsibility condition, participants were informed that they would (or would not) be held personally responsible for the consequences of implementing the idea. In the evaluation condition(s), participants evaluated ideas based solely on novelty, solely on usefulness, or both novelty and usefulness prior to providing their evaluations of other idea attributes such as overall evaluation, likelihood of selection, and likelihood of recommendation.

The set of 10 ideas produced through the ideation phase served as the ideas or potential innovations to be evaluated by participants in this study. Consistent with the standards of creativity research (Amabile, 1982), participants not only all had some experience with the focal domain, but also made their assessments independently, rated the
ideas relative to one another rather than according to absolute standards, and evaluated ideas in a random (e.g. counterbalanced) sequence. Each participant completed an online survey in which they assessed all 10 ideas based on overall evaluation, likelihood of selection for implementation, and likelihood of recommendation, as well as the attribute(s) to which they were assigned in the evaluation condition. Following completion of the survey, participants were debriefed about the purpose of the study.

Measures.

**Novelty.** The Novelty of each idea was assessed with a single item “How novel is this idea?” (1 = not at all, 7 = extremely) adapted from prior creativity and innovation research (Daily & Mumford, 2006; West & Anderson, 1996).

**Usefulness.** The Usefulness of each idea was assessed with a single item “How useful (e.g. Valuable, Beneficial, Relevant, Practical) is this idea?” (1 = not at all, 7 = extremely) adapted from prior creativity research (Smith et al., 2007; West & Anderson, 1996).

**Overall Evaluation.** The Overall Evaluation of each idea was assessed with a single item “What is your overall evaluation of this idea?” (1 = not at all favorable, 7 = extremely favorable) adapted from prior creativity research (Smith et al., 2008).

**Likelihood of Implementation.** The Likelihood of Implementation for each idea was assessed with a single item “How likely would you be to implement this idea?” (1 = not at all, 7 = extremely) adapted from prior creativity research (Smith et al., 2008).

**Likelihood of Recommendation.** The Likelihood of Recommendation for each idea was assessed with a single item “How likely would you be to recommend this idea to others
to implement?” (1 = not at all, 7 = extremely) adapted from prior creativity research (Smith et al., 2008).

**Study 1 Results**

Means, standard deviations, and correlations for key study variables are displayed in Table 1. Study hypotheses were tested using hierarchical OLS regression analyses which controlled for participant work experience and the level of effort required to implement each idea. Consistent with Aiken & West (1991), independent variables were centered prior to computing the interaction terms to be included in the regression procedures. The results of these analyses are shown in Tables 2-5.

**Analysis of Results.** Hypotheses 1A-1D predicted that idea novelty would be negatively related to perceived usefulness, overall evaluation, likelihood of selection, and likelihood of recommendation. Although the relationship between novelty and perceived usefulness was significant ($t = 6.916; p < .01$), Hypothesis 1A was not supported since the relationship was positive rather than negative. Similarly, Hypothesis 1B was not supported since the novelty coefficient for overall evaluation was nonsignificant. However, the relationship between novelty and likelihood of selection was significant and negative ($t = -3.523; p < .05$), providing support for Hypothesis 1C. Similarly, the relationship between

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1 Since study data were nested within ideas and within participants, hierarchical linear modeling (HLM) analyses were performed to confirm that the pattern of results did not change when idea and participant identifiers were included as random factors in regression analyses.
novelty and likelihood of recommendation was significant and negative (t = -2.618; p < .05), providing support for Hypothesis 1D.

Hypotheses 2A-2D predicted an interaction between idea novelty and responsibility for implementation such that responsibility for implementation would strengthen the negative relationships between idea novelty and perceived usefulness, overall evaluation, likelihood of selection, and likelihood of recommendation. None of these hypotheses were supported, as the relationships between the interaction term and perceived usefulness, overall evaluation, likelihood of selection, and likelihood of recommendation were not statistically significant. Interestingly, a significant negative main effect (t = -1.963; p < .05) of responsibility in predicting perceived usefulness was somewhat consistent with the general premise that greater accountability may inhibit idea evaluation and ultimately innovation. More specifically, this relationship could suggest that the critical thinking fostered by accountability (Lerner & Tetlock, 1999) may actually promote the devaluation of ALL ideas rather than simply the most novel ones.

Finally, Hypotheses 3A-3C predicted an interaction between novelty and evaluation condition such that evaluation of ideas based solely on novelty would strengthen the negative relationships between the novelty of an idea and its overall evaluation, likelihood of selection, and likelihood of recommendation. None of these hypotheses were supported, as the relationships between the interaction term and overall evaluation, likelihood of selection, and likelihood of recommendation were not statistically significant. Moreover, the main effect of evaluation condition was also nonsignificant.

**Supplemental Analyses.** Although the original hypotheses suggested that novelty would negatively influence idea evaluation, selection, and recommendation through a
negative effect on perceived usefulness, the observed positive relationship between novelty and perceived usefulness was inconsistent with hypothesized underlying theoretical mechanisms. On the surface, these results could suggest that perceived usefulness may have limited influence on idea evaluation and selection processes. However, extant creativity and innovation research provides strong theoretical and empirical support for the notion that perceived idea usefulness exerts a significant positive influence on subsequent idea evaluation and selection (Licuanan, Dailey, & Mumford, 2007; West & Anderson, 1996). A potential synthesis of study results and existing literature could be that novelty does indeed influence idea evaluation and selection through the negative mechanisms hypothesized and generally observed in this study. However, novelty may also influence outcomes via a separate and countervailing positive mechanism, which could possibly be linked to the positive relationship between novelty and perceived usefulness simultaneously observed in this study.

Since suppression models may be plausible for many mechanisms in which force and counterforce often coexist and have counteracting effects (Cohen & Cohen, 1983, Hofmann, 1993), additional analyses were performed to explore possible suppressor relationships between novelty and usefulness in predicting subsequent idea evaluation, selection, and recommendation. More specifically, a “net suppressor” (Cohen & Cohen, 1983) relationship, in which the presence of one variable can obscure the effects of another, was investigated. The net suppressor relationship was deemed most appropriate given the nature of the discrepancies between existing literature and study results. For example, the established literature indicates that novelty individually will positively influence idea evaluation and selection, whereas study results which examined the effects of both novelty and usefulness
suggested that novelty will negatively influence idea evaluation and selection. As such, additional analyses were performed to investigate whether novelty exerts varying effects on downstream variables depending on whether or not usefulness is included in the regression model.

Net suppressor relationships between two variables are characterized by three specific criteria (Cohen & Cohen, 1983). First, when entered into a regression model as a standalone variable, the first variable is positively related to the relevant dependent variables. Second, the second variable (e.g. the possible suppressor) is also positively related to the relevant dependent variables when entered into a regression model as a standalone variable. Third, when both variables are entered into a regression model as predictors, each variable remains significant, but the coefficient on the first variable becomes negative. Consistent with the preceding definition of net suppression, this third condition demonstrates that the negative relationship between the first variable and the relevant dependent variables is obscured (e.g. suppressed) unless the effects of both variables are examined simultaneously.

As such, three conditions needed to be met to provide support for a net suppressor relationship between novelty and usefulness. First, when entered into a regression model as a standalone variable, perceived novelty must be positively related to likelihood of selection and recommendation. Second, when entered as a standalone variable, perceived usefulness must also be positively related to likelihood of overall evaluation, selection and recommendation. Third, when BOTH novelty and usefulness were entered into a model as predictors, both must remain significant, but the coefficient on novelty must become negative. The first condition was met for overall evaluation ($t = 9.431$, $p < .01$), likelihood of selection ($t = 7.104$, $p < .01$), and likelihood of recommendation ($t = 7.83$, $p < .01$).
Similarly, the second condition was met for overall evaluation ($t = 102.17, p < .01$), likelihood of selection ($t = 54.44, p < .01$), and likelihood of recommendation ($t = 64.34, p < .01$). Surprisingly, the third condition was not met for overall evaluation, as the coefficient on novelty was negative as predicted but nonsignificant. However, all three conditions were met for likelihood of selection [novelty ($t = -3.46, p < .01$), usefulness ($t = 32.54, p < .01$)], and likelihood of recommendation [novelty ($t = -2.58, p < .01$), usefulness ($t = 31.60, p < .01$)].

**Study 1 Discussion**

Given the reasonably consistent support for the suppression model, novelty appears to exert countervailing forces on idea selection and recommendation. More specifically, novelty is negatively related to idea selection and recommendation after controlling for usefulness. However, unless the effects of both novelty and usefulness are considered simultaneously, the negative relationship is obscured or suppressed by the positive relationship between novelty and usefulness which was simultaneously observed in this study. As such, these results suggest that the novelty of an idea will exert a negative influence on its evaluation and selection, consistent with the hypothesized novelty and status quo biases and seemingly counter to the established literature. However, such findings are not necessarily incompatible or irreconcilable with existing creativity and innovation research. Rather, they may simply suggest that the reason the biases toward novelty have not been observed in extant research is that the respective effects of novelty and usefulness in predicting idea evaluation and selection have not been examined simultaneously.

The lack of support for Hypothesis 2, the anticipated effects of responsibility for implementation in predicting outcomes, was somewhat surprising. However, there are
several possible alternative explanations for the results which can be reconciled with the hypothesized model, and thus render the results inconclusive. A few potential explanations could be that participants were unmotivated or that the responsibility manipulation was ineffective. However, several study results did seem to suggest that participants were fairly engaged and took responsibility and ownership for their evaluations and recommendations. For example, the significant (negative) main effect for the level of effort to implement control variable in predicting subsequent idea evaluation, selection, and recommendation suggested that participants were carefully evaluating ideas and considering the consequences of idea implementation. Consequently, a more compelling explanation may be that the nature of the research setting and/or the study instructions led participants to feel a need to justify their choices even when they were in the “not responsible” condition. For example, these participants were informed that they were providing evaluations for ideas which would be considered by other faculty and administrators at their own institution. Such an interpretation would be consistent with the failure to observe differences between the two responsibility conditions, as well as the negative relationships between novelty and downstream outcomes predicted by the theoretical model and observed in this study.

Similarly, the nonsignificance of the predicted relationships between evaluation condition and outcomes was unexpected but possibly still reconcilable with the hypothesized model. Since the evaluation condition “manipulation” simply involved the differential presentation of survey items and thus did not require the comprehension of specific content, it is unlikely that the (in)effectiveness of the manipulation could explain the null findings. However, it is conceivable that the nature of the research task led participants in all evaluation conditions to focus on novelty, since participants were informed that the
researchers were interested in how people evaluate ideas. This interpretation would be consistent with the failure to observe differences among the evaluation conditions in this study, while simultaneously observing the negative relationships between novelty and downstream outcomes predicted by the theoretical model.

The lack of support for Hypothesis 1B, which predicted that novelty would be negatively related to overall idea evaluation, may also seem somewhat surprising. After all, the study results provided support for the predicted negative relationships between novelty and other outcomes, such as likelihood of selection and likelihood of recommendation. However, BDR researchers (Lerner & Tetlock, 1999) have noted that it is unclear whether and when accountability impacts cognition (e.g. what people actually think), what they will say that they think, and/or behavior (e.g. what they actually do). As a result, the finding that novelty could impact idea evaluations differently than idea selections and recommendations is not entirely inconsistent with the proposed theoretical model since it seems reasonable to believe that idea evaluations may be more cognitive whereas idea selection and recommendation may be more behavioral. While speculative, these results may simply suggest that the reason novelty exerts a greater influence on idea selection and recommendation than idea evaluation is that accountability impacts behavior (what people do or intend to do) more strongly than cognition (what they actually think).

Overall, the results of this study provided preliminary support for a net suppression relationship between novelty and usefulness. However, the study was also subject to several limitations. For example, the methodological factors related to the responsibility and evaluation conditions appeared to contribute to inconclusive findings, providing limited guidance for how to mitigate barriers to the implementation of novel ideas. Perhaps most
significantly, Study 1 was not designed to specifically test a suppression model, and thus was limited in its ability to explain the observed suppression relationships. First, the observed suppression relationship may have simply been an artifact of this particular sample, and should be validated and replicated with a broader sample of participants. Second, this study did not advance or test any hypotheses regarding the positive forces or mechanisms through which novelty might influence subsequent outcomes, which clearly warrant further theoretical and empirical examination. Third, the study results did appear to be consistent with the hypothesized explanation for a negative force which influences outcomes through the effects of idea uniqueness and an associated novelty bias, as well as the effects of idea newness and an associated status quo bias. However, the current study did not specifically test or establish whether different novelty dimensions, such as idea uniqueness and newness, actually exert independent and negative effects through the hypothesized novelty bias or status quo mechanisms.

In sum, given the observed suppression relationship, there was a need for greater theoretical understanding and empirical examination of the positive forces through which novelty might influence outcomes, as well as whether and how individual novelty components may differentially influence negative or positive outcomes. In particular, it was appropriate to consider whether one of these novelty component dimensions could trigger or influence the positive forces which influence perceived usefulness and subsequent idea evaluation, selection, and recommendation. Consequently, Study 2 was designed and executed not only to address the methodological limitations of Study 1, but also to advance theoretical understanding by empirically exploring these new questions. However, further
“theorizing” (Weick, 1995) and refinement of the model were required to provide appropriate guidance for Study 2.
CHAPTER 6
REFINEMENT OF THEORETICAL MODEL

Based on the unanticipated results from Study 1, including the observed suppression relationship between novelty and usefulness, a logical next step for Study 2 would be to replicate and extend these findings. However, suppression models only warrant attention if they are theoretically and substantively meaningful (Cohen & Cohen, 1983). As a result, it was important that the extension of the suppression model to further refine and elaborate the previously hypothesized negative forces remained grounded in the same relevant constructs of interest (usefulness and novelty) and underlying BDR theoretical framework. Similarly, it was important to engage in preliminary theorizing about the positive forces and mechanisms in the suppression model prior to pursuing exploratory testing in Study 2. However, it was important that such efforts focus on potential forces which could be clearly linked to the relevant constructs of interest and integrated with the BDR framework which provided the underlying theoretical foundation for this program of research.

Refriments to Existing Theoretical Framework and Negative Forces

Based on the preliminary support provided by Study 1 for the net suppressor relationship between perceived idea novelty and perceived idea usefulness, no new predictions were advanced regarding the functional form and general nature of these relationships. Rather, the net suppressor relationships to be tested in Study 2 simply represented a replication of the relationships observed in Study 1, which were also generally
consistent with the previously hypothesized (negative) relationships between idea novelty and subsequent idea evaluation and selection. More specifically, idea novelty was expected to be negatively related to overall evaluation, likelihood of selection, and likelihood of recommendation after controlling for perceived usefulness.

**H1A:** The relationship between idea novelty and overall evaluation will be negative, such that ideas which are more novel will be evaluated less favorably after controlling for perceived usefulness.

**H1B:** The relationship between idea novelty and likelihood of selection will be negative, such that ideas which are more novel will be less likely to be selected after controlling for perceived usefulness.

**H1C:** The relationship between idea novelty and likelihood of recommendation will be negative, such that ideas which are more novel will be less likely to be recommended after controlling for perceived usefulness.

**Re-Examination of the Newness and Uniqueness Novelty Dimensions**

Study 1 results were generally consistent, after appropriately controlling for usefulness, with the hypothesized negative relationships between idea novelty and subsequent outcomes. However, it was appropriate to further refine and elaborate the underlying mechanisms for the negative and positive forces in the suppression model, including the respective roles of various underlying novelty dimensions. Since novelty has often been conceptualized in terms of both the degree of uniqueness relative to other ideas currently available (Amabile, 1996), as well as the degree of newness the relevant unit of adoption (Anderson & King, 1983), the uniqueness and newness dimensions of novelty were deemed especially relevant for subsequent exploration and testing in Study 2. Consequently,
the theoretical framework developed for Study 1, which predicted that both idea uniqueness and newness components would exert negative influences on subsequent outcomes, was re-examined to determine whether these two dimensions might play different roles in explaining relevant outcomes.

The predicted negative relationship between idea newness and outcomes, which can be explained by a biased preference for the status quo and the resulting effects on the perceived legitimacy of new ideas, appeared to be robust based on the absence of any obvious deficiencies. In contrast, the predicted negative relationships between idea uniqueness and subsequent outcomes were potentially more problematic. In particular, the theoretical arguments related to the effects of availability and categorization heuristics appeared to confound elements of both idea uniqueness and newness. Given a weaker theoretical argument for the effect of idea uniqueness in explaining the negative relationship between idea novelty and subsequent outcomes, it seemed appropriate to explore a more parsimonious model which specifically examined the individual role of idea newness in explaining the negative relationship between idea novelty and subsequent outcomes. Consistent with this approach, the Study 1 hypotheses related to the negative relationship between idea novelty and subsequent outcomes were decomposed to more clearly elaborate the predicted role of the newness component.

\textit{H2A: The relationship between idea newness and perceived legitimacy will be negative, such that ideas which are more new will be perceived to be less legitimate relative to ideas which are less new.}
**H2B**: The relationship between idea newness and overall evaluation will be negative, such that ideas which are more new will be evaluated less favorably relative to ideas which are less new.

**H2C**: The relationship between idea newness and likelihood of selection will be negative, such that ideas which are more new will be selected less frequently relative to ideas which are less new.

**H2D**: The relationship between idea newness and likelihood of recommendation will be negative, such that ideas which are more new will be recommended less frequently relative to ideas which are less new.

Moreover, given the possibility that the predicted negative effects of uniqueness may have been significantly driven by idea newness, it was reasonable to investigate whether idea uniqueness might play a role in the positive forces through which novelty influences outcomes.

**New “Theorizing” regarding Positive Forces**

Given the need to theorize regarding the potential positive forces in the suppression model, yet remain grounded in the core constructs and theoretical framework of interest, the creativity, innovation, and BDR literatures were examined for an appropriately integrative perspective. As described below, goal setting theory provided an unanticipated yet promising perspective for integrating the constructs of usefulness and novelty within an underlying BDR theoretical framework.

First, creativity and innovation scholars have conceptualized usefulness as having the potential to provide benefit or value (Amabile, 1996; George, 2008; West & Farr, 1990). Although the terms benefits and value are often used synonymously, organizational scholars
have suggested that what is viewed as beneficial is ultimately determined by one’s values (Locke, 1990). Moreover, values do not only determine what is believed to be beneficial or useful. Rather, values also influence the cognitive and motivational processes through which such benefits and desired outcomes are ultimately realized, including goal setting mechanisms such as goal choice and goal pursuit (Locke & Latham, 2002).

Second, since usefulness can be conceptually linked to extant theories of goal setting, it was appropriate to examine the BDR literature for relevant insights or integration points which could explain how perceived usefulness might be influenced through goal setting mechanisms. Interestingly, although goal setting has traditionally been conceptualized as a deliberate and conscious process (Locke & Latham, 2002), an emerging stream of research within the BDR literature has begun to explore how unconscious goal mechanisms influence outcomes. For example, recent research has demonstrated that outcomes are substantially influenced by unconscious goal pursuits and unconscious goal shielding (Shah, 2005). As such, this perspective provided a useful lens for exploring whether and how perceived usefulness might be influenced through the automatic, unconscious cognitive heuristic mechanisms of primary theoretical interest for the current program of research.

Third, by building on this perspective, it was possible to examine whether the positive forces through which novelty appears to influence perceived usefulness could be explained through unconscious goal mechanisms. Similarly, it was also viable to consider whether these effects might be linked to a particular novelty component or dimension. According to unconscious goal perspectives, active or focal goals are unconsciously protected or “shielded” from alternative activities or distractions, particularly when alternatives are perceived to be substitutes for a focal process goal (Shah, 2005). Building on this view, if
the novelty of an idea influences the degree to which it is perceived to be a substitute for a focal process goal, which in turn may influence its perceived usefulness, unconscious goal shielding mechanisms could be a plausible explanation for the positive relationship between perceived novelty and perceived usefulness.

Moreover, the uniqueness dimension of novelty may be a critical driver for the positive forces through which novelty influences perceived usefulness and subsequent outcomes. After all, ideas which are more unique, and thus less similar to existing ideas, may be less likely to be intuitively perceived as substitutes for focal goals. As a result, more unique ideas are less likely to be automatically and unconsciously “shielded” from attention, and thus have greater potential simply to be noticed and ultimately perceived to be useful. On the other hand, less unique ideas, which are more similar to existing ideas, may be more likely to be intuitively perceived as substitutes for focal process goals. Consequently, less unique ideas are more likely to be automatically shielded from attention, and thus have relatively less potential to be noticed and ultimately perceived to be useful. In sum, more unique ideas will intuitively be perceived to be relatively dissimilar and thus less substitutable for existing focal goals. As a result, they are less likely to be unconsciously shielded from attention and thus are more likely to be perceived as useful means for achieving desired outcome goals. Building on this view, the uniqueness of an idea is expected to be positively associated with its perceived usefulness and subsequent outcomes.

**H3A: The relationship between idea uniqueness and perceived usefulness will be positive, such that ideas which are more unique will be perceived to be more useful relative to less unique ideas.**
H3B: The relationship between idea uniqueness and overall evaluation will be positive, such that ideas which are more unique will be evaluated more favorably relative to less unique ideas.

H3C: The relationship between idea uniqueness and likelihood of selection will be positive, such that ideas which are more unique will be more likely to be selected relative to less unique ideas.

H3D: The relationship between idea uniqueness and likelihood of recommendation will be positive, such that ideas which are more unique will be more likely to be recommended relative to less unique ideas.

In addition to providing a plausible theoretical explanation for the positive relationship between idea novelty (e.g. uniqueness) and subsequent outcomes, unconscious goal mechanisms also imply that idea uniqueness may interact with focal goal content to influence outcomes. For example, the relationship between idea uniqueness and outcomes may vary depending on whether focal goals contain elements of novelty or practical usefulness. After all, if goal shielding is driven by the degree to which an idea or alternative functions as a substitute for a focal goal, the degree to which idea uniqueness will trigger goal shielding may depend on the content of a focal goal, including whether it includes elements of novelty or practicality. For example, it might seem logical to expect that novelty goals would promote the favorable evaluation and selection of more novel and unique ideas, and thus strengthen the hypothesized positive forces between idea uniqueness and subsequent outcomes. Interestingly, however, BDR research suggests the opposite relationship. Indeed, by increasing the perceived similarity between unique ideas and focal goals, novelty goal content might actually increase goal shielding and inhibit the favorable evaluation and
selection of more unique ideas. Consequently, BDR research suggests that novelty goal content may actually weaken the hypothesized positive relationship between idea uniqueness and subsequent outcomes.

H4A: The relationship between idea uniqueness and perceived usefulness will be moderated by focal goal content, such that novelty goals will weaken the (positive) relationship between idea uniqueness and perceived usefulness.

H4B: The relationship between idea uniqueness and overall evaluation will be moderated by focal goal content, such that novelty goals will weaken the (positive) relationship between idea uniqueness and overall evaluation.

H4C: The relationship between idea uniqueness and likelihood of selection will be moderated by focal goal content, such that novelty goals will weaken the (positive) relationship between idea uniqueness and likelihood of selection.

H4D: The relationship between idea uniqueness and likelihood of recommendation will be moderated by focal goal content, such that novelty goals will weaken the (positive) relationship between idea uniqueness and likelihood of recommendation.
CHAPTER 7
STUDY 2

Overview

Study 2 provided a test to replicate the unanticipated suppression findings from Study 1 with a broader sample of participants, as well as a means to test several hypotheses to extend the findings from Study 1. First, the study tested the replication of the net suppressor relationship between perceived novelty and perceived usefulness in predicting overall evaluation, likelihood of selection, and likelihood of recommendation (H1A-H1C), in which novelty is hypothesized to be negatively related to outcomes after controlling for perceived usefulness. Second, this study examined the hypothesized negative relationship(s) between the newness component of novelty and perceived idea legitimacy, overall evaluation, likelihood of selection, and likelihood of recommendation (H2A-H2D). Third, this study tested the hypothesized positive relationship between the uniqueness component of novelty and perceived usefulness, overall evaluation, likelihood of selection, and likelihood of recommendation (H3A-H3D). Finally, this study explored the interaction between the uniqueness component of novelty and goal condition (H4A-H4D) by testing whether a novel goal weakens the positive relationship between idea uniqueness and its perceived usefulness, overall evaluation, likelihood of selection, and likelihood of recommendation.
Study 2 Methods

Sample. The participants in this study were full-time faculty members at colleges and universities in the United States. This broader sample of faculty was contacted via email by a panel survey research firm (Qualtrics) and invited to participate in the study in exchange for reward points. From this sample, 119 faculty (53.3% female, 43.7% male) voluntarily participated in the study. Participants averaged 43.35 years in age (min 27, max 80, SD 12.01) and 15.08 years of teaching experience (min < 1 year, max 46, SD 15.08).

Approximately 68.9% of the participants were Caucasian, 17.6% were Asian, 5.9% were Hispanic, 4.2% were African-American, and 3.4% were Other or declined to report ethnicity.

Design and Procedures. Each participant was provided with a single responsibility condition from Study 1, a single evaluation condition from Study 1, and randomly assigned to 1 of 3 goal conditions. The responsibility condition (responsible for implementation) and evaluation condition (both novelty and usefulness) were chosen based on their perceived practical and theoretical relevance. For example, responsibility for implementation seemed most theoretically and practically relevant since individuals in many organizational settings are increasingly being held accountable for their decisions and/or responsible for outcomes (Lerner & Tetlock, 1999). Similarly, the theoretical and practical significance of both idea novelty and usefulness has long been established in extant creativity and innovation research (Amabile, 1982), and innovators in organizations consider both novelty and practical value (West & Farr, 1990). The goal condition was manipulated via a description of the school’s current approach for promoting student learning. In the no goal condition, participants were not provided with any information about the school’s current approach. In the novel goal and practical goal conditions, participants were informed that the school currently employed a
very novel (novel goal condition) or very practical (practical goal condition) approach for promoting student learning.

To promote a constructive replication of the Study 1 findings, the remaining Study 2 procedures were designed to mirror those of Study 1 wherever possible. Consistent with this approach, the same set of 10 ideas from Study 1 served as the ideas or potential innovations to be evaluated by participants in this study. Similarly, participants once again not only all had some experience with the focal domain, but also made their assessments independently, rated the ideas relative to one another rather than according to absolute standards, and evaluated ideas in a random (e.g. counterbalanced) sequence. Each participant once again completed an online survey in which they assessed all 10 ideas based on novelty, usefulness, overall evaluation, likelihood of selection for implementation, and likelihood of recommendation. To permit exploration of the new hypotheses and/or underlying theoretical mechanisms of interest for Study 2, each participant also provided online survey ratings of several additional idea attributes such as uniqueness, newness, and legitimacy. Following completion of the survey, participants were debriefed about the purpose of the study.

Measures.

**Novelty.** The Novelty of each idea was assessed with a single item “How novel is this idea?” (1 = not at all, 7 = extremely) adapted from prior creativity and innovation research (Daily & Mumford, 2006; West & Anderson, 1996).

**Uniqueness.** The Uniqueness of each idea was assessed with a single item “How unique is this idea?” (1 = not at all, 7 = extremely) adapted from prior creativity research (Smith et al., 2007).
**Newness.** The Newness of each idea was assessed with a single item “How new is this idea?” (1 = not at all, 7 = extremely) adapted from prior innovation research (West & Anderson, 1996).

**Usefulness.** The Usefulness of each idea was assessed with a single item “How useful (e.g. Valuable, Beneficial, Relevant, Practical) is this idea?” (1 = not at all, 7 = extremely) adapted from prior creativity research (Smith et al., 2007; West & Anderson, 1996).

**Legitimacy.** The Legitimacy of each idea was assessed with a single item “How legitimate is this idea?” (1 = not at all, 7 = extremely) adapted from prior BDR research on the status quo bias (Jost et al., 2004).

**Overall Evaluation.** The Overall Evaluation of each idea was assessed with a single item “What is your overall evaluation of this idea?” (1 = not at all favorable, 7 = extremely favorable) adapted from prior creativity research (Smith et al., 2008).

**Likelihood of Implementation.** The Likelihood of Implementation for each idea was assessed with a single item “How likely would you be to implement this idea?” (1 = not at all, 7 = extremely) adapted from prior creativity research (Smith et al., 2008).

**Likelihood of Recommendation.** The Likelihood of Recommendation for each idea was assessed with a single item “How likely would you be to recommend this idea to others to implement?” (1 = not at all, 7 = extremely) adapted from prior creativity research (Smith et al., 2008).

**Manipulation Checks.** The effectiveness of the responsibility and goal condition manipulations were validated via single item(s) as the end of the survey.
Study 2 Results

Means, standard deviations, and correlations for key study variables are displayed in Table 6. Study hypotheses were tested using hierarchical OLS regression analyses which controlled for participant work experience and the level of effort required to implement each idea. Consistent with Aiken & West (1991), independent variables were centered prior to computing interaction terms to be included in the regression procedures. The results of these analyses are shown in Tables 7-15².

Initial Analysis and Results. Hypotheses 1A-1C predicted that novelty and perceived usefulness would exhibit a net suppressor relationship in predicting the overall evaluation, likelihood of selection, and likelihood of recommendation for ideas. As in Study 1, three criteria or conditions needed to be met to provide support for a net suppressor relationship between novelty and usefulness. First, when entered into a regression model as a standalone variable, perceived novelty would be positively related to overall evaluation, likelihood of selection, and likelihood of recommendation. Second, when entered as a standalone variable, perceived usefulness would also be positively related to overall evaluation, likelihood of selection, and likelihood of recommendation. Third, when BOTH novelty and usefulness were entered into a model as predictors, both would remain significant, but the coefficient on novelty would become negative.

² Since study data were nested within ideas and within participants, hierarchical linear modeling (HLM) analyses were performed to confirm that the pattern of results did not change when idea and participant identifiers were included as random factors in regression analyses.
The first condition was met for overall evaluation (t = 9.011, p < .01), likelihood of selection (t = 7.738, p < .01), and likelihood of recommendation (t = 9.337, p < .01). Similarly, the second condition was met for overall evaluation (t = 24.658, p < .01), likelihood of selection (t = 33.857, p < .01), and likelihood of recommendation (t = 25.744, p < .01). However, the third condition was not met for any of the dependent variables of interest. The results of these analyses are shown in Tables 7-10. As expected, the perceived usefulness coefficients remained positive and significant for overall evaluation (t = 22.478, p < .01), likelihood of selection (t = 32.081, p < .01), and likelihood of recommendation (t = 23.462, p < .01). However, the novelty coefficients were positive rather than negative for overall evaluation (t = 3.252, p < .01), likelihood of selection (t = .113, NS), and likelihood of recommendation (t = 3.466, p < .01). Moreover, the likelihood of selection coefficient was not statistically significant. As a result, Hypotheses 1A-1C were not supported.

Hypotheses 2A-2D predicted that idea newness would be negatively related to perceived legitimacy, overall evaluation, likelihood of selection, and likelihood of recommendation. The results of these analyses are shown in Tables 11-15. None of these predictions were supported, as the newness coefficients for perceived legitimacy (t = -.335, NS), overall evaluation (t = .462, NS), and likelihood of selection (t = 1.143, NS) were not statistically significant. Although the newness coefficient for likelihood of recommendation was statistically significant (t = 2.016, p < .05), it was positive rather than negative. Interestingly, the newness coefficients for perceived legitimacy (t = 9.45, p < .01), overall evaluation (8.64, p < .01), likelihood of selection (t = 8.27, p < .01), and likelihood of recommendation (t = 9.77, p < .01) were statistically significant when newness was entered
individually, but were positive rather than negative. Consequently, these results did not support Hypotheses 2A-2D.

Hypotheses 3A-3D predicted that idea uniqueness would be positively related to perceived usefulness, overall evaluation, likelihood of selection, and likelihood of recommendation. The results of these analyses are shown in Tables 11-15. All of these predictions were supported, as the uniqueness coefficients for perceived usefulness (t = 2.929, p < .01), overall evaluation (t = 3.312, p < .01), likelihood of selection (t = 2.772, p < .01), and likelihood of recommendation (t = 2.323, p < .05) were positive and statistically significant. Similarly, the uniqueness coefficients for perceived usefulness (t = 12.77, p < .01), overall evaluation (t = 9.01, p < .01), likelihood of selection (t = 8.94, p < .01), and likelihood of recommendation (t = 9.82, p < .01) were positive and statistically significant when uniqueness was entered individually. As a result, these results provide support for Hypotheses 3A-3D.

Finally, Hypotheses 4A-4D predicted an interaction between idea uniqueness and goal condition, such that a novel goal would weaken the positive relationship between idea uniqueness and perceived usefulness, overall evaluation, likelihood of selection, and likelihood of recommendation. The results of these analyses are shown in Tables 11-15. None of these predictions were supported, as the relationships between both interaction terms (e.g. novel goal and practical goal) and perceived usefulness, overall evaluation, likelihood of selection, and likelihood of recommendation were not statistically significant. Consequently, these results did not support Hypothesis 4A-4D.

In sum, these initial results provided limited support for the hypothesized model. First, the lack of support for Hypothesis 1 was inconsistent with the anticipated net
suppression relationship between novelty and usefulness in predicting outcomes. In particular, since novelty was positively related to overall evaluation and likelihood of recommendation after controlling for usefulness, results were inconsistent with the Study 1 theoretical model related to the novelty and status quo biases. Second, the results from Hypothesis 2 testing were inconsistent with the theoretical argument that a biased preference for the status quo will inhibit the evaluation and selection of new ideas. Third, however, the support for Hypothesis 3 was consistent with the theoretical argument that unconscious goal mechanisms will facilitate the evaluation and selection of unique ideas. Finally, the results from Hypothesis 4 testing were somewhat mixed. The lack of support for Hypothesis 4 was inconsistent with the hypothesized interactive relationships between idea uniqueness and goal content in predicting outcomes. However, the significant main effects of goal condition in predicting perceived usefulness were consistent with the theoretical argument that unconscious goal mechanisms may promote or inhibit the evaluation and selection of novel (e.g. unique) ideas. For example, a significant positive main effect ($t = 2.53, p < .05$) of the novelty goal condition in predicting perceived usefulness suggests that novelty goals may actually trigger a greater focus on usefulness (e.g. identifying the usefulness of ideas) rather than novelty. Similarly, a significant negative main effect ($t = -3.013, p < .01$) of the practical goal condition in predicting perceived usefulness suggests that practical goals may actually promote a focus on novelty (e.g. identifying the novelty of ideas) rather than usefulness.

**Supplemental Analyses.** Given the limited support for hypotheses which were based on sound theoretical arguments, as well as the discrepant findings between Study 2 and Study 1, additional analyses were performed to explore alternative explanations for the observed
results. One potential explanation was that participants were unmotivated and/or the study manipulations were ineffective. Examination of manipulation checks for the responsibility for implementation condition indicated that only 77 of the 119 participants (64.7%) correctly perceived the responsibility condition. Moreover, a review of the manipulation check for the goal condition revealed that only 37 of the 119 participants (31.1%) correctly perceived the goal condition. Combined, only 25 of the 119 participants (21%) accurately perceived both their assigned responsibility condition and goal condition. Given the significant number of participants whose responses may have been distorted by low motivation and/or comprehension, supplemental analyses were performed to determine whether and how these issues impacted the observed study results. To this end, study hypotheses were re-examined after removing the observations for all participants who did not accurately perceive their assigned responsibility condition and goal condition.

This revised sample included 250 total observations from 25 faculty participants (56% female, 44% male) who each had evaluated 10 ideas. Means, standard deviations, and correlations for the revised sample are displayed in Table 16. Participants in the revised sample averaged 41.83 years in age (min 28, max 64, SD 9.51) and 14.54 years of teaching experience (min 1, max 40, SD 8.57). Approximately 60% were Caucasian, 16% were Hispanic, 12% were Asian, 4% were African American, and 8% were Other or chose not to report ethnicity.

Based on an initial examination, the results from the full sample did not make sense. Contrary to Study 1 and established findings from BDR research, they seemed to suggest the responsibility and/or goal conditions are unimportant and exert little influence on outcomes. However, a very different interpretation would be warranted if the revised sample, in which
responsibility and goal manipulations actually were perceived correctly, produced different results. Rather than being unimportant, responsibility and goal conditions would be shown to have a deeper significance of their own in determining outcomes. Consistent with this view, the results from the revised sample provided stronger support for several study hypotheses. These significant findings were more noteworthy considering that the revised sample contained 79% fewer observations, which produced a substantial reduction in statistical power. The results from the revised sample analyses are shown in Tables 17-25.

Hypotheses 1A-1C predicted that novelty and perceived usefulness would exhibit a net suppressor relationship in predicting the overall evaluation, likelihood of selection, and likelihood of recommendation for ideas. As in the original (full) sample for this study, three conditions needed to be met to provide support for a net suppressor relationship between novelty and usefulness. Consistent with expectations and the full sample, the first condition was met for overall evaluation ($t = 6.544, p < .01$) and likelihood of recommendation ($t = 5.024, p < .01$). However, contrary to expectations and to the full sample, this condition was not met for likelihood of selection ($t = 1.515$, NS). As expected and consistent with the full sample, the second condition was met for overall evaluation ($t = 8.262, p < .01$), likelihood of selection ($t = 14.418, p < .01$), and likelihood of recommendation ($t = 8.616, p < .01$). Finally, contrary to expectations but partially consistent with the full sample, the third condition was not met for any of the dependent variables of interest. The results of these analyses are shown in Tables 17-20. As expected, the perceived usefulness coefficients remained positive and significant for overall evaluation ($t = 7.024, p < .01$), likelihood of selection ($t = 14.460, p < .01$), and likelihood of recommendation ($t = 7.587, p < .01$). Once again, however, the novelty coefficients were positive rather than negative for overall
evaluation (t = 5.056, p < .01), and likelihood of recommendation (t = 3.374, p < .01). As a result, Hypotheses 1A and 1C were not supported.

However, more consistent with expectations and contrary to the full sample, the likelihood of selection coefficient was negative and statistically significant (t = -2.402, p = .03) based on a one-tailed test. As a result, Hypothesis 1B received some mixed support. On the one hand, these results provide support for the predicted negative relationship between novelty and likelihood of selection. However, since the first suppression model condition was not met for likelihood of selection, the negative relationship between idea novelty and selection does not appear to be suppressed by usefulness.

Hypotheses 2A-2D predicted that idea newness would be negatively related to perceived legitimacy, overall evaluation, likelihood of selection, and likelihood of recommendation. The results of these analyses are shown in Tables 21-25. Results from the revised sample were fairly consistent with those of the original full sample, namely that none of these predictions were supported, as the newness coefficients for perceived legitimacy (t = -.532, NS), overall evaluation (t = .525, NS), likelihood of selection (t = -1.539, NS) and likelihood of recommendation (t = 1.131, NS) were not statistically significant. Interestingly, although the newness coefficients for overall evaluation (5.35, p < .01) and likelihood of recommendation (t = 4.71, p < .01) were statistically significant when newness was entered individually, they were positive rather than negative. Consequently, Hypotheses 2A-2D were not supported.

Hypotheses 3A-3D predicted that idea uniqueness would be positively related to perceived usefulness, overall evaluation, likelihood of selection, and likelihood of recommendation. The results of these analyses are shown in Tables 21-25. Results from the
revised sample were consistent with those of the full sample, as all predictions were supported. Interestingly, only the uniqueness coefficient for likelihood of selection was statistically significant ($t = 2.267, p < .05$) when both uniqueness and newness were entered into the model. Consistent with expectations, however, the uniqueness coefficients for perceived usefulness ($t = 4.837, p < .01$), overall evaluation ($t = 5.729, p < .01$), likelihood of selection ($t = 2.527, p < .05$), and likelihood of recommendation ($t = 4.693, p < .01$) were positive and statistically significant when uniqueness was entered individually. Consequently, these results provided support for Hypotheses 3A-3D.

Finally, Hypotheses 4A-4D predicted an interaction between uniqueness and goal condition such that a novel goal would weaken the positive relationship between idea uniqueness and perceived usefulness, overall evaluation, likelihood of selection, and likelihood of recommendation. The results of these analyses are shown in Tables 8A-8D. In contrast to the full sample, which had few significant main or interactive goal condition effects, the results from the revised sample provided partial support for the hypothesized model. First, although there were no significant main effects of novelty goal content in predicting perceived usefulness ($t = .041, \text{NS}$) and perceived legitimacy ($t = -.169, \text{NS}$), there were significant negative main effects of novelty goal content in predicting overall evaluation ($t = -3.027, p < .01$), likelihood of selection ($t = -2.344, p < .05$), and likelihood of recommendation ($t = -2.797, p < .01$). Second, although there were no significant main effects of practical goal content in predicting perceived usefulness ($t = -.169, \text{NS}$) and perceived legitimacy ($t = 1.292, \text{NS}$), there were also significant positive main effects of practical goal content in predicting overall evaluation ($t = -2.055, p < .05$), likelihood of selection ($t = 2.365, p < .05$), and likelihood of recommendation ($t = 2.825, p < .01$). Third,
there were no significant interactive effects between idea uniqueness and practical goal content in predicting outcomes.

Perhaps most interestingly, despite the considerable practical challenges of detecting interactions with limited statistical power, there were several significant interactions between idea uniqueness and novelty goal content in predicting outcomes. Hypotheses 4A, 4B, and 4E were not supported since the interaction terms for idea uniqueness and novelty goal content were non-significant in predicting perceived usefulness (t = -.122, NS), perceived legitimacy (t = -.066, NS), and likelihood of recommendation (t = 1.250, NS). However, there were significant interactions between idea uniqueness and novelty goal content in predicting overall evaluation (t = 1.986, p < .05) and likelihood of selection (t = -1.95, p < .05). Since the coefficient on the interaction term for overall evaluation was positive rather than negative, Hypothesis 4C was not supported. However, the results from the revised sample provide support for Hypothesis 4D, a predicted negative interactive relationship between idea uniqueness and novelty goal content in predicting the likelihood of idea selection.

**Study 2 Discussion**

Although the mixed support for Hypothesis 1B in the revised sample could be viewed as a partial replication of the net suppressor effect from Study 1, Study 2 still provided limited support for the hypothesized negative forces in the suppression model. Although participant motivational and/or comprehension issues likely explain the null findings in the original full sample, the results from the revised sample also provided limited support for the proposed model. A substantial reduction in statistical power might be another explanation for the generally non-significant findings. However, the reduction in power did not prevent
the detection of several other significant effects in the revised sample, including interactions. As a result, the most compelling explanation for the discrepancies between Study 1 and Study 2 findings may be methodological differences between the two studies.

Given the power of goal setting (Locke & Latham, 2002), the introduction of goal condition manipulations to Study 2 was not only a significant change, but also one which could be expected to differentially influence how participants in the two studies valued (or devalued) novelty and its component dimensions. Indeed, results from the revised Study 2 sample indicated that goal conditions and the novelty component of uniqueness had significant interactive and main effects. As such, it seems most likely that the limited support provided for the proposed theoretical model in Study 2 may be attributable to the complex and sometimes unanticipated effects of goal setting (Ordonez, Schweitzer, Galinsky, & Bazerman, 2009). This interpretation would be consistent with the differences observed between Study 1 and 2, as well as the partial support provided by each study for individual components of the model. While it is unfortunate that these interactive effects may have impacted the ability to successfully replicate the Study 1 findings, they may also eventually yield substantively meaningful and practical insights for mitigating the negative forces observed in Study 1, as well as promoting the positive forces observed in Study 2.

Similarly, the non-significant results for Hypotheses 2A-2D in Study 2 also provided negligible support for the hypothesized role of idea newness as a primary driver of the negative forces in the suppression model. This result was also surprising given the results of Study 1, as well as the substantial base of prior empirical support for the status quo and novelty biases across a variety of settings. On the one hand, the effects of the goal condition
The manipulation described above are also likely relevant to the null findings for Hypotheses 2A-2D.

However, another relevant methodological explanation could also simply be the high degree of correlation between participants’ perceptions of idea uniqueness and idea newness. As shown in Tables 6 and 16, between idea correlations for uniqueness and newness were quite high within both the original (.898) and revised (.906) samples. Moreover, the correlations were often even higher within each idea in a given sample (low of .843 and high of .925). Similarly, regression analyses indicated that newness became non-significant when both uniqueness and newness were entered simultaneously into the model. One interpretation of these extremely high correlations could be that the novelty dimensions are not truly distinct and thus not theoretically relevant. However, the high correlations could also be attributable to the limitations of the idea set used in these studies. Upon further re-examination, the set of 10 ideas appeared to include many ideas which were both relatively unique and new or both non-unique and non-new, but much less variation in terms of ideas which were unique but not new or vice versa. Since study results were likely impacted by the goal condition manipulation and/or the limitations of the idea set, it would be premature to draw definitive conclusions about the validity of the novelty component dimensions and/or the proposed theoretical model. Further research is needed to more clearly assess the validity and relevance of various novelty components, both within the context of the current model and for a broader range of creativity outcomes.

In contrast to Hypotheses 1 and 2, the results of Hypotheses 3 and 4 testing were more consistent with the suggested theoretical model. For example, the support for Hypotheses 3A-3D was consistent with the proposed theoretical argument that idea
uniqueness and unconscious goal mechanisms may explain the positive force between idea novelty and subsequent outcomes. Given the limited differentiation between uniqueness and newness for the ideas in this study, it is unclear why the predicted (positive) effects of uniqueness were observed whereas those of newness were not. Curiously, the effect of idea uniqueness appeared to suppress newness effects in Study 2, much as its counterpart usefulness suppressed novelty effects in Study 1. Due to the limitations of the existing dataset, it would be premature to conclude that uniqueness is a suppressor of newness, that uniqueness is more important than newness, or that newness is unimportant in determining outcomes. However, these results did provide support for the potential role of uniqueness as the positive force in the relationship between novelty, perceived usefulness, and subsequent outcomes.

Perhaps the most interesting findings in Study 2 were the partial support for Hypotheses 4A-4D and the underlying theoretical argument that novelty goal content may have negative consequences on outcomes through unconscious goal mechanisms. On the one hand, prior research has shown that novelty goals promote the generation of creative ideas (Shalley et al., 2004). Moreover, the significant (positive) interaction between idea uniqueness and novelty goals in predicting idea overall evaluation suggests that novelty goals might be expected to facilitate innovation by promoting more favorable evaluation of the most unique ideas. However, the results of this study indicate that the relationships between creative idea generation, evaluation, and selection are complex, and that increases in creative idea generation may not promote greater innovation. For example, the significant (negative) main effects of novelty goals in predicting idea overall evaluation, selection, and recommendation suggested that novelty goals may not promote innovation since the
generation of more novel ideas also triggers less favorable creative idea evaluation, selection, and recommendation. Moreover, the significant (negative) interaction between idea uniqueness and novelty goals in predicting idea selection suggested that the unanticipated consequences of novelty goals may be most damaging to the most novel (e.g. unique) ideas. In sum, the Study 2 results suggest that novelty goals may not promote innovation due to their negative main and interactive effects on the selection and thus ultimately the implementation of creative ideas. More broadly, these results also indicate that understanding how to encourage the selection of novel ideas may be especially relevant to efforts to improve innovation.
CHAPTER 8
GENERAL DISCUSSION

Does increasing creativity (e.g. creative idea generation) promote innovation (e.g. the selection and implementation of creative ideas)? The present research examined this traditional assumption within the creativity and innovation literatures by proposing and testing boundary conditions in which increased creativity might negatively impact innovation. Results across two studies indicated that increased creativity (e.g. higher idea novelty) can indeed exert negative influences on idea selection and ultimately innovation outcomes. However, consistent with traditional perspectives, idea novelty also exerted positive forces on outcomes. These findings provide a relevant theoretical contribution to the creativity, innovation, and behavioral decision research literatures. While subject to some limitations, this research also offers fruitful directions for both future research and practical efforts to increase innovation within organizational settings.

Theoretical Contribution

This research contributes to the creativity literature by identifying new boundary conditions for the traditional view that increasing creativity will promote innovation. The findings from two studies indicate that the creativity component of novelty, despite some countervailing positive effects, can exert negative influences on innovation outcomes. By proposing and demonstrating that creativity can actually inhibit innovation, this research not only answers the call for creativity researchers to explore creativity as an independent
variable, but also provides new insights regarding unintended consequences of creativity (George, 2008).

The findings from this study also enhance knowledge of the complex process of innovation. By integrating and synthesizing the literatures on creativity and innovation, this research offers new insights for how creative innovation actually unfolds from initial idea generation to idea implementation. Indeed, the findings from this study raise several provocative questions about existing stage models employed within the creativity and innovation literatures, which have suggested that idea evaluation links creative idea generation to subsequent idea selection and implementation. More specifically, this research indicated that the process of idea evaluation can be decoupled from the process of idea selection and implementation. The current research also provides further evidence that contextual factors may be differentially effective at various stages in the innovation process. For example, innovation researchers have suggested that certain innovation stages (idea generation), may be more effectively performed by individuals, whereas other stages (idea selection) may be more effectively performed within a group context (Nijstad & DeDreu, 2002). The findings from the current research are not only consistent with the idea that certain contextual factors may be more or less effective in one stage than another, but develop new insights about how factors which promote one stage may actually inhibit subsequent stages. For example, idea uniqueness was found to promote favorable idea evaluation, yet to inhibit subsequent idea selection and implementation. Similarly, creativity goals have been found to promote idea generation (Shalley et al., 2004), yet the current findings suggest that novelty goals inhibit idea selection and implementation.
This research also contributes to the BDR literature by extending this stream of research to the domain of creativity and innovation. More specifically, these studies explored the degree to which certain creativity and innovation outcomes might be explained by the heuristic models emphasized by BDR researchers, in contrast to the rationalistic decision models often employed by organizational scholars. Building on the suggestion that heuristics may impact creative idea generation (George, 2008), this research applied established BDR mechanisms to predict new boundary conditions for when increasing creativity (e.g. idea generation) will actually inhibit subsequent creative idea implementation (e.g. innovation). Since these predictions were partially supported by findings from two studies, this research thus provides further evidence that BDR perspectives can inform topics of interest to OB researchers (Moore & Flynn, 2008). Indeed, these studies indicate that BDR mechanisms can provide new insights in the domain of creativity and innovation, such as barriers to the implementation of creative ideas and potential mitigation strategies.

**Limitations and Future Research**

Although this research provides a useful theoretical framework and offers new insights regarding the relationship between creativity and innovation, it is subject to a number of limitations, which also have implications for future research. First, the measures used in these studies have some limitations. For example, the creativity and innovation constructs that were measured were assessed with single-item measures. On the one hand, this approach is fairly common for creativity researchers, and several scholars have suggested that single item measures are not inherently unreliable (Wanous & Hudy, 1996; Wanous & Hudy, 2001). Consistent with this view, validity may be less of a concern for the well-established constructs of novelty and usefulness employed in both Study 1 and Study 2.
However, measurement validity may be more of a concern for the less established novelty concepts such as uniqueness and newness, and the study cannot provide evidence of validity for these measures.

It is also important to note that the underlying theoretical model involved several unconscious cognitive mechanisms, which thus were not measured and tested directly. Manipulation checks for accountability and goal condition were employed in Study 2 in an effort to provide proxies for the relevant constructs and mechanisms, and ultimately somewhat stronger evidence of measurement validity and underlying causal mechanisms. Nevertheless, the study can neither provide substantial evidence of construct validity nor rule out the possibility that alternative mechanisms may have caused the observed results. Indeed, it would be reasonable to argue that the results may have been produced by conscious mechanisms since decisions and judgments are a product of the interplay between the automatic and intuitive heuristic system and the more deliberate and analytical cognitive system (Kahneman & Frederick, 2002; Stanovich & West, 2002). Consistent with this view, the significant relationships between the level of effort control variable and outcomes such as likelihood of selection suggest that participants’ analytical systems were also engaged in their assessments of ideas.

Additionally, the majority of the data used in the study was self-reported, increasing the possibility that relationships among variables might be inflated due to common method variance (Podsakoff & Organ, 1986). However, since the underlying theory and predictions for this research are based on individuals’ subjective perceptions, gathering data from a single source was preferable for purposes of these studies (Edwards, Cable, Williamson, Lambert, & Shipp, 2006). Moreover, the results of the consensual assessment exercise,
which indicated reasonable consistency among individual raters, could mitigate some concerns about the validity of the individual subjective perceptual measures utilized in the two studies.

Given the measurement limitations of these studies, development and validation of improved measures for use in future research would be valuable. Given that specific creativity dimensions may exert differential influences on outcomes, development of improved measures for individual creativity components would be useful. Future studies are likely to continue to rely on self-reported measures for the subjective perceptions and behavioral intentions which are often core to underlying theories. However, the use of objective measures and/or measures of actual behaviors would complement these measures and provide increased confidence in research findings. Although some ingenuity may be required for the development and/or use of improved measures for unconscious cognitive processes, future research efforts in this area will be critical to unpacking the complex cognitive processes which link idea generation to eventual implementation. In addition to leveraging ongoing efforts to develop valid measures of unconscious cognitive processes, future researchers may also be able to strengthen causal inferences by directly manipulating hypothesized underlying mechanisms such as idea legitimacy, idea newness, or the existence of a status quo alternative.

Second, the findings from this research are based on a limited sample of participants and idea domains, which may limit the generalizability of the results. With respect to participants, Study 1 was confined to faculty members at one research university. Although Study 2 involved a much broader sample of university faculty, the revised sample included a much smaller number of participants. Additionally, the generalizability of study results
beyond a university setting may also be questioned. Similarly, the study findings regarding idea evaluation and selection processes are based on a single idea domain (e.g. ideas for how to improve the student learning experience in an academic setting). However, BDR research indicates that idea evaluation and selection should be driven by the same basic underlying cognitive and motivational processes, and thus that theoretical predictions and research findings should be relatively robust to variations in participants or idea domains.

Although the limitations of the participant and idea samples are legitimate concerns, they might also be viewed as providing a relatively stringent test of the proposed model, which ultimately could provide increased confidence in the study findings. For example, participants in a university setting might be expected to highly value the development of novel ideas and new knowledge. As a result, the negative effects of novelty observed in these studies were somewhat surprising, and might be expected to be even stronger in alternative settings where novel ideas and new knowledge may be perceived to have less intrinsic value.

Nevertheless, this research does reflect a limited sample of participants and ideas, and its extension to broader samples of idea domains, participants, and organizations in future studies would increase confidence in observed findings. Although broader samples of participants and idea domains are important, future research with larger samples is particularly needed, as such studies would provide the capability to explicitly test and compare alternative structural models. Creativity researchers may find structural equation models to be particularly valuable in efforts to increase understanding of the complex interplay between creativity components at various stages in the life cycle of creative innovation. Similarly, it could be useful for innovation researchers to develop and test
refined stage models which more clearly elaborate and unpack the moderating and mediating mechanisms which link idea generation to implementation.

Third, these studies were conducted with an experimental approach. On the one hand, these studies did mimic certain elements of a field setting, particularly in Study 1 where participants were asked to evaluate ideas for potential implementation in their own institution. Nevertheless, it is unclear whether the findings from this research will generalize to a field setting. Similarly, this research relied primarily on BDR mechanisms to explain relationships between creativity and innovation. Although many field studies have replicated BDR experimental studies (Gilovich et al., 2002; Moore & Flynn, 2008), it is still important to note that the relevance of the BDR perspective for field organizational settings has sometimes been questioned. Scholars have argued that the decision outcomes highlighted by BDR are artifacts of the research setting (Gigerenzer, 2000), and that BDR conceptions of appropriate decision making are overly simplistic (Gigerenzer, 1996) and inappropriate for analyzing organizational decisions (March, 1991). Although scholars clearly have differing views of the rationality and/or optimality of various decision outcomes, the notion that individuals have cognitive limitations and are reliant on shortcuts and heuristics is relatively noncontroversial, and ultimately central to organizational theory. Moreover, reliance on heuristics is theoretically driven by high cognitive load and time pressure (Simon, 1956), which are becoming increasingly prevalent in the work environment (Hodgkinson & Healey, 2008). Consequently, it is quite plausible that the predictions driven by BDR knowledge of heuristics will actually be more, rather than less, relevant to field organizational settings. However, generalizability is a legitimate concern and it is unclear whether the research setting provided an appropriate simulation of the psychological mechanisms involved in idea
evaluation and selection processes, particularly since this research only measured implementation intentions rather than actual implementation decisions. As a result, it would be useful for future research to examine linkages between creative idea generation and implementation in more naturalistic work environments such as field studies. Although these research efforts would provide limited ability to infer causal mechanisms, they would likely promote greater range in idea content. More importantly, field studies would significantly increase realism through the ability to examine judgments and decisions in real organizational contexts with meaningful consequences. Moreover, given the high level of executive interest in the topic of creativity and innovation, field experiments may be an increasingly viable option for future creativity and innovation research. Archival studies may also be useful, although future research should examine both selected and rejected ideas, since datasets which include only actual innovation or idea implementation are likely to suffer from significant restrictions in range and sampling bias.

This research suggests that a BDR perspective can be useful in highlighting potential conditions which may warrant re-examination of some of the traditional assumptions of the creativity and innovation literatures, and thus ultimately increase understanding of outcomes. Indeed, BDR’s specific focus on judgments and decisions appears to be well-suited to the domain of creative innovation. For example, creative idea generation (George, 2008) and idea evaluation (Mumford, 2003) are highly cognitive processes which involve substantial judgment, and idea implementation involves an adoption decision (West, 2002), whether implicit or explicit. However, BDR is just one perspective within a much broader literature on judgment and decision making (JDM). For example, naturalistic decision making (NDM) perspectives emphasize the judgments and decisions of experts and non-experts in
naturalistic real-world contexts (Lipshitz, Klein, & Carroll, 2006), whereas organizational
decision making (ODM) perspectives focus on organization level decisions and the wide
range of variables managers must consider in making decisions, including political and
normative constraints (March, 1991; Tetlock, 1985). As such, creativity and innovation
researchers may want to consider whether NDM and/or ODM perspectives can also yield
new insights and increase understanding of idea evaluation and selection processes. Broadly
speaking, JDM perspectives may have significant potential for creativity and innovation
researchers who seek to elaborate the linkages between idea generation and subsequent idea
implementation.

While JDM perspectives might yield new insights, further theoretical and empirical
progress will ultimately be grounded in the substantial existing base of creativity and
innovation research knowledge. Nevertheless, the findings from this research suggest a need
for further theoretical development of the underlying mechanisms which link creative idea
generation and implementation, as well as several promising directions to guide these efforts.
For example, these studies supported the role of idea novelty as a moderator of creativity and
innovation, and it would be useful for creativity and innovation researchers to explore
additional moderators. Similarly, this research suggested that existing stage models,
particularly the theoretical linkages between idea evaluation and selection, may need re-
examination. As a result, future research efforts to unpack the relationship between idea
evaluation and selection, including significant mediators or moderators, would be useful.
Additionally, these studies indicated that individual creativity components may differentially
impact outcomes, so continued efforts to examine the role of various creativity components
in producing specific outcomes would be valuable. Finally, since the current research
examined only individual outcomes, it could be interesting for future researchers to examine whether and how outcomes and model relationships for groups may vary from those of individuals.

**Practical Implications**

This research also offers some interesting practical insights for both employees and managers. Much prior research has emphasized how to promote creative idea generation, which ideally would translate to innovation through the positive forces often emphasized in prior research. However, the results of these studies indicate that employees and managers who seek to promote creative idea implementation also need to combat several negative forces which otherwise are likely to inhibit the selection and implementation of novel ideas. Given the seeming complexity and interplay of the positive and negative forces observed in these studies, such efforts may seem daunting. However, the BDR perspective applied in this research provides a robust and evidence-based framework which employees and managers can apply to better harness and mitigate the respective positive and negative forces, and ultimately facilitate innovation in their organizations as well as the implementation of their own creative ideas.

For employees, much research knowledge is available to help to improve their creative output, but much less guidance is available for how they might facilitate the positive evaluation and selection of any creative ideas they manage to generate. However, the findings from this research suggest that employees who labor to generate novel ideas may do so in vain, unless they also apply strategies to facilitate favorable evaluation and selection of the ideas they generate. Moreover, since the factors which facilitate desired outcomes may vary during different stages of the innovation process, employees may need to adopt hybrid
strategies to successfully shepherd novel ideas from generation to implementation. For example, highlighting the uniqueness of an idea might be an effective strategy to promote favorable idea evaluation. On the other hand, employees may want to devote particular attention to selection processes, since findings suggested that unique ideas may indeed be evaluated favorably, yet are still less likely to be selected. As such, an employee might facilitate selection of an idea by de-emphasizing its newness, including possibly borrowing legitimacy from a more established idea with some degree of similarity.

The results of these studies also have some provocative implications for executives and managers. For example, executives cannot expect to improve innovation outcomes by simply demanding greater accountability from their staff. Indeed, study findings suggest that increased responsibility and accountability can result in less favorable evaluation and selection of creative ideas, raising clear questions about the assumed relationship between creativity (idea generation) and innovation (implementation). Similarly, despite some evidence that creativity goals have positive effects on idea generation (Shalley et al., 2004), managers may want to approach goal setting interventions with caution. While apparently useful in the context of idea generation, the powerful and complex interactive effects observed in these studies for fairly weak goal manipulations suggest that such interventions may have unintended and even negative consequences. Indeed, the results of Study 2 suggested that even very minor goal interventions can “go wild” (Ordonez, Schweitzer, Galinsky, & Bazerman, 2009) with meaningful consequences for creativity and innovation outcomes.

Nevertheless, the findings from this research do provide other potential guidance for leaders who seek to promote innovation within their organizations. Interestingly, much prior
research has emphasized how leaders can promote or inhibit creativity through a variety of conscious and deliberate activities such as providing necessary resources, designing reward systems, providing interpersonal support, or promoting psychological safety (George, 2008). However, despite their conscious and diligent efforts to promote innovation, the findings from this research suggest that well-meaning managers may unconsciously “kill creativity” (Amabile, 1998) via cognitive processes through which they reflexively devalue novel ideas generated by their employees. Since leaders exert significant influence on decisions in their units, managers who want to promote creative idea implementation may find that one of the most effective strategies is simply to “start with themselves”. For example, managers can help mitigate negative forces by increasing their knowledge of cognitive heuristics, developing greater self-awareness of potential influences on their evaluation and selection of ideas, and thus ultimately reducing their own biases toward novel ideas. However, managers cannot combat negative forces alone. Not only do individuals have difficulty de-biasing their own decisions (Larrick, 2004), but managers may also want to promote more decentralized and participative decision making within their units. As a result, managers armed with knowledge of the positive and negative forces may want to focus their efforts on designing improved idea evaluation and selection processes, which will reduce the likelihood that any organizational member will reflexively dismiss a novel but potentially useful idea.

Conclusion

This research yielded only partial support for the hypothesized relationships between idea novelty and subsequent outcomes, perhaps due to several methodological limitations. Nevertheless, it does provide preliminary support for the ideas that increased creativity can actually inhibit innovation under certain conditions, that cognitive heuristics may play an
important but unappreciated role in the implementation of creative ideas in organizations, and that future research to unpack idea evaluation and selection processes may substantially improve understanding of creative innovation. Scholars and management gurus alike have long recognized the significance of cognition for generating creative ideas and solutions, noting that we can't solve problems by using the same kind of thinking as when we created them (Calaprice, Dyson, & Einstein, 2005) and that the way we think about the problem is often the problem (Covey, 1989). This research suggests that cognition and “the way we think” are also critical to idea evaluation and selection. Further research to examine how people think about creative ideas will not only increase understanding of idea evaluation and selection, but can also yield new insights to improve how we think and ultimately promote creative innovation in organizations.
TABLES
Table 1

Study 1 Means, Standard Deviations, and Correlations

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<td>.240**</td>
<td>.172**</td>
<td>.196**</td>
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<td>.948**</td>
<td>.857**</td>
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N = 2050; *p < .05 (two-tailed), ** p < .01 (two-tailed).

Variables are measured on a 7-point Likert-type scale with one item.
Table 2

Study 1 Regression Analyses - Perceived Usefulness

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N = 2050. Statistics represent nonstandardized regression coefficients

* p < .05 ** p < .01
Table 3

Study 1 Regression Analyses – Overall Evaluation

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N = 2050. Statistics represent nonstandardized regression coefficients

* p < .05 ** p < .01
Table 4

Study 1 Regression Analyses - Selection

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<td>-.154 *</td>
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<td>.967 **</td>
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N = 2050. Statistics represent nonstandardized regression coefficients

\* p < .05 ** p < .01
Table 5

Study 1 Regression Analyses - Recommendation

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N = 2050. Statistics represent nonstandardized regression coefficients

* p < .05 ** p < .01
Table 6
Study 2 Means, Standard Deviations, and Correlations (Full Sample)

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<tr>
<th>Variable</th>
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<td>-</td>
<td>.898**</td>
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N = 1190; *p < .05 (two-tailed), **p < .01 (two-tailed).

Variables are measured on a 7-point Likert-type scale with one item.
Table 7

Study 2 Suppression Regression Analyses (Full Sample) – Perceived Usefulness

<table>
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<td>B</td>
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<td>.052</td>
<td>-.272 **</td>
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Novelty

Usefulness

R²                  | .036   | .036   |

ΔR²

N = 1190. Statistics represent nonstandardized regression coefficients

* p < .05 ** p < .01

Note: Results reflect coefficients when Goal Condition variables are also included in the model
Table 8

Study 2 Suppression Regression Analyses (Full Sample) – Overall Evaluation

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N = 1190. Statistics represent nonstandardized regression coefficients

* p < .05 ** p < .01

Note: Results reflect coefficients when Goal Condition variables are also included in the model.
Table 9

Study 2 Suppression Regression Analyses (Full Sample) – Selection

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<td>.010  **</td>
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N = 1190. Statistics represent nonstandardized regression coefficients

* p < .05 ** p < .01

Note: Results reflect coefficients when Goal Condition variables are also included in the model.
Table 10

Study 2 Suppression Regression Analyses (Full Sample) – Recommendation

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N = 1190. Statistics represent nonstandardized regression coefficients

* p < .05 ** p < .01

Note: Results reflect coefficients when Goal Condition variables are also included in the model.
Table 11

Study 2 Regression Analyses (Full Sample) - Perceived Usefulness

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<td>.162 *</td>
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N = 1190. Statistics represent nonstandardized regression coefficients
*p < .05 ** p < .01
Table 12
Study 2 Regression Analyses (Full Sample) - Perceived Legitimacy

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N = 1190. Statistics represent nonstandardized regression coefficients

* p < .05  ** p < .01
Table 13

Study 2 Regression Analyses (Full Sample) - Overall Evaluation

<table>
<thead>
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<th>Independent Variable(s)</th>
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N = 1190. Statistics represent nonstandardized regression coefficients

* p < .05  ** p < .01
Table 14

Study 2 Regression Analyses (Full Sample) - Selection

<table>
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<th>Step 2</th>
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<td>6.185 ** .312</td>
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<td>-.515 ** .056</td>
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<td>.231 ** .070</td>
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<td>.032 .069</td>
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<td>.099 .073</td>
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<td>-.122 .067</td>
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$R^2$  .059  .126  .127
$\Delta R^2$  .067  .001

N = 1190. Statistics represent nonstandardized regression coefficients

* p < .05 ** p < .01
Table 15
Study 2 Regression Analyses (Full Sample) - Recommendation

<table>
<thead>
<tr>
<th>Independent Variable(s)</th>
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<td>4.778 **</td>
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<td>.005</td>
<td>-.005</td>
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<td>.056</td>
<td>-.239 **</td>
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<td>.231 **</td>
<td>.070</td>
<td>.157 *</td>
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<td>Newness</td>
<td>.032</td>
<td>.069</td>
<td>.135 *</td>
</tr>
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<td>.099</td>
<td>.073</td>
<td>.112</td>
</tr>
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<td>-.114</td>
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<td>Uniqueness * Practical Goal Condition</td>
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<td>.069</td>
<td></td>
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<td>.127</td>
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N = 1190. Statistics represent nonstandardized regression coefficients

* p < .05 ** p < .01
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<td>1.61</td>
<td>-</td>
<td>.862*</td>
<td>.836*</td>
<td>.261</td>
<td>.198</td>
<td>.376</td>
<td>0.07</td>
<td>.293**</td>
</tr>
<tr>
<td>2. Uniqueness</td>
<td>4.36</td>
<td>1.58</td>
<td>.862*</td>
<td>-</td>
<td>.906*</td>
<td>.280</td>
<td>.189</td>
<td>.323</td>
<td>0.09</td>
<td>.262**</td>
</tr>
<tr>
<td>3. Newness</td>
<td>4.30</td>
<td>1.64</td>
<td>.836*</td>
<td>.906*</td>
<td>-</td>
<td>.261</td>
<td>.158</td>
<td>.296</td>
<td>0.07</td>
<td>.281**</td>
</tr>
<tr>
<td>4. Usefulness</td>
<td>5.02</td>
<td>1.39</td>
<td>.261*</td>
<td>.280*</td>
<td>.261*</td>
<td>-</td>
<td>.852</td>
<td>.478</td>
<td>.648*</td>
<td>.454**</td>
</tr>
<tr>
<td>5. Legitimacy</td>
<td>4.98</td>
<td>1.34</td>
<td>.198*</td>
<td>.189*</td>
<td>.158*</td>
<td>.852</td>
<td>-</td>
<td>.439</td>
<td>.679*</td>
<td>.462**</td>
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<td>1.43</td>
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<td>.323</td>
<td>.296</td>
<td>.478</td>
<td>.439</td>
<td>-</td>
<td>.434</td>
<td>.773**</td>
</tr>
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<td>0.07</td>
<td>0.099</td>
<td>0.07</td>
<td>.648</td>
<td>.679</td>
<td>.434</td>
<td>-</td>
<td>.572**</td>
</tr>
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<td>8. Likelihood of Recommendation</td>
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<td>1.53</td>
<td>.293*</td>
<td>.262*</td>
<td>.281*</td>
<td>.454</td>
<td>.462</td>
<td>.773</td>
<td>.572*</td>
<td>-</td>
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</table>

N = 250; *p < .05 (two-tailed), **p < .01 (two-tailed).

Variables are measured on a 7-point Likert-type scale with one item.
Table 17

Study 2 Suppression Regression Analyses (Revised Sample) – Perceived Usefulness

<table>
<thead>
<tr>
<th>Independent Variable(s)</th>
<th>Step 1</th>
<th></th>
<th>Step 2</th>
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<tr>
<td></td>
<td>B</td>
<td>SE</td>
<td>B</td>
<td>SE</td>
</tr>
<tr>
<td>Intercept</td>
<td>6.193 **</td>
<td>.333</td>
<td>5.466</td>
<td>.344</td>
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<td>Participant Work Experience</td>
<td>.009</td>
<td>.006</td>
<td>.012 *</td>
<td>.006</td>
</tr>
<tr>
<td>Level of Effort to Implement Idea</td>
<td>-0.272 **</td>
<td>.062</td>
<td>-0.309 **</td>
<td>.061</td>
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<tr>
<td>Novelty Usefulness</td>
<td></td>
<td></td>
<td>.204 **</td>
<td>.032</td>
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</table>

\[ \begin{align*}
R^2 \\
\Delta R^2
\end{align*} \]

\( N = 250 \). Statistics represent nonstandardized regression coefficients

\* \( p < .05 \) \** \( p < .01 \)

Note: Results reflect coefficients when Goal Condition variables are also included in the model.
Table 18

Study 2 Suppression Regression Analyses (Revised Sample) – Overall Evaluation

<table>
<thead>
<tr>
<th>Independent Variable(s)</th>
<th>Step 1</th>
<th></th>
<th>Step 2</th>
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<td>SE</td>
<td>B</td>
<td>SE</td>
</tr>
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<td>.555</td>
<td>2.174 **</td>
<td>.589</td>
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<td>.011</td>
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<td>.009</td>
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<td>Experience</td>
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<td>Level of Effort to</td>
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<td>-.085</td>
<td>.089</td>
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<td>.053</td>
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<td>.407 **</td>
<td>.058</td>
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<td>.555</td>
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N = 250. Statistics represent nonstandardized regression coefficients

* p < .05 ** p < .01

Note: Results reflect coefficients when Goal Condition variables are also included in the model.
Table 19

Study 2 Suppression Regression Analyses (Revised Sample) – Selection

<table>
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<td>.012</td>
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<td>.049</td>
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<td>.054</td>
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N = 250. Statistics represent nonstandardized regression coefficients

* p < .05 ** p < .01

Note: Results reflect coefficients when Goal Condition variables are also included in the model.
Table 20

Study 2 Suppression Regression Analyses (Revised Sample) – Recommendation

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<td>.056</td>
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<td>.469 **</td>
<td>.062</td>
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N = 250. Statistics represent nonstandardized regression coefficients

* p < .05 ** p < .01

Note: Results reflect coefficients when Goal Condition variables are also included in the model.
Table 21

Study 2 Regression Analyses (Revised Sample) - Perceived Usefulness

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<td>.017</td>
<td>.010</td>
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<td>.098</td>
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<td>.281 **</td>
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N = 250. Statistics represent nonstandardized regression coefficients

* p < .05 ** p < .01
### Table 22

Study 2 Regression Analyses (Revised Sample) - Perceived Legitimacy

<table>
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<td>.008</td>
<td>.010</td>
<td>.008</td>
<td>.010</td>
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<td>-.354 **</td>
<td>.095</td>
<td>-.355 **</td>
<td>.096</td>
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<td>.266</td>
<td>.140</td>
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<td></td>
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<td>-.070</td>
<td>.132</td>
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<td>.178</td>
<td>.198</td>
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<td>.112</td>
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</tr>
<tr>
<td>( \Delta R^2 )</td>
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<td>.000</td>
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</table>

N = 250. Statistics represent nonstandardized regression coefficients

* p < .05 ** p < .01
Table 23

Study 2 Regression Analyses (Revised Sample) - Overall Evaluation

<table>
<thead>
<tr>
<th>Independent Variable(s)</th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
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</thead>
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<tr>
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<td>B</td>
<td>SE</td>
<td>B</td>
</tr>
<tr>
<td>Intercept</td>
<td>5.690 **</td>
<td>.555</td>
<td>4.636 **</td>
</tr>
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<td>Participant Work Experience</td>
<td>.001</td>
<td>.011</td>
<td>.003</td>
</tr>
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<td>.103</td>
<td>-.242 *</td>
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<tr>
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<td>.275 *</td>
<td>.139</td>
<td>.241</td>
</tr>
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<td>Newness</td>
<td>.054</td>
<td>.135</td>
<td>.071</td>
</tr>
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<td>.122</td>
<td>-.394 **</td>
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<td>.190</td>
<td>.130</td>
<td>.289 *</td>
</tr>
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<td>.298 *</td>
<td>.150</td>
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<td></td>
</tr>
</tbody>
</table>

\[ R^2 \] 0.029  0.149  0.164
\[ \Delta R^2 \] 0.12  0.015

N = 250. Statistics represent nonstandardized regression coefficients

* p < .05 ** p < .01
Table 24

Study 2 Regression Analyses (Revised Sample) - Selection

<table>
<thead>
<tr>
<th></th>
<th>Step 1</th>
<th>Step 2</th>
<th>Step 3</th>
</tr>
</thead>
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<td></td>
<td>$B$</td>
<td>$SE$</td>
<td>$B$</td>
</tr>
<tr>
<td>Intercept</td>
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<td>.593</td>
<td>6.613 **</td>
</tr>
<tr>
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<td>.001</td>
<td>.012</td>
<td>.002</td>
</tr>
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<td>Level of Effort to Implement Idea</td>
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<td>.110</td>
<td>-.499 **</td>
</tr>
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<td>.160</td>
<td>.362 *</td>
</tr>
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<td>.152</td>
<td>-.232</td>
</tr>
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<td>Novelty Goal Condition</td>
<td>-.426 **</td>
<td>.137</td>
<td>-.341 *</td>
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<tr>
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<td>.452 **</td>
<td>.146</td>
<td>.372 *</td>
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<td>-.328 *</td>
<td>.168</td>
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<tr>
<td>$R^2$</td>
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<td>.166</td>
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<tr>
<td>$\Delta R^2$</td>
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<td>.031</td>
<td>.018</td>
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</table>

N = 250. Statistics represent nonstandardized regression coefficients

* p < .05 ** p < .01
Table 25
Study 2 Regression Analyses (Revised Sample) - Recommendation

<table>
<thead>
<tr>
<th>Independent Variable(s)</th>
<th>Step 1</th>
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<th>Step 2</th>
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<td>Newness</td>
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<tr>
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<td>-.390 **</td>
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<td>Practical Goal Condition</td>
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<td>.426 **</td>
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</table>

N = 250. Statistics represent nonstandardized regression coefficients

* p < .05 ** p < .01
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