

THE PENNSYLVANIA STATE UNIVERSITY
SCHREYER HONORS COLLEGE

DEPARTMENT OF PSYCHOLOGY

THE EFFECTS OF PERSONALITY AND MODELING OF BEHAVIORS IN
MALEVOLENT FORMS OF CREATIVITY

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Fall 2010

A thesis
submitted in partial fulfillment
of the requirements
for a baccalaureate degree
in Psychology
with honors in Psychology

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ABSTRACT

The traditional view of creativity has held that creativity is beneficial, or benevolent. In contrast to the constructive forms of creativity we are most familiar with, is the darker and more destructive side of the creative process. The intended use of creativity to negative ends has been formally referred to as malevolent creativity. This study examines malevolent creativity in 173 participants using an online survey. Concepts from traditional creativity research provided important insights into the creative person and process. Combined, these areas of research facilitated a framework for examining how the malevolent and creative person, converge. The key personality traits and situations that foster malevolent forms of creativity are discussed.

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ACKNOWLEDGEMENTS

I would like to thank Dr. Samuel Hunter and Lily Cushenbery for all of their guidance, availability and expertise, throughout the duration of this project. Without their endless support and assistance this project could not have been completed. Thank you so much for all of your help. It was, and still is, greatly appreciated!

I would also like to thank Jenna Shapiro and Mona Shah for helping to code all participant responses. Thank you for your help and assistance! Similarly, thank you Brendan Saller, Brian Walker, Carson Custer, Elena Kashkan and Lauren Volphone for your time and energy as actors in the video vignettes. Your roles were pivotal to the success of this study. Thank you for all your hard work.

Finally, I would like to thank my Dad for his constant support and encouragement not only throughout this project, but throughout my academic career. Without your unwavering love, guidance and support I would not be where I am today. Thank you.

*This study was supported by a Summer Research Grant from the Schreyer Honors College. Thank you SHC for affording me this wonderful opportunity.

INTRODUCTION

The study of creativity was born more than fifty years ago in an address to the American Psychological Association by J.P. Guilford in his 1950 article titled “Creativity.” Since Guilford, creativity research has steadily grown in its depth and breadth of knowledge in regards to the creative person, process, and outcome (Sternberg, 2005). Today, the field of creativity is large and varied, incorporating more than 60 definitions, an encyclopedia, and a series of handbooks (Sternberg, 2005). As a result, the subject of creativity is a complex, multifaceted field that is distinct and independent from other areas of research such as innovation, imagination and intelligence.

Creativity plays an important role in our everyday lives. We use creative thinking to not only problem solve, but to cope, learn and adapt on a daily basis. Of consequence, leading researchers have begun to address ways in which creativity can be enhanced and manipulated. Research questions include how to recognize key personality traits, or intrinsic characteristics of the creative person, and; how to best support, guide, and strengthen creative environments (Sternberg, 2005).

In addition to research on the creative person and environment, researchers have begun to explore the relationship between culture and creativity (Westwood, 2003). This approach to creativity has found among other things, that no one culture is superior to another in fostering creativity. The cultural norms and values we are exposed to, provide us with different mechanisms and cognitive schemes in which we assess and measure *creativity* (Westwood, 2003). For example, Westwood (2003) describes western culture as emphasizing creativity as a pragmatic tool to help people problem solve. This is in contrast to the “situation accepting” orientation in Asia and elsewhere (Westwood, 2003).

Overall, creativity researchers agree that creativity is the result of certain personality traits, sociocultural influences, and environmental components (Edmonds et al., 2005).

Researchers have also determined that creative individuals do not work in isolation, but rather, in collaboration with others. Thus, creativity arises from activities where interaction is necessary and collective knowledge is essential (Fischer et al., 2005).

What is creativity?

Creativity in its most simplistic sense is regarded as the production of an idea or product that is both novel and useful (Mumford, Connelly & Gaddis, 2003). Such a definition would not be comprehensive if it did not include the components of originality and usefulness (Edmonds et al., 2005). These additional components distinguish creativity from other cognitive abilities like reading, writing, and learning. Moreover, creativity research tends to suggest that creativity is within the individual and is reliant upon cognitive style, ability, and expertise (Furnham & Bachtiar, 2008).

Who is the creative person?

A vast area of creativity research has been dedicated to the creative person. The most widely used personality theory for creativity researchers is the Five-Factor Model of Personality. This theory includes the personality traits of neuroticism, agreeableness, openness to experience, conscientiousness, and extraversion. The most highly associated personality trait to be linked to creativity (from this theory) is openness to experience (Viswesvaran, & Ones, 2000; Feist, 1998). To illustrate this, a meta-analysis by Feist (1998) found that scientists and artists that were “open to new experiences” were associated with innovation and higher levels of creative performance.

Similar to the link between creativity and “openness,” is the psychometric measure of intelligence *and* creativity. For example, Wai et al. (2005) demonstrates the unique link between intelligence and creativity in a longitudinal study comprised of gifted thirteen year olds. Wai and colleagues found that SAT scores predicted creative accomplishments 20 years later for these gifted students. These findings by Feist and Wai showcase the predictive powers of intelligence and “openness” in creative personalities.

Interestingly, Furnham and Bachtiar (2008) found that self-assessed creative ability was significantly related to overall creativity. The theoretical basis for measuring creative performance through self-assessment stems from the self-efficacy of participants. Participants that indicate high creative ability are associated with high creative output (Bandura, 1997). Combined, these findings suggest that creative people are intelligent, open to new experiences and possess an ability for self-evaluation.

What is a creative environment?

A statement alluded to earlier is that environment can be more or less conducive to creative thinking and innovation. The application of understanding creative environments extends well beyond theoretical frameworks. In an experimental study by Amabile (1990) work environment was determined as crucial to creative performance. Similarly, in a meta-analysis by Hunter, Bedell-Avers, and Mumford (2007) it was found that creative climate was central to successful innovation.

In addition to identifying the importance of creative climates in the creative process, eight essential stimulants for creative environments were identified by Amabile and Gryskiewicz (1989). These stimulants included diverse and communicative coworkers, appropriate resources

and recognition, and perceived support for creative endeavors by the organization. Similarly, researchers found that time pressure, keeping the status quo, too much evaluation and organization hindered creative environments and by proxy, innovation (Amabile & Grysiewicz, 1989).

Link between creativity, crime and terrorism

The creativity behind planning and executing terroristic acts has increasingly taken the agenda of leading creativity researchers. Contrary to common perception, terrorism does not precede poverty, lack of education, and membership into certain social and religious groups (Mumford & Hunter, 2005). Rather, the driving force behind most terroristic individuals is one of dissatisfaction with the current state of community or country (Mumford & Hunter, 2005).

In addition to this research, James et al. (1999) described the key ingredients to creative terrorism as innovation with malevolent intent. This description by James and colleagues is consistent with the goals of terrorism: to illicit chaos, fear and confusion in effective and surprising ways (Stout, 2002). Thus, terrorism and criminality can be efficaciously argued as creative endeavors to malevolent ends. In light of this, there is an acute need for society to understand the predictors of malevolent creativity in the implementation of criminal and terroristic acts.

Malevolent creativity

“Never again should we think of creativity as strictly a good thing” (Cropley, Kauffman, & Cropley, 2008, p.134). The behavior of terrorists and criminals alike, demonstrate that “creativity can be used for evil” and destructive purposes (Cropley et al., 2008, p.134). In this

regard, creativity should not be regarded as an inherently moral act but rather, an act of originality and usefulness for both good and bad outcomes.

Malevolent or benevolent forms of creativity are most analogous to different sides of the same coin. Most creativity research has focused on the study of benevolent creativity, the good outcomes of the creative process. However, in contrast to the virtuous side of creativity is the darker and more destructive side of the creative process termed malevolent creativity.

Specifically, malevolent creativity is a creative endeavor “deliberately planned” to bring harm, damage, or destruction (Andreani & Pagnin, 1993). This dark side of the creative coin lacks the innately moral component of previously described creative people and environments. Andreani and Pagnin (1993) created a comprehensive list of principles inherent of malevolent forms of creativity. These included antisocial intentions and a nonexistent regard for social conventions.

In addition to trying to describe the intrinsic characteristics of malevolent creativity, researchers have found that malevolent creativity can be triggered by emotional reactions. Individuals who experience negative “affect” tend to develop negative creative goals that provoke more malevolent behaviors (James et al., 1999). Similarly, the personality traits that tend to correlate to malevolent individuals are unconventionality and impulsiveness, traits associated with criminality (Schuldberg, 2001). Additionally, research on malevolent forms of creativity tend to suggest a link between depression and other affective disorders in regards to more creative outcomes (Akinola & Mendes, 2008).

However, it should be noted that identifying malevolently creative individuals is new to the area of creativity research. Currently, little is not known about malevolent creativity in terms of the person, group, and context. Therefore, this study attempts to examine malevolently

creative individuals and situations from a combination of research on malevolent personalities and the creative person.

Hypothesis 1a: We predict high levels of malevolent creativity in participants with creative ability and a malevolent disposition.

Hypothesis 1b: Similarly, we predict malevolently creative individuals will be low on impulse control and high on need for cognition.

Hypothesis 1c: Finally, we predict that malevolent creativity will be seen in participants higher in intelligence, an important factor in predicting creative performance.

Malevolent creativity and group influences

As previously described, creativity does not take place in isolation with one's self but rather, in collaboration with others. This essential component to the creative process can be applied to criminal and terroristic groups that accomplish "evil" goals with innovative ideas or products. Thus, examining the application of malevolent creativity by malevolent organizations is beneficial to society and should incorporate a framework of social interactions and peer pressure.

The powerful effects of group influence and social pressure are demonstrated in a classic study by Asche (1951). In this study, participants would give the clearly erroneous answer when the majority of "participants" (confederates of the study) answered the same question, incorrectly. The results of this study indicated that "the tendency to [conform] in our society is so strong that reasonably intelligent and well-meaning young people are willing to call white black" (Asche, 1951, p.190).

In a revised version of this study a situational factor found to influence the overall level of conformity was group size. Specifically, participants conformed to groups of 3 or 4 just as easily as they conformed to groups of 4 or more (Asche, 1956). Interestingly, the participants that conformed the least were seen in experiments where a confederate acted as an “ally.”

Moreover, in a series of experiments containing a single confederate “ally” participants were more likely to give the correct answer a fourth as much as in they did in original experiment by Asche (1951). These findings reveal the importance of group influence and the role of social pressure in conforming to the beliefs and actions of the majority. Therefore, the study of malevolent creativity must take into consideration the effects of group interactions and peer pressure.

Hypothesis 2a: We predict malevolent creativity will be highest in peer groups characterized by malevolence through malevolent peer modeling. Furthermore, malevolence and malevolent creativity will flourish at the behest of a malevolent contemporary.

Hypothesis 2b: Malevolent creativity will deteriorate in peer groups characterized by benevolence. Moreover, we predict the least amount of malevolence and malevolent creativity in participants exposed to benevolent peer modeling.

METHODS

Participants

Participants were recruited from an upper level psychology course from a large Northeastern University. Of the 173 individuals who completed the online survey, 59% were female and 41% male. The average age of the sample was 22 with 81% of participants between 18 and 22 years of age. Furthermore, all participants were allotted ample time to complete the study and received extra credit as compensation toward their final grade.

Procedure

This experiment was conducted through an online survey. A link to the survey site was provided to participants by their course instructor. Prior to taking the survey, students were informed that the intent of the study was to “determine how framing affects the way an event is planned.” In addition to this, participants were informed that they would be asked to provide creative input to several scenarios not beyond those experienced in everyday life.

The first task participants were asked to complete required answering a battery of control measures. These measures included self-evaluation of creative performance and personality. After students completed the initial measures, they were asked to be as creative as possible in gaining the media’s attention in an attempt to change a new University policy.

In regards to asking participants to be “as creative as possible,” research suggests that asking college students to be more creative leads to higher levels of creativity, overall (Katz and Poag, 1979). Similarly, research on divergent thinking tasks has revealed that task instruction can impact participant creativity (Kaufman, 2009). To review participant instructions and prompts, please refer to Appendix A. It should be noted that each participant received the same set of

instructions and prompts for each task.

After completion of the baseline task, participants were randomly assigned to one of four video conditions. Each video was embedded within the survey and lasted approximately two minutes. Additionally, each video contained a group of five student actors discussing solutions to an internet censorship campaign by college administrators. After participants viewed a video clip, they were asked to generate a creative solution to a University budgeting problem. This task was the primary task of interest.

Both the baseline and primary task were feasible in that all subjects could produce a written response that trained undergraduate raters could assess. Moreover, both tasks did not require special knowledge or a special set of skills. Finally, upon completion of the study participants were debriefed and thanked for their participation. Students who completed the survey received extra credit towards their final grade. Additionally, the average length of the study was 45 minutes.

Manipulation

To manipulate each experimental condition, a group of five undergraduate psychology students were videotaped in a large conference room discussing a new University policy. The policy being discussed entailed university administrators blocking students' ability to access social networking sites on all campus computers. The background information presented to participants can be viewed in Appendix B.

Benevolent group, no dissenter. The no malevolence condition expressed ideas that followed school policy in a peaceful exchange with university administrators. The plan of action included a student petition, a letter writing campaign, and a blog to raise awareness. In addition

to this, group members addressed one another in a strictly positive and accepting manner.

Malevolent group, no dissenter. The high malevolent condition attempted to stop the new policy from being implemented by employing harmful and disruptive courses of action. This groups' strategy was to hold a protest, convince students to skip their classes, and to send viruses to university administrators. The group embraced all malevolent suggestions.

Benevolent group, malevolent dissenter. The low malevolence condition generated the same ideas as the "no malevolence" condition. However, one of the five students became a dissenter and suggested a protest rather than a petition. Group members reacted to the malevolent suggestion with verbal disapproval and negative body language feedback. The final plan of action did not include the malevolent dissenter's suggestion.

Malevolent group, benevolent dissenter. The moderate malevolent condition expressed the same ideas as "high malevolence" group. However, a benevolent dissenter was present and suggested a petition rather than a protest. Group members again, reacted to the dissenter by expressing disdain for the peaceful suggestion and gave negative body language feedback. Moreover, the final plan of action did not include the benevolent dissenter's suggestion.

Manipulation Check. Participants were asked a series of questions to determine if they had perceived one of the four experimental conditions. The first set of questions sought to reveal the extent to which participants perceived a dissenter among group members. Participants were asked, "Did everyone in the video clip seem to support each others' ideas?" They were also asked to indicate a "yes" or "no" if "a student in the video disagreed with the others."

Likewise, participants were asked to determine if they had perceived a malevolent or benevolent group orientation. Specifically, participants were asked to rate the group ideas on a scale ranging from "very damaging" to "very constructive." Based upon each set of questions,

we were able to determine if participants had properly perceived each manipulation.

Measures - Dependent variables

Quality. Ghiselin (1963) suggested that it is possible to analyze the “intrinsic quality” of products objectively. To determine the quality of creative responses from the baseline and primary tasks, trained undergraduate raters quantified qualitative responses on a 5-point scale. Specifically, quality of response was assessed by how logical, complete or coherent ideas were expressed. Responses rated as high contained logical solutions with relevant characteristics to the prompt at hand. Moreover, ideas were fully and “wholly” developed.

Originality. The benchmark for originality measured the level of unexpected, elaborate, or descriptive elements in the written response. Original responses addressed the prompt in novel, imaginative, unpredictable or innovative ways. High originality scores contained elaborative and rich responses that were easy for readers to visualize, while poor originality scores were predictable and lackluster. Specifically, the measure of originality is extremely useful in distinguishing rare participant responses from unique and novel ones (Kaufman, 2009).

Malevolence. The measure of malevolence was rated in terms of destruction of property or harm towards a group or person, disruption of campus and local activity, and; the level of annoyance felt by school administrators. Harmful acts towards a person, group or property received the highest numerical scores. Similarly, high scores were given to responses that described a protest or rally detrimental to the local community or University. Likewise, acts described as “annoying” for campus administrators also yielded slightly higher numerical scores.

Malevolent creativity. The measure of malevolent creativity contained elements from all of the previously described ratings. Malevolent creativity was evidenced by original and high

quality responses with a malevolent propensity. The level of malevolent creativity in the primary task is illustrated in Figure 2. Moreover, the predictors of malevolent creativity are discussed in greater depth in the results and discussion sections of this study.

Measures - Predictors

Participants were asked to answer preliminary questions related to age, race, gender, scholastic achievement and perceptions of ones' self. Additionally, participants were asked to report their GPA, SAT verbal and SAT math scores as observable measures of intelligence and academic achievement. A comprehensive list of all covariate questions are presented in Appendix C.

Intelligence. The extent to which intelligence impacts the expression of creativity is still debated among scholars. However, intelligence theories that include creativity suggest that creativity is significantly associated with the psychometric measure of intelligence (Sternberg, 1996). Similarly, researchers have found that IQ and creativity are significantly correlated and highly applicable to this study (Sligh, Connors, & Roskos-Ewoldsen, 2005).

Creative Performance. Most measures of creative performance are assessed by asking participants to evaluate their perceived level of creative ability (Kaufman, 2009). The theoretical basis for measuring creative performance through self-assessment stems from the self-efficacy of participants. Participants that indicate high creative ability are associated with higher creative output (Bandura, 1997). This is measure is in direct regard to Hypothesis 1c.

Domain Expertise. Research strongly suggests that experience and expertise foster novel and innovative solutions (Walczyk & Griffith-Ross, 2008). Domain expertise was assessed by the extent to which participants displayed knowledge, interest or effort in the task at

hand.

Openness to experience. The Five-Factor Model of Personality describes openness to experience as being intellectually curious (Kaufman, 2009). Measures concerning this variable were assessed through the distinct categories of “openness to fantasy, aesthetics, feelings, actions, ideas and values” (Kaufman, 2009, p.85). These categories looked to reveal the extent to which a person would try new things, is unconventional, artistic, imaginative, or open-minded.

Unconventionality. The measure of unconventionality suggests a link between creative thinking and creative personalities. The impact of unconventionality in creativity is evidenced by Schuldberg (2001) who found that high creativity was associated with “behavioral eccentricities.” Such findings are relevant to identifying persons inclined to engage in malevolent forms of creativity.

Conscientiousness. George and Zhou (2001) found that people high on conscientiousness produced less creative work. Similarly, Gelade (1997) found that creativity and conscientiousness were negatively correlated. These findings are congruent with the meta-analysis by Feist (1998) who found that conscientiousness was associated with lower levels of creativity among artists and scientists alike. Thus, the measure of conscientiousness has been the least associated personality trait in creative individuals and similar findings should be seen by this study.

Extraversion. In a meta-analysis by Feist (1998), creative scientists were generally more extroverted than less-creative scientists. Similarly, extraverted artists tended to also be more creative. These findings by Feist indicate a positive relationship between the variables of extraversion and creativity, personality traits applicable to this study.

Dominance. The extent to which an individual displays dominance was seen by people

who scored high on the California Personality Inventory (CPI) Dominance scale in a study by Pratto et al. (1994). These individuals were more confident, assertive, and task oriented (Pratto et al., 1994). Such findings suggest that participants high on dominance will be less likely to succumb to peer pressure.

Agreeableness and Forgiveness. Feist (1998) found that the less good-natured and friendly scientist and artists were the more creative than their friendly and agreeable counterparts. Similarly, King et al (1996) found that agreeableness was negatively correlated to creative accomplishment. Both studies suggest that agreeableness and forgiveness may not be predictors of creativity.

Neuroticism. The measure of neuroticism helps assess an individuals' emotional stability. Research on this topic suggests a mild link between neuroticism and creative individuals. Several studies found that people diagnosed with schizophrenia, schizoid and schizotypal disorders were more creative than those without the disorder (Kaufman, 2009). Moreover, it appears that highly neurotic and introverted people score higher on fluency and creativity tests than groups containing low neuroticism and introversion (Di Scipio, 1971).

Impulse Control. Some scientific studies on emotional regulation have found that impulsivity is associated with highly creative people. Whiteside and Lynam (2001) described impulsivity as an important psychological construct that appears in some form, in every facet of personality. Similarly, impulsivity has been associated with venturesome, sensation-seeking, and extraversion. Therefore, the personality trait of impulsivity could reveal key insights into the creative and malevolently creative individual (Whiteside & Lynam, 2001).

Social Confidence. Researchers over the past four decades have been able to identify specific factors that influence the social skill development and peer acceptance of shy children

(Miller & Coll, 2007). This line of research suggests among other things, that social confidence is important in expressing ideas, gaining support, and being positively evaluated by peers. The level of acceptance for creative ideas by peers is highly applicable to this study.

Need for Cognition. A need for cognition refers to an individual's tendency to engage in, and enjoy, "effortful cognitive" endeavors (Cacioppo, Petty, & Kao, 1984). In a study by Cacioppo, Petty, and Kao (1984) need for cognition was predictive of the manner in which people dealt with tasks and social information. Thus, the need for cognition is useful in discerning one's problem solving orientation and ability to focus on complex planning.

Humor and Playfulness. Finally, a "sense of humor" is a stable personality trait rather than a one-dimensional construct. Humor researchers have conceptualized traits of humor and playfulness as ones' cognitive ability, aesthetic response, habitual behavior, and emotion-related temperament (Martin et al., 2003) important in several creative processes.

RESULTS

To quantify participant responses, undergraduate raters were given benchmark examples of originality, quality, malevolence and domain expertise. Raters were then asked to form judgments on the overall dimension of these variables on a 5-point scale. Responses rated as “poor” were given numerical scores of one or two. While, responses rated as “high” were given numerical scores of four or five.

Intercorrelations of study variables

A comprehensive list of means, standard deviations, and intercorrelations of the variables of interest are presented in Table 1. A strong correlation of .76 occurred between the dependent variables of originality and quality in the primary task of interest (Table 1). The relationship between quality and originality has been seen in a number of studies on creativity (Mumford, O'Connor, Boes, & Runco, 1997). Thus, we will refer back to this high correlation as our measure of creative ability.

Specifically, the measure of originality was significantly correlated to gender and baseline malevolence, but negatively correlated to conscientiousness. Likewise, quality of the primary task was positively correlated to self-reported SAT verbal scores and gender. Interestingly, the measures of quality and originality were negatively correlated to the presence of a dissenter.

These findings suggest that our measure of creative ability (originality and quality) is indicative of intelligence and a natural proclivity for malevolence in the overall cognitive scheme of our participants. These results can be seen in the regression analysis for originality and quality presented in Table 2 and 3, respectively.

Table 2. *Regression Analysis Results*

	Originality		
	<i>b</i>	SE	<i>p</i>
Intercept	.23	.33	.49
Domain Expertise	.52	.07	.00
Baseline Originality	.36	.05	.00
Gender	.28	.10	.01
Conscientiousness	-.16	.07	.03
Baseline Malevolence	.11	.05	.05
Dissenter vs. No Dissenter	-.23	.10	.02
Malevolence vs. Benevolence	.01	.10	.94

Note. *b* = unstandardized beta

Table 3. *Regression Analysis Results*

	Quality		
	<i>b</i>	SE	<i>p</i>
Intercept	-.93	.29	.00
Domain Expertise	.79	.05	.00
Baseline Quality	.28	.04	.00
SAT Verbal	.01	.00	.00
Gender	.17	.08	.03
Dissenter vs. No Dissenter	-.16	.08	.04
Malevolence vs. Benevolence	.01	.07	.94

Note. *b* = unstandardized beta

Hypothesis testing

In regards to the predictions made in hypothesis 1a, we postulated that malevolent creativity would be significantly correlated to creative ability (originality and quality) and a malevolent disposition. As seen in the regression analysis in Table 4, there was a relationship between overall malevolence and creative ability ($p = .03$; $b = .17$, $p < .05$).

Table 1. Means, Standard Deviations, and Intercorrelations for Study Variables

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31					
1 GPA	3.08	.52	1.00																																			
2 SAT Math	600.87	102.76	.12	1.00																																		
3 SAT Verbal	601.54	99.93	.15	.47	1.00																																	
4 Age	22.18	6.50	.10	-.14	.14	1.00																																
5 Gender	1.59	.49	.12	-.19	-.12	.04	1.00																															
6 Creative Performance	3.62	.70	.13	-.08	.00	-.14	.02	1.00																														
7 Neuroticism	2.33	.70	-.11	.01	-.01	-.10	.18	-.10	1.00																													
8 Extraversion	3.70	.73	.02	.06	-.06	-.15	.05	.29	-.45	1.00																												
9 Openness	3.79	.70	.12	.02	.19	-.01	.06	.48	-.05	.22	1.00																											
10 Agreeableness	3.76	.62	.17	.00	-.02	.12	.17	.15	-.35	.17	.23	1.00																										
11 Conscientiousness	3.48	.72	.14	-.19	-.14	.15	.21	.17	-.32	.37	.08	.32	1.00																									
12 Dominance	2.92	.72	.05	.02	-.11	-.24	-.10	.09	-.01	.25	-.15	-.52	-.06	1.00																								
13 Social Confidence	3.68	.78	.02	.09	.06	-.11	-.04	.33	-.43	.76	.32	.11	.33	.30	1.00																							
14 Achievement Striving	3.49	.79	.27	-.19	-.05	.24	.20	.25	-.33	.34	.19	.39	.85	-.15	.34	1.00																						
15 Impulse Control	3.39	.66	.11	-.15	-.08	.20	.08	.10	-.45	.27	.02	.36	.78	-.19	.26	.75	1.00																					
16 Forgiveness	3.36	.68	.08	-.09	-.01	.22	.06	.08	-.30	.05	.15	.69	.23	-.54	.03	.32	.28	1.00																				
17 Need Cognition	3.61	.64	.15	.07	.13	.03	-.07	.41	-.32	.35	.51	.18	.35	.11	.51	.43	.31	.18	1.00																			
18 Unconventionality	3.11	.71	.07	.16	.21	-.14	-.11	.28	.12	.01	.49	-.13	-.26	.11	.11	-.08	-.25	-.06	.36	1.00																		
19 Humor Playfulness	3.97	.70	.03	-.02	-.03	.04	-.09	.27	-.31	.36	.35	.38	.20	-.12	.34	.27	.18	.26	.34	.25	1.00																	
20 Sports Fan	3.61	1.13	-.08	.13	-.18	-.10	-.26	-.06	-.22	.26	-.15	.12	.16	.06	.08	.06	.17	.01	.11	-.22	.20	1.00																
21 Baseline Originality	2.73	1.24	.19	.07	.31	.31	-.02	.06	-.12	.13	.29	.09	.15	-.15	.29	.24	.17	.07	.27	.25	.26	-.09	1.00															
22 Baseline Quality	2.62	1.31	.15	.14	.28	.31	-.05	-.06	-.09	.16	.28	.12	.10	-.12	.31	.21	.13	.11	.25	.23	.29	-.02	.77	1.00														
23 Baseline Malevolence	2.35	.98	.04	.07	.16	.20	-.03	-.05	-.02	.11	.08	-.06	-.05	.12	.15	.02	-.02	-.14	.12	.12	.06	.09	.33	.31	1.00													
24 Domain Expertise	1.84	.89	.02	.15	.26	.18	-.06	-.05	.10	.07	.15	-.05	.01	-.05	.13	.02	-.02	-.04	.13	.12	.05	.04	.54	.62	.18	1.00												
25 Baseline Domain Expertise	2.16	1.04	.13	.14	.32	.25	-.05	-.10	-.08	.10	.25	.11	.08	-.19	.21	.18	.13	.08	.16	.20	.21	-.07	.72	.85	.27	.58	1.00											
26 Originality	2.19	1.07	.16	.09	.26	.30	.07	-.10	.01	.05	.18	-.05	-.01	-.07	.13	.07	-.01	.01	.18	.20	.06	-.07	.67	.64	.33	.68	.55	1.00										
27 Quality	2.20	1.14	.06	.16	.36	.24	.00	-.07	-.01	.11	.18	-.02	.03	-.06	.22	.08	.03	.02	.15	.17	.12	-.02	.60	.74	.24	.85	.63	.76	1.00									
28 Malevolence	2.37	1.04	.01	.12	.30	.15	-.13	.06	-.05	.12	.25	-.09	-.04	.07	.23	-.02	-.07	-.07	.32	.20	.18	-.03	.47	.47	.36	.34	.36	.47	.43	1.00								
29 Malevolent Creativity	2.28	.89	.08	.15	.37	.25	-.05	-.02	-.03	.12	.26	-.07	-.02	.00	.24	.03	-.04	-.03	.29	.23	.17	-.05	.67	.70	.38	.67	.57	.82	.80	.86	1.00							
30 Dissenter vs. No Dissenter	.58	.50	-.05	-.01	-.14	.00	-.01	.06	-.06	-.01	-.08	-.01	-.03	.10	.03	-.06	.04	-.08	.10	-.04	.04	-.03	-.10	-.10	-.06	-.15	-.06	-.22	-.21	-.04	-.16	1.00						
31 Malevolence vs. Benevolence	.47	.50	.13	.03	-.05	-.01	.04	-.10	.03	-.19	-.05	.14	-.07	-.16	-.19	-.07	-.03	.19	-.06	-.08	-.01	.01	-.02	-.05	-.08	-.08	-.04	-.03	-.06	-.13	-.11	-.05	1.00					

Note. Correlations are significant at $p < .05$

Table 4. *Regression Analysis Results*

	Malevolence		
	<i>b</i>	SE	<i>p</i>
Intercept	.58	.41	.16
Baseline Quality	.17	.08	.03
Baseline Malevolence	.18	.07	.01
Need for Cognition	.45	.11	.00
Achievement Striving	-.34	.09	.00
Baseline Originality	.17	.08	.03
Dissenter vs. No Dissenter	.19	.17	.29
Malevolence vs. Benevolence	.08	.19	.66
Malevolence x Benevolence	-.53	.25	.04

Note. *b* = unstandardized beta

Similarly, we postulated in hypothesis 2a that malevolently creative individuals would be low on impulse control and high on need for cognition, traits of both a malevolent and creative person, respectively. To directly assess this, a regression analysis for malevolent creativity (Table 5) revealed a positive relationship for malevolent creativity and need for cognition ($p = .01$; $b = .19$, $p < .05$). Likewise, high impulse control and malevolent creativity were negatively correlated ($p = .01$; $b = -.17$, $p < .05$). These findings suggest that impulsivity or low impulse control, and need for cognition are in fact components of malevolent creativity.

Moreover, support for hypothesis 1c can be observed between self-reported SAT verbal scores and malevolent creativity. We predicted that malevolently creative individuals would be higher in intelligence a strong predictor of creative performance. Specifically, a significant correlation was observed at ($p = .05$; $b = .00$, $p < .05$) for

malevolent creativity and intelligence (SAT verbal score) in Table 5. However, there was a negative relationship observed in Table 1 between malevolent creativity and self-assessed creative performance ($p = -.02$; $M = 3.62$, $SE = .70$). This relationship does not support the literature for the self-efficacy of creative performance in high creative output (Bandura, 1997; Kaufmann, 2009).

Table 5. Regression Analysis Results

	Malevolent Creativity		
	<i>b</i>	SE	<i>p</i>
Intercept	-.01	.37	.99
Baseline Quality	.17	.05	.00
Domain Expertise	.34	.06	.00
Baseline Malevolence	.12	.04	.00
Baseline Originality	.14	.05	.01
SAT Verbal	.00	.00	.05
Need for Cognition	.19	.07	.01
Impulse Control	-.17	.06	.01
Dissenter vs. No Dissenter	.05	.11	.66
Malevolence vs. Benevolence	.09	.12	.48
Malevolence x Benevolence	-.29	.16	.07

Note. *b* = unstandardized beta

We predicted in hypothesis 2a that malevolent creativity would be most acute in groups characterized by malevolence. In the regression analysis for malevolent creativity (Table 5), an interaction between malevolent and benevolent groups ($p = .07$; $b = -.29$, $p < .05$) was observed. To further investigate this interaction, a two-way interaction for malevolence (Figure 1) and malevolent creativity (Figure 2) was conducted.

Figure 1. Two-way interaction – Malevolence.

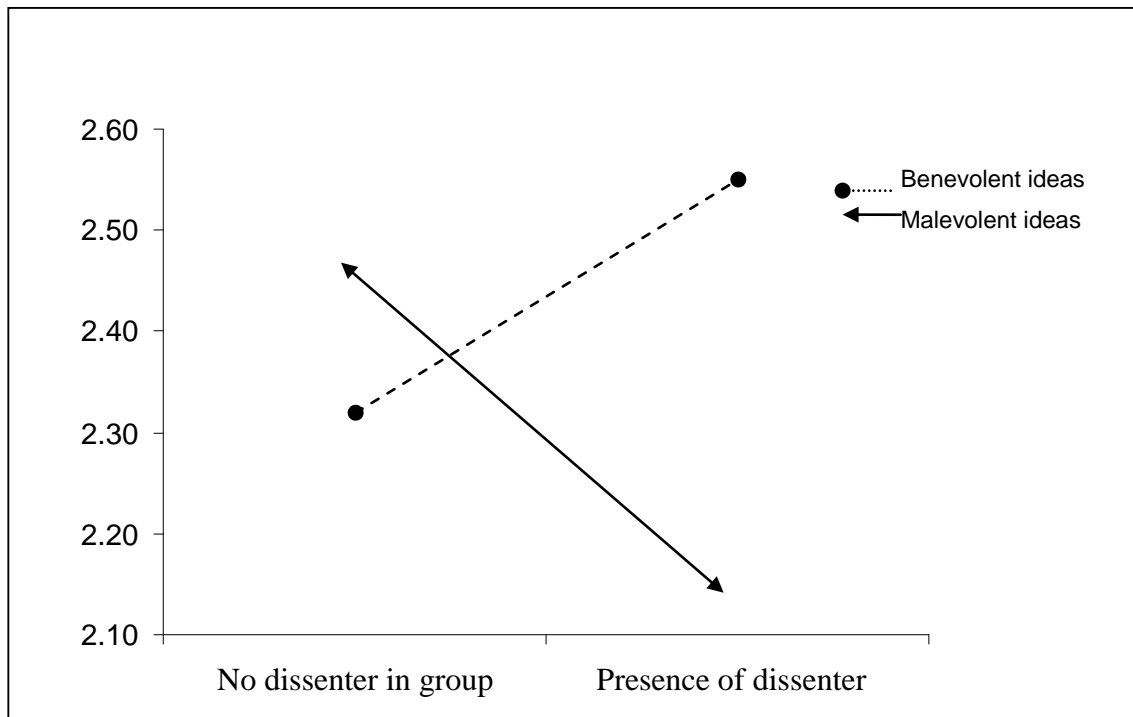
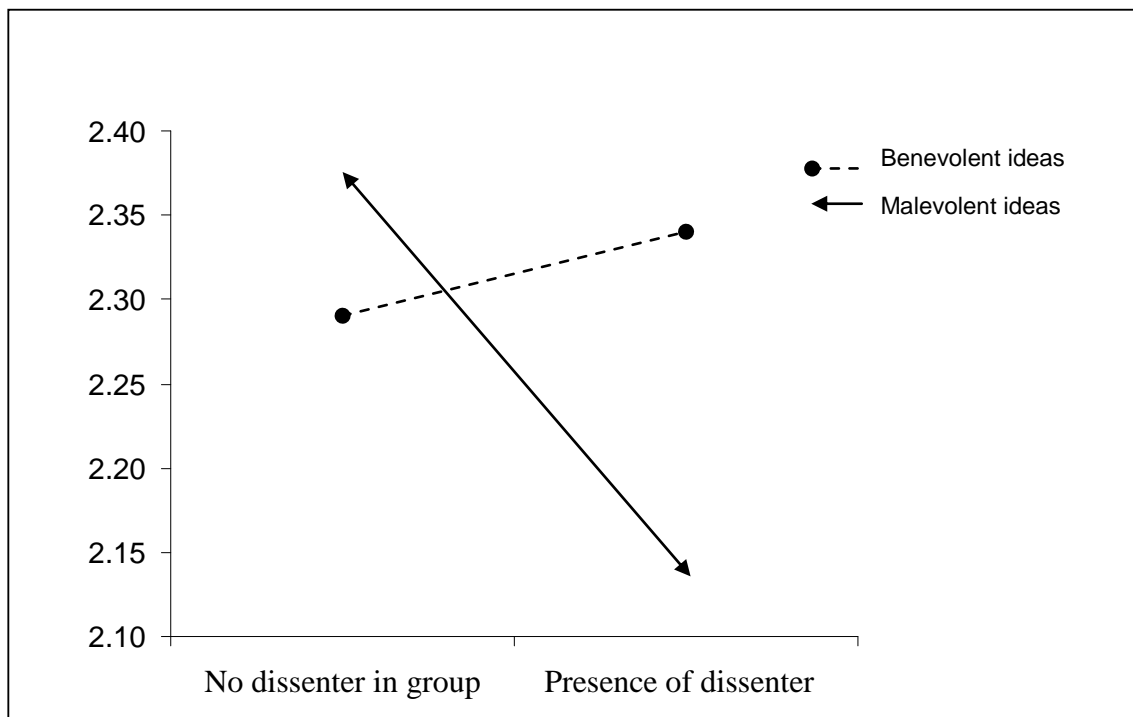


Figure 2. Two-way interaction – Malevolent creativity.



As one would intuitively assume, the most malevolent creativity was seen by participants that viewed a purely malevolent group ($M = 2.38, SE = .09$). This is illustrated by the solid line in Figure 2. However, the most malevolence was seen by participants exposed to the “moderate malevolent” condition which contained a malevolent dissenter in an otherwise benevolent group ($M = 2.55, SE = .11$). This trend can be referred to by the dotted line in Figure 1. Specifically, these findings support hypothesis 2a. As predicted, malevolent creativity increased if participants exposed to malevolent groups (solid line) or malevolent peer modeling.

In regards to hypothesis 2b, we predicted that malevolent creativity would deteriorate in peer groups characterized by benevolence. In this regard, overall malevolence and malevolent creativity did decrease in participants exposed to a group characterized by benevolence. However, participants exposed to the purely malevolent and benevolent group conditions were not significantly different, statistically.

Moreover, in regards to hypothesis 2b, we predicted the least amount of malevolence and malevolent creativity in participants exposed to benevolent peer modeling. In this respect, hypothesis 2b was fully supported. The least amount of malevolence ($M = 2.13, SE = .12$) and malevolent creativity ($M = 2.14, SE = .08$) was seen in participants exposed to a benevolent peer dissenter. These findings can be referenced in Figure 1 and 2, respectively.

Finally, these findings fully support both hypothesis 1 and hypothesis 2. Peer groups with a malevolent role model were more malevolent and displayed more malevolent creativity. Similarly, benevolent peer modeling decreased the overall expression of malevolence *and* malevolent creativity. However, it should be noted that

our sample had a natural proclivity towards malevolence and malevolent creativity. This is evidenced by the cluster of means at the higher ends of Figures 1 and 2, respectively. Moreover, in regards to malevolent creativity, participants that viewed a benevolent group with a malevolent dissenter (low malevolent condition) displayed almost the same level of malevolent creativity as participants that viewed the purely malevolent condition, counterintuitive to our initial hypotheses.

DISCUSSION

The objective of this study was to understand the key personality traits and situations that best facilitate malevolent forms of creativity. As a result, this study makes two primary contributions to research on malevolent creativity. First, this study highlights the personality traits found to be predictive of malevolently creative people. Specifically, the most malevolent creativity was seen in participants low on impulse control and high on need for cognition.

Researchers within the field of creativity have tried to determine if creativity is contingent upon a unique set of traits or is universal to us all. The implications of finding the personality trait of impulsivity as predictive of malevolent creativity, suggests that there are distinct personality traits for the malevolently creative individual. Moreover, the findings of this study fully support hypothesis 1. Individuals with a strong need for cognition coupled with low impulse control can be reasonably predicted as individuals more inclined to engage in malevolent creativity.

The results of this study suggest that individuals more likely to engage in malevolent creativity are intelligent, have a need for cognition, and possess some creative ability. Given the appropriate situation, these personality traits may describe individuals' central to innovative criminal or terroristic acts.

However, we do not suggest that the personality traits reported in the literature for creative people be removed from descriptors of malevolently creative people. Rather, the personality traits found in this study as predictors of malevolent creativity illustrate that malevolent forms of creativity are distinct and independent from, benevolent creativity.

The second contribution this study makes is in regards to group interactions which yield higher incidences of malevolent creativity. Overall, the most malevolent creativity was seen by participants exposed to a purely malevolent group. However, there was not a significant statistical difference between individuals exposed to a “purely” malevolent group, and a benevolent group containing a malevolent influence. These findings suggest that malevolent creativity is strongly impacted by social influences.

As one would intuitively assume, social interactions that best facilitate malevolent creativity emphasize malevolent ideas. This assumption is supported by the findings of this study. Specifically, the regression analysis and two-way interaction for malevolent creativity illustrates the importance of peer modeling in fostering malevolence and malevolently creative outcomes. Furthermore, eliciting malevolence and malevolent creativity through peer modeling is consistent with the peer pressure and group conformity studies by Asche (1951, 1956) as previously described.

The impact of social pressure and the pressure to conform best underscores the social situations which enhanced malevolent creativity in this study. Malevolent creativity was enhanced by the presence of a malevolent influence and thwarted by the presence of benevolent influence. In this regard, the findings of this study fully support hypothesis 2 which predicted that malevolent forms of creativity would be highest in groups characterized by malevolence and at the behest of a malevolent contemporary.

Limitations

Although this study makes several contributions to the study of malevolent creativity, there are important limitations that should be kept in mind. First, this study

utilized a student sample with a mean age of 22. Therefore, the generalizability of these findings to other contexts may be limited by the minimal range of diversity of this sample. Similarly, this study took place in an on-line environment. The virtual nature of this study also limits our ability to generalize these findings to other contexts. Finally, the relatively short period of time used to investigate these phenomena should be taken into consideration as a limitation of this study. In this regard, future research should examine malevolent creativity in a more longitudinal fashion containing a more diverse group of participants in a more controlled environment.

Future Research

It appears that the qualities described as indicative of creative individuals depends upon the type of creativity being emphasized. The personality traits of “need for cognition” and impulsivity illustrate the need to further distinguish between malevolent and benevolent forms of creativity. Moreover, research investigating the malevolently creative individual may help to identify and deter individuals prone to exploiting the creative process. Finally, further use of social pressure and group conformity theory in creativity research may provide important insights into the social situations that best facilitate malevolent creativity.

Concluding Remarks

Creativity researchers have found that creativity does not reside solely within the individual but arises from activities where collaboration is necessary (Fischer, et al., 2005). Understanding how creativity can be enhanced or frustrated is dependent upon the

social context in which people are collaborating. The predictors of malevolent creativity found in this study demonstrate the importance of personality, and social interactions in a malevolent creative process. This study found that intelligent individuals, who possess the previously described personality traits of impulsivity and need for cognition, produced the most malevolent creativity when exposed to malevolent contemporaries. As evidenced by countless studies in the field of social psychology, peer modeling *did* increase the expression of malevolent behaviors and overall malevolent creativity. Combined, these findings may be useful in conceptualizing the more destructive and darker side of the creative process. Finally, these findings may help to further delineate malevolent from benevolent forms of creativity.

REFERENCES

- Adarves-Yorno, I., Postmes, T., & Haslam, S.A. (2007). Creative innovation or crazy irrelevance? The contribution of group norms and social identity to creative behavior. *Journal of Experimental Social Psychology, 43*, 410–416.
- Akinola, M. & Mendes, W.B. (2008). The dark Side of creativity: Biological Vulnerability and Negative Emotions Lead to greater Artistic Creativity. *Pers Soc Psychology Bulletin, 34*, 1677-1686.
- Alonso, A.A. (1996). Personality and Creativity. *Person. Individ. Diff., 21*, 959-969.
- Amabile, T. M. (1983). The social psychology of creativity: A componential conceptualization. *Journal of personality and social psychology, 45*, 357.
- Amabile, T. M. (1988). A model of creativity and innovation in organizations. *Research in organizational behavior, 10*, 123-167.
- Amabile, T.M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. *Academy of Management Journal, 1154-1184*.
- Amabile, T.M., Goldfarb, P. & Brackfield, S. (1990). Social influences on creativity: Evaluation, coaction, and surveillance. *Creativity Research Journal, 3*, 6-21.
- Amabile, T.M., & Gryskiewicz, n.D. (1989). The creative environment scales: Work environment inventory. *Creativity Research Journal, 2*, 231-253.
- Anderson, N. & Gasteiger, R.M. (2007). Helping Creativity and Innovation Thrive in Organizations: Functional and Dysfunctional Perspectives. In J. Langan-Fox, C.L. Cooper, & R.J. Klimoski (Eds.) *Research Companion to the Dysfunctional Workplace: Management Challenges and Symptoms* (pp.422-440). Cheltenham: Edward Elgar Publishing.

- Aronson, E., Wilson, T.D., & Akert, R.M. (2007). *Social Psychology, 6th edition*. Upper Saddle River, NJ: Pearson Prentice Hall.
- Asche, S.E. (1951). Effects of group pressure upon the modification and distortion of judgements. *Group, Leadership and Men, 27*, 177.
- Asche, S.E. (1956). Studies of Independence and Conformity: I. A Minority of One Against a Unanimous Majority. *Psychological Monographs, 70(416)*.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Basadur, M. (2004). Leading others to think innovatively together: Creative leadership. *The Leadership Quarterly, 15*, 103-121.
- Bonnardela, N., & Marmècheb, E. (2005). Towards supporting evocation processes in creative design: A cognitive approach. *Int. J. Human-Computer Studies, 63*, 422–435.
- Burleson, W. (2005). Developing creativity, motivation, and self-actualization with learning systems. *Int. J. Human-Computer Studies, 63*, 436–451.
- Cacioppo, J.T., Petty, R.E., & Kao, C.F. (1984). The efficient assessment of need for cognition. *Journal of Personality Assessment, 48*, 306-307.
- Carson, P. O., & Carson, E. D. (1993). Managing creativity enhancement through goal-setting and feedback. *Journal of Applied Psychology, 27*, 36-45.
- Clark, K., & James, K. (1999). Justice and positive and negative creativity. *Creativity Research Journal, 12*, 211-226.
- Cropley, D., Kaufman, J., & Cropley, A. (2008). Malevolent creativity: A functional model of creativity in terrorism and crime. *Creativity Research Journal, 20*, 105-115.

- Cropley, D., Kaufman, J., & Cropley, A. (2008). Rejoinder to commentaries on Malevolent creativity: A functional model of creativity in terrorism and crime. *Creativity Research Journal*, 20, 134-136.
- Csikszentmihalyi, M., & Sawyer, K. (1995). Creative insight: the social dimension of a solitary moment. In: Sternberg, R.J., & Davidson, J.E. (Eds.), *The Nature of Insight* (pp. 329–364). Cambridge, MA: MIT Press.
- Damanpour, F. (1991). Organizational innovation: A meta-analysis of effects of determinants and moderators. *Academy of Management Journal*, 34, 555-590.
- Dewett, T. (2004). Employee creativity and the role of risk. *European Journal of Innovation Management*, 7, 257-266.
- DiPietro, W.R., & Anoruo, E. (2006). Creativity, innovation, and export performance. *Journal of Policy Modeling*, 28, 133–139.
- Dollinger, S.J. (2007). Creativity and conservatism. *Personality and Individual Differences*, 43, 1025–1035.
- Edmonds, E.A., Weakley, A., Candy, L., Fell, M., Knott, R., & Pauletto, S. (2005). The studio as laboratory: Combining creative practice and digital technology research. *Int. J. Human-Computer Studies*, 63, 452–481.
- Edmondson, A. (1999). Psychological safety and learning behavior in work teams. *Administrative Science Quarterly*, 44, 350-383.
- Eisenman, R. (2008). Malevolent Creativity in Criminals. *Creativity Research Journal*, 20, 116-119.
- Feist, G.J. (1998). A Meta-Analysis of Personality in Scientific and Artistic Creativity. *Personality and Social Psychology Review*, 2, 290-309.

- Fischer, G., Giaccardia, E., Edena, H., Sugimotob, M., & Yea, Y. (2005). Beyond binary choices: Integrating individual and social creativity. *Int. J. Human-Computer Studies*, 63, 482–512.
- Furnham, A., & Bachtiar, V. (2008). Personality and intelligence as predictors of creativity. *Personality and Individual Differences*, 45, 613–617.
- George, J.M. & Zhou, J. (2001). When openness to experience and conscientiousness are related to creative behavior: An interactional approach. *Journal of Applied Psychology*, 86, 513-524.
- Gelade, G. (1997). Creativity in conflict: the Personality of the Commercial Creative. *Journal of Genetic Psychology*, 165, 67-78.
- Gilson, L.L., & Shalley, C.E. (2004). A Little Creativity Goes a Long Way: A Examination of Teams' Engagement in Creative Processes. *Journal of Management*, 30, 453–470.
- Glaveanu, V.P. (2010). Paradigms in the study of creativity: Introducing the perspective of cultural psychology. *New Ideas in Psychology*, 28, 79–93.
- Guilford, J.P., 1950. Creativity. *American Psychologist*, 5, 444–454.
- Hewett, T.T. (2005). Informing the design of computer-based environments to support creativity. *Int. J. Human-Computer Studies*, 63, 383–409.
- Hunter, S. T., Bedell-Avers, K. E., & Mumford, M. D. (2007). Climate for creativity: A quantitative review. *Creativity Research Journal*, 19, 69-90.
- Hunter, S. T., Thoroughgood, C., Myers, A., & Ligon, G. S. (in press). Managing the paradoxes of leading for innovation. *Psychology of Aesthetics, Creativity, and the Arts – Special issue: Innovation in Organizations*.

- Hunter, S. T., Bedell, K. E., & Mumford, M. D. (2006). Dimensions of creative climate. A general taxonomy. *International Journal of Creativity and Problem Solving*, 15, 97-116.
- Hunter, S. T., Friedrich, T. L., Bedell, K. E., & Mumford, M. D. (2006). Creative thought in real world innovation. *Serbian Journal of Management*, 1, 29-39.
- Iglesias, F. (2010). Creativity, Mental Illness and Crime. *International Social Science Review*, 85, 64.
- James, K., Brodersen, M. & Eisenberg, J. (2004). Workplace Affect and Workplace Creativity: A Review and Preliminary Model. *Human Performance*, 17, 169-194.
- James, K., Clark, K., & Cropanzano, R. (1999). Positive and negative creativity in groups, institutions, and organizations: A model and theoretical extension. *Creativity Research Journal*, 12, 211-226.
- James, K., & Drown, D. (2008). Whether “malevolent” or “negative,” creativity is relevant to terrorism prevention: Lessons from 9/11 and hazardous material trucking. *Creativity Research Journal*, 20, 120-127.
- Kaufman, J. C. (2009). *Creativity 101*. New York: Springer Publishing Company.
- King, L.A., Mckee-Walker, L., & Broyles, S.J. (1996). Creativity and the five factor model. *Journal of Research in Personality*, 30, 189-203.
- Madjar, N. (2005). The Contributions of Different Groups of Individuals to Employees Creativity. *Advances in Developing Human Resources*, 7, 182-206.
- Martin, R.A., Puhlik-Doris, P. Larsen, G. Gray, J. & Weir, k. (2003). *Journal of Research in Personality*, 37, 48-75.
- McCrae, R.R., & Costa, P.T. (1985). Comparison of EPI and psychoticism scales with

- measures of the five-factor model personality. *Person. Individ. Diff.*, 6, 587-597.
- Miller, S.R. & Coll, E. (2007). From Social Withdrawal to Social Confidence: Evidence for Possible Pathways. *Curr Psychol*, 26, 86-101.
- Mumford, M. D. (2000). Managing creative people: strategies and tactics for innovation. *Human Resource Management Review*, 10, 313-351.
- Mumford, M. D., & Baughman, W. A. (1996.) Process-based measures of creative problem-solving skills: I. Problem construction. *Creativity Research Journal*, 9, 63-76.
- Mumford, M.D., Connelly, M.S., Baughman, W.A., & Marks, M.A. (1994). Creativity and problem solving: cognition, adaptability, and wisdom. *Roeper Review*, 16, 241-246.
- Mumford, M. D., Connelly, M. S., & Gaddis, B. (2003). How creative leaders think: Experimental findings and cases. *Leadership Quarterly*, 14, 411-432.
- Mumford, M.D., & Licuanan, B. (2001). Leading for innovation: Conclusions, issues, and directions. *The Leadership Quarterly*, 15, 163-171.
- Mumford, M. D., & Hunter, S. T. (2005). Innovation in organizations: A multi-level perspective on creativity. In F. J. Yammarino & F. Dansereau (Eds.), *Research in multi-level issues: Volume IV* (pp.11- 74). Oxford, England: Elsevier.
- Mumford, M., Hunter, S. T., Eubanks, D., Bedell, K., & Murphy, S. (2007). Developing leaders for creative efforts: A domain-based approach to leadership development. *Human Resource Management Review*, 17, 402-417.
- Mumford, M. D., Mobley, M. I., Uhlman, C. E., Reiter-Pamon, R., & Doares, L. (1991). Process analytic models of creative capacities. *Creativity Research Journal*, 4, 91-

122.

- Mumford, M. D., Scott, G.M., Gladdis, B. Strange, J.M. (2002). Leading creative people: Orchestrating expertise and relationships. *The Leadership Quarterly*, 13, 705-750.
- Nelson, T.D. (2006). *The psychology of prejudice*. Boston: Pearson Education.
- Nemiro, J. (2001). Connection in creative virtual teams. *Journal of Behavioral and Applied Management*, 3, 92-112.
- Nernet, C. J., & Staw, B. M. (1989). The tradeoffs of social control and innovation in groups and organizations. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (pp. 195- 230). Palo Alto, CA: Annual Reviews.
- Paulus, P.B., & Yang, H. (2000). Idea Generation in Groups: A Basis for Creativity in Organizations. *Organizational Behavior and Human Decision Processes*, 82, 76–87.
- Perry-Smith, J.E., & Shalley, C.E. (2003). The Social Side of Creativity: A Static and Dynamic Social Network Perspective. *The Academy of Management Review*, 28, 89-106.
- Pratto, F., Sidanius, J., Stallworth, L.M., & Malle, B.F. (1994). Social dominance orientation a personality variable predicting social and political attitudes. *Journal of Personality & Social Psychology*, 67, 741-763.
- Raven, B. H. (1974). The comparative analysis of power and power preferences. In J. T. Tedeschi (Ed.), *Perspectives on social power* (pp. 172-197). Chicago: Aldine.
- Reiter-Palmon, R., & Illies, J.J. (2004). Leadership and creativity: Understanding leadership from a creative problem-solving perspective. *The Leadership Quarterly*, 15, 55-77.

- Runco, M. A., & Nemiro, J. (2003). Creativity in the moral domain: Integration and implications. *Creativity Research Journal*, *15*, 91-105.
- Selker, T. (2005). Fostering motivation and creativity for computer users. *Int. J. Human-Computer Studies*, *63*, 410–421.
- Shaffer, D.R. (2009). *Social and Personality Development*. Belmont, CA: Wadsworth Cengage Learning.
- Shalley, C. E. (1991). Effects of productivity goals, creativity goals, and personal discretion on individual creativity. *Journal of Applied Psychology*, *76*, 179-185.
- Shalley, C.E., & Gilson, L.L. (2004). What leaders need to know: A review of social and contextual factors that can foster or hinder creativity. *The Leadership Quarterly*, *15*, 33–53.
- Shalley, C.E., Zhou, J., & Oldham, G.R. (2004). The Effects of Personal and Contextual Characteristics on Creativity: Where Should We Go From Here? *Journal of Management*, *30*, 933-958.
- Sligh, A.C. Connors, F.A. & Roskos-Ewoldsen, B. (2005). Relation of creativity to fluid and crystallized intelligence. *Journal of Creative Behavior*, *39*, 123-136.
- Spooner, M.T. (2008). Commentary on Malevolent Creativity. *Creativity Research Journal*, *20*, 128-129.
- Sternberg, R.J. (1996). *Successful Intelligence*. New York: Simon & Schuster.
- Sternberg, R. J., & O’Hara, L. A. (1999). Creativity and intelligence. In R. J. Sternberg (Ed.), *Handbook of creativity* (pp. 251–272). New York: Cambridge University Press.
- Sternberg, R.J. (2005). Creativity or creativities? *Int. J. Human-Computer Studies*, *63*, 370–382.

Stout, C.E. (2002). *The Psychology of Terrorism, Volume One, A Public Understanding.*

Westport, CT: Praeger.

Viswesvaran, C., & Ones, D.S. (2000). Measurement error in “Big five Factors”

personality assessment reliability generalization across studies and measures.

Educational and Psychological Measurement, 60, 224-235.

Wai, J. Lubinski, d. & Benbow, C.P. (2005). Creativity and Occupational

accomplishments among intellectually precocious youth: An age 13 to age 33

longitudinal study. *Journal of Educational Psychology, 97*, 484-492.

Walczyk, J.J., & Griffith-Ross, D. (2008). Commentary on the Functional Creativity

Model: Its Application to Understanding Innovative Deception. *Creativity*

Research J., 20, 130-133.

Walczyk, J.J., Runco, M.A., Tripp, S.M., & Smith, C.E. (2008). The Creativity of Lying:

Divergent Thinking and Ideational Correlates of the Resolution of Social

Dilemmas. *Creativity Research Journal, 20*, 328-342.

West, M. A. (2002). Sparkling fountains or stagnant ponds: An integrative model of

creativity and innovation implementation in work groups. *Applied Psychology: An*

International Review, 51, 355–387.

Westwood, R., Low, D.R. (2003). The Multicultural Muse: Culture, Creativity and

Innovation. *International Journal of Cross Cultural Management, 3*, 235-259

Whiteside, S.P., & Lynam, D.R. (2001). The five factor model and impulsivity: using a

structural model of personality to understand impulsivity. *Personality and*

Individual Differences, 30, 669-689.

Widiger, T.A., & Trull, T.J. (1997). Assessment of the Five-Factor Model of Personality.

Journal of Personality, 68, 228-250.

Yamamoto, Y., & Nakakoji, K. (2005). Interaction design of tools for fostering creativity in the early stages of information design. *Int. J. Human-Computer Studies*, 63, 513–535.

APPENDIX A: Task Scripts

Baseline Task:

This is a creativity task. Please take a few moments to read the excerpt below and the corresponding directions before responding.

Imagine that you and several of your friends have just picked up a copy of the Daily Collegian and the front page article reads:

“The United Health Foundation recently listed Pennsylvania as one of the most obese states in the country during 2009. In response to this rise in obesity, Pennsylvania representatives have decided to enlist school districts, colleges and universities in their effort to combat obesity.

At the collegiate level, school representatives want to eliminate junk food on college campuses by ending their partnership with the fast-food industry. This means that fast food chains would no longer be able to set-up restaurants on college campuses or in college cafeterias.

‘I don't believe you can really be neutral given the situation’ said Congressman White of the Pennsylvania Senate, ‘You're either promoting healthy habits or you're not.’ And, Penn State officials agree.

Penn State administrators have announced that they want students to eat better by replacing the current fast food chains in the HUB with ‘healthier and smarter food choices’ than the ones currently offered...”

After reading this front page excerpt, your friends decide that they want you to create a plan of action that will grab the Media's attention. You and your friends want Penn State officials and the State College Community to know that students disagree with this new policy.

Starting only with the funds and resources of you and your friends, please be as creative as possible in describing the things you would do to gain the Media's attention, in an attempt to change the University's mind about imposing this new policy on students.

Primary Task:

This is a creativity task. Please take a few moments to read the excerpt below and the corresponding directions before responding.

Imagine that you and several of your friends have just picked up a copy of the Daily Collegian and the front page article reads:

“After extending the Blue Loop and White Loop hours of operation into the wee hours of the morning on Friday and Saturday nights, school officials are starting to complain about the added cost.

In an effort to decrease annual University expenses, Penn State officials are strongly advocating that students be required to pay a bus fee as part of their tuition costs.

This fee would link student’s ID cards to CATA’s bus services and would require students to swipe their ID cards before riding all campus buses.

If this new tuition bus fee is implemented, students will be paying for a service that the University has always provided...”

After reading this front page excerpt, your friends decide that they want you to create a plan of action that will grab the Media’s attention. You and your friends want Penn State officials and the State College Community to know that students disagree with this new policy.

Starting only with the funds and resources of you and your friends, please be as creative as possible in describing the things you would do to gain the Media’s attention, in an attempt to change the University’s mind about imposing this new policy on students.

APPENDIX B: Manipulation Background

The video clip you are about to watch involves a group of students discussing a new Penn State policy that is being implemented in an effort to increase student productivity while on campus. Penn State administrators have decided to block students' ability to access social networking sites; i.e. Facebook, Myspace, and Twitter from all on-campus computers. Furthermore, access to these sites is not only limited on campus computers in libraries and labs, but also in student living commons and dorm rooms.

APPENDIX C: Covariates

DEMOGRAPHIC INFORMATION:

1. Please list your current GPA:
2. Please list your SAT math score:
3. Please list your SAT verbal score:
4. Please indicate your gender:
5. Please list your age:
6. Please select your major (from a comprehensive scroll down menu):

How would you rate your creative performance using the following scale:

Never Rarely Sometimes Often Always

---1-----2-----3-----4-----5---

CREATIVE PERFORMANCE:

1. Demonstrates originality in my work.
2. Tries out new ideas and approaches to problems.
3. Identifies opportunities for new products/processes.
4. Generates novel, but operable work-related ideas.

Please indicate your level of agreement as to how characteristic the following items are of YOU.

Disagree Somewhat disagree Moderately Agree Somewhat agree Agree

---1-----2-----3-----4-----5---

NEUROTICISM (Alpha = .86):

1. Often feel blue.
2. Dislike myself.
3. Am often down in the dumps.
4. Have frequent mood swings.
5. Panic easily.
6. Rarely get irritated.
7. Seldom feel blue.
8. Feel comfortable with myself.
9. Am not easily bothered by things.
10. Am very pleased with myself.

EXTRAVERSION (Alpha = .86):

1. Feel comfortable around people.
2. Make friends easily.
3. Am skilled in handling social situations.
4. Am the life of the party.
5. Know how to captivate people.
6. Have little to say.
7. Keep in the background.
8. Would describe my experiences as somewhat dull.

9. Don't like to draw attention to myself.
10. Don't talk a lot.

OPENNESS TO EXPERIENCE (Alpha = .82):

1. Believe in the importance of art.
2. Have a vivid imagination.
3. Tend to vote for liberal political candidates.
4. Carry the conversation to a higher level.
5. Enjoy hearing new ideas.
6. Am not interested in abstract ideas.
7. Do not like art.
8. Avoid philosophical discussions.
9. Do not enjoy going to art museums.
10. Tend to vote for conservative political candidates.

AGREEABLENESS (Alpha = .77):

1. Say nice things about everyone.
2. Believe that others have good intentions.
3. Respect others.
4. Accept people as they are.
5. Make people feel at ease.
6. Have a sharp tongue.
7. Cut others to pieces.
8. Suspect hidden motives in others.
9. Get back at others.
10. Insult people.

CONSCIENTIOUSNESS (Alpha = .81):

1. Am always prepared.
2. Pay attention to details.
3. Get chores done right away.
4. Carry out my plans.
5. Make plans and stick to them.
6. Waste my time.
7. Find it difficult to get down to work.
8. Do just enough work to get by.
9. Don't see things through.
10. Shirk my duties.

DOMINANCE (Narcissism Alpha = .82):

1. Try to surpass others' accomplishments.
2. Try to outdo others.
3. Am quick to correct others.
4. Impose my will on others.
5. Demand explanations from others.
6. Want to control the conversation.

7. Am not afraid of providing criticism.
8. Challenge others' points of view.
9. Lay down the law to others.
10. Put people under pressure.
11. Hate to seem pushy.

SOCIAL-CONFIDENC:

1. Feel comfortable around people.
2. Don't mind being the center of attention.
3. Am good at making impromptu speeches.
4. Express myself easily.
5. Have a natural talent for influencing people.
6. Hate being the center of attention.
7. Lack the talent for influencing people.
8. Often feel uncomfortable around others.
9. Don't like to draw attention to myself.
10. Have little to say.

ACHIEVEMENT-STRIVING:

1. Do more than what's expected of me.
2. Accomplish a lot of work.
3. Excel in what I do.
4. Plunge into tasks with all my heart.
5. Do a lot in my spare time.
6. Do just enough work to get by.
7. Hang around doing nothing.
8. Shirk my duties.
9. Find it difficult to get down to work.
10. Need a push to get started.

IMPULSE CONTROL (Alpha = .78):

1. Am able to control my cravings.
2. Easily resist temptations.
3. Carry out my plans.
4. Follow through with my plans.
5. Rarely overindulge.
6. Don't know why I do some of the things I do.
7. Habitually blow my chances.
8. Make a mess of things.
9. Waste my time.
10. Do things I later regret.

FORGIVNESS (Alpha = .78):

1. Love my enemies.
2. Try to forgive and forget.
3. Am inclined to forgive others.

4. Am nice to people I should be angry at.
5. Find it hard to forgive others.
6. Hold a grudge.
7. Get back at people who insult me.
8. Get even with others.
9. Distrust people.
10. Feel that most people can't be trusted.

NEED FOR COGNITION (Alpha = .84):

1. Like to solve complex problems.
2. Need things explained only once.
3. Can handle a lot of information.
4. Love to think up new ways of doing things.
5. Am quick to understand things.
6. Love to read challenging material.
7. Have difficulty understanding abstract ideas.
8. Try to avoid complex people.
9. Avoid difficult reading material.
10. Avoid philosophical discussions.

UNCONVENTIONALITY (Alpha = .84):

1. Am considered to be kind of eccentric.
2. Know that my ideas sometimes surprise people.
3. Do things that others find strange.
4. Rebel against authority.
5. Swim against the current.
6. Would hate to be considered odd or strange.
7. Enjoy being thought of as a normal "mainstream" person.
8. Like to be viewed as proper and conventional.
9. Like to be thought of as a normal kind of person.
10. Try to avoid complex people.

HUMOR/PLAYFULNESS (Alpha = .84):

1. Try to tease my friends out of their gloomy moods.
2. Use laughter to brighten the days of others.
3. Try to have fun in all kinds of situations.
4. Try to add some humor to whatever I do.
5. Keep my sense of humor even in gloomy situations.
6. Have a great sense of humor.
7. Am not known for my sense of humor.
8. Am not fun to be with.
9. Do not go out of my way to make others smile or laugh.

Curriculum Vita

Christin Marie Tripi
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Education:

2010 (expected) **The Pennsylvania State University - University Park**
University Honors in Psychology
Thesis Adviser: Dr. Samuel Hunter
Major: Psychology (BS)
Option: Neuroscience

Academic Honors and Grants:

2010 **Schreyer Honors College Enrichment Grant**
Recipient of Schreyer Enrichment grant for pursuit of
undergraduate research interests. Awarded, \$750.

2009 **Schreyer Honors College Ambassador Grant**
Recipient of Schreyer Ambassador grant for medical Internship in
Madurai, India. Awarded, \$1000.

2008 - present **Schreyer Honors College Scholar**
Inducted into The Pennsylvania State University Honors College.

2006 - present **Dean's List**
Awarded Dean's recognition for a 3.5 or above in an academic
semester.

Research Presentations:

2010 **Tripi, C.M., & Hunter, S.T** (October, 2010). *The Effects of
Personality and Modeling of Behaviors in Malevolent Creativity*.
Poster submitted to the Western Psychological Association
Conference in Los Angeles.

2010 **Tripi, C.M., Pappas, E., Sanders, K., & Masters, K.M.** (April,
2010). *Guest Compound Chemistry: Octaacetate Capsular
Cavitand*. Poster presented at The Pennsylvania State Department
of Chemistry Undergraduate Symposium.

Research Experience:

- 2010 **Honors Thesis**
 The Pennsylvania State Department of Psychology
 Honors thesis involved all phases of the research process under the direction of Dr. Samuel Hunter. Thesis examined malevolent creativity in 173 participants. Research facilitated a framework for understanding how the malevolent and creative person, converge.
- 2010 **Research Assistant**
 The Pennsylvania State Department of Management and Organization. Research Assistant in team dynamic and leadership study. Participated as a “Confederate” under the direction of Dr. Stephen Humphrey.
- 2009 - present **Undergraduate Lab Coordinator**
 The Pennsylvania State Department of Industrial/Organization (I/O) Psychology. Research assistant in the Leadership and Innovation lab under the direction of Dr. Samuel Hunter. Promoted to undergraduate Lab Coordinator, Spring 2010. Duties included, but are not limited to, weekly meetings, piloting studies, training and scheduling of undergraduates, running research experiments, data collection, and data coding. Additionally, lead and co-lead several research projects.
- 2009 **Honors Research Methods Project**
 The Pennsylvania State University Department of Psychology
 Research project examined attitudes toward “closure of opportunity” for convicted drug offenders under the direction of Dr. Theresa Vescio.

Internships and Summer Programs:

- 2009 **Medical Internship in Madurai, India**
 Summer internship at the Saravanna Hospital and Leprosy Clinic. Duties at hospital and clinic included observation of morning rounds, general consultations, administering intramuscular and intravenous injections, surgical observation, and; assistance in Laparoscopy, Hysterectomy, and Kidney Stone Removal procedures.
- 2007 **Study Abroad at the University of Northampton, England**
 Program included courses in Globalization, Terrorism, and International Relations, and Popular Culture.

2005-2006 **Internship with Marriage Family Therapist**
 Yearling observation of private and group clinical sessions, under the direction of Ellen Seeley (M.F.T).

Campus Leadership:

2009 **Schreyer Honors College Orientation Mentor**
 Welcome week mentor for incoming freshmen scholars. Assisted in creating, and implementing, programs that facilitated a sense of community among new Schreyer scholars.

2007-2008 **Student Government Association Senator**
 Responsibilities included voting on monetary allocation issues for on-campus clubs and organizations, and; enhancing the social and intellectual life of students by representing student opinions to the members and faculty of student government.

2007-2008 **Diversity Committee Senator**
 Responsibilities included planning, promoting, raising funds and writing proposals for "Rally on the Hill," a \$10,000 event to promote campus tolerance and diversity. Largest nonprofit student organized event to be held at Penn State Behrend branch campus.

2007-2008 **Student Affairs Committee Senator**
 Responsibilities included working towards implementation of student run radio, weekend transportation to areas of interest for on-campus residents, and course information being accessible in real-time during student enrollment.

Campus Involvement:

2010 **Global Public Health Brigade**
 Global Brigades is currently the world's largest student-run global health and sustainable development organization. The goal of this chapter is to improve everyday health conditions in Honduras. As a group, we will travel to rural Honduras over the holiday break.

2010 **Primary Care Day at Hersey Medical Center**
 Invited by The Pennsylvania State, College of Medicine, to spend the day with Dean Simons of Medical Education and Dean Davis of Student Affairs at the Hersey Medical Center.

2010 **Girl Scout Workshop Volunteer**
 Workshop encouraged young woman to learn more about science related fields by participating in science orientated activities to earn their "Math, Maps, and More" Girl Scout badge.

- 2009 **PNC Leadership Assessment Center**
Participated in a leadership development and assessment program, that mimicked the challenges and decisions that leaders face in a wide variety of organizations. Through program participation, a personalized plan to improve and strength leadership development was created.
- 2009-present **Women of Grace**
A weekly bible study group hosted by the Catholic Campus Ministry.
- 2008-present **Psi Chi - Penn State Chapter**
National Honors Society in Psychology, bimonthly meetings that focus on current research and study in Psychology related fields. Attended local conventions held by psychological association.
- 2008-2006 **National Society of Collegiate Scholars - Penn State Chapter**
Promoted and raised funds for THON, the largest student run philanthropy in the nation in an effort to conquer childhood cancer.

Professional Associations:

Psi Chi National Honors Society (Student Affiliate)
National Society of Collegiate Scholars (Student Affiliate)
Pennsylvania State Blue and White Society (Student Affiliate)
Catholic Campus Ministry (Eucharistic Minister)

Technical Skills:

- Microsoft Office: Adobe, Excel, PowerPoint, Word.
- Statistical and Survey programs: SPSS, SurveyMonkey, Qualtrics.
- Databases: ProQuest, PsycARTICLES, PsycINFO, PubMed.