

FRENZY: A PSYCHOLOGICAL DISTANCE  
ACCOUNT OF RUMINATION, MOOD, AND  
CREATIVITY

By

CHRISTOPHER THOMAS COPELAND

Bachelor of Arts in English  
The University of Oklahoma  
Norman, Oklahoma  
2004

Master of Arts in Experimental Psychology  
The University of Central Oklahoma  
Edmond, Oklahoma  
2008

Master of Science in Educational Psychology  
Oklahoma State University  
Stillwater, Oklahoma  
2011

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CREATIVITY

Dissertation Approved:

Dr. Sue C. Jacobs

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Dissertation Chair

Dr. Steve Harrist

---

Dissertation Adviser

Dr. Donald Boswell

---

Dr. YoonJung Cho

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Dr. Shelia Kennison

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The Second World War and family circumstances prevented my grandfather's wish for a university degree. He built and painted homes for a living, and I wince when thinking about how sore his arms and shoulders must have been from all those hours of holding an outstretched brush. Somehow, physical exhaustion never diminished his intellectual energy. After long days spent outdoors in unforgiving Oklahoma seasons, he read into late evenings about politics, history, and literature. He was fond of asking questions about whatever I was learning in elementary school. I imagine that if he had known how his curiosity would inspire my own lifetime of study, he would have told me how lucky I would be to someday write a dissertation and how lucky he would be to read it.

*For Andrew Thomas Stevenson*

Name: CHRISTOPHER THOMAS COPELAND

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Abstract: A reflective style of ruminative response to negative mood, as opposed to a brooding style, is linked to creativity (Verhaeghen, Joormann, & Aikman, 2014), especially when indecision is high (Cohen & Ferrari, 2010). In order to examine potential links between creativity and styles of ruminative response to positive mood (Feldman, Joormann, & Johnson, 2007), I adapted the Ruminative Responses Scale (RRS; Nolen-Hoeksema & Morrow, 1991)—a widely used measure of negative mood responses—to address positive mood responses (Positive Rumination Scale; PRS). Following tenets of psychological self-distance theory (Ayduk and Kross, 2008), I characterized Reflection and Brooding styles of negative mood response on the RRS as self-distant and self-immersed, respectively, and I characterized Interpreting and Basking (Martin & Tesser, 1996) styles of positive mood response on the PRS as self-distant and self-immersed, respectively. Whereas previous researchers found that a self-distanced response to negative mood predicts creativity, only a self-immersed response to positive mood predicted creativity when indecision was high in the present sample.

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## CHAPTER I

### JOURNAL ARTICLE MANUSCRIPT

Friederich Nietzsche (1889/1977) described emotion as an essential source of creative energy, noting that “if there is to be any aesthetic doing and seeing, one condition is indispensable: frenzy” (p. 517). Creative writers and artists have often described their frenzy in in gloomy terms. In a letter to his wife, Francis Scott Fitzgerald (1940/2002) remarked upon his curious loss of creative ability in the absence of sadness: “It’s odd that my old talent for the short story vanished. ...Part of it was somehow tied up with you and me—the happy ending” (p. 373). The dark side of creativity (Akinola & Mendes, 2008; Cropley, Cropley, Kaufman, & Runco, 2010) is supported by research indicating greater incidences of mood disorders (Andreasen, 1987; Jamison, 1993; Ludwig 1995; Kaufman, 2001; Verhaeghen, Joormann, & Kahn, 2005), psychoticism (Eysenck, 1993), distractibility (Takeuchi et al., 2011), substance abuse, suicide (Ludwig, 1994), negative personality traits or tendencies such as narcissism (Feist, 1998), and dishonesty (Silvia, Kaufman, Reiter-Palmon, Wigert, 2011) among highly creative people. A few theorists have attributed these higher incidences to factors extrinsic to the creative process or

person (Rhodes, 1961) by speculating that creative professionals may be depressed because they tend to have less money, social support, and prestige (Weisberg, 2006) or because they believe, like Fitzgerald, they must fulfill a tortured stereotype to be successful (Kaufman, Bromley, & Cole, 2006; Plucker, Beghetto, & Dow, 2004).

### **Negative Mood and Creativity**

Kaufman and Baer (2002) speculated that poets suffer higher rates of depression because heightened sensitivity to negative emotions is characteristic of literary works (Olsen, 1998) and disordered thinking among people with depressive symptomology (Nolen-Hoeksema, Larson, & Grayson, 1999). Nolen-Hoeksema and her colleagues labeled this sort of disordered thinking (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008) *depressive rumination* and defined it as “a mode of responding to distress that involves repetitively and passively focusing on symptoms of distress and on the possible causes and consequences of these symptoms” (p. 400). According to response styles theory (RST; Nolen-Hoeksema, 1987), people are more likely to become depressed if they passively focus on the self when responding to negative moods. Nolen-Hoeksema and Morrow’s (1991) Ruminative Responses Scale (RRS), a measure of ruminative response to negative mood, was later revised to include reflection and brooding rumination styles (Treyner, Gonzalez, and Nolen-Hoeksema, 2003). Based on their analysis of RRS items, Treyner and her colleagues described the Reflection factor as suggestive of “purposeful turning inward to engage in cognitive problem solving to alleviate one’s depressive symptoms,” and they described the Brooding factor as suggestive of “passive comparison of one’s current situation with some unachieved standard” (p. 256). They called for future theoretical refinement to account for these

rumination style differences. Since the terms *brooding* and *reflection* for rumination styles represent a conflation of emotion and cognition, an underlying cognitive construct is needed in order for theorists to disentangle the links between them.

Brooding and Reflection styles have differentially predicted creativity in a few studies. Verhaeghen, Joormann, and Khan (2005) found that greater Reflection scores were related to past and current depressive symptomology, creative interest, and creative fluency, originality, and elaboration. Since they found no direct link between current or past depressive symptomology and creativity, the authors concluded that rumination accounted for the relationship. In a follow-up to this study inclusive of Brooding scores, Verhaeghen, Joormann, and Aikman (2014) found that Brooding was linked only with dysphoria while Reflection was only linked with creativity. Cohen and Ferrari (2010) found that greater Reflection scores predicted greater creativity scores on the Runco Ideational Behavior Scale (Runco, Plucker, & Lim, 2001), especially in the presence of greater indecision scores on Mann's (1982) Decisional Procrastination Scale (DP). RST does not yet account for how a reflective style facilitates creativity or if similar processes are present when people ruminate in response to positive moods.

### **Positive Mood and Creativity**

Although there are few research studies on positive rumination (Feldman, Joormann, & Johnson, 2007), psychological accounts from other lines of inquiry into mood and creativity are not always so dark. A brighter side of creativity is characterized by social savvy (Sternberg & Lubart, 1991) and positive mood (Isen, Daubman, & Nowicki, 2004; Isen, 2008). Several experimental studies have demonstrated beneficial effects for induced positive moods on creativity indicators such as increased cognitive



flexibility (Ashby, Isen, & Turken, 1999; Fredrickson & Branigan, 2005; Murray, Sujan, Hirt, & Sujan, 1990; Mumford, 2003). Bright side advocates also attend to positive correlations between creative production and likeable personality traits such as Openness to Experience (Strong et al., 2007). Findings from investigations such as these led Isen (2008) to conclude that positive moods prompt greater “creative problem solving and innovation, as well as both efficiency and thoroughness in decision making and...improved thinking, especially where tasks are complex” (p. 549).

Theorists have attributed mixed mood-creativity findings to different creativity outcomes measures, to the activation or arousal level of mood states, and to the time at which mood effects are measured (Akinola & Mendes, 2008; De Dreu, Baas, & Nijstad, 2008). Concerning outcome measures, researchers have demonstrated greater cognitive flexibility when people experience positive mood (Isen, Daubman, & Nowicki, 2004) and greater originality when people experience negative mood (Rietzschel, Nijstad, & Stroebe, 2007). Concerning activation-states, De Dreu, Baas, and Nijstad (2008) found that activating positive and negative mood states (e.g., “angry, fearful, happy, elated”) predicted creative fluency and originality while deactivating mood states (e.g., “sad, depressed, relaxed, serene”) did not (p. 739). They used these results to support their dual pathway to creativity model, a central tenet of which is that positive and negative moods facilitate creativity through different pathways. Concerning time course, researchers have demonstrated early adaptive effects for positive mood and later adaptive effects for negative mood (Kaufmann & Vosburg, 2002). RST accounts for whether a negative mood state is likely to become activating or deactivating over time since RST explains depressive symptoms as a consequence of passive self-focus. And although RST was

originally intended to predict risk for depressive episode relapses, increased theoretical focus on cognitive processes that facilitate activation states may help RST researchers more accurately predict the likelihood of future activation states for positive mood, as well.

### **Psychological Self-Distance**

While previous researchers characterized rumination styles according to differences in attention (i.e., self-focus for Brooding versus problem-solving focus for Reflection) and activation (i.e., passive Brooding versus active Reflection; Treynor et al., 2003), a construal level theory (CLT; Trope & Liberman, 2010) account of psychological self-distance provides a novel way of generalizing rumination style differences within and between mood valences in a way that maintains interdependent links rather than confluences between mood and cognition. Psychological self-distance may denote imagined or real distance between self and objects or other people (social distance) in time (temporal distance), or space (spatial distance). High-level construals are considered psychologically self-distant because abstract ideas do not call to mind specific people, times, or locations. In contrast, low-level construals are considered self-immersed because they are concrete and call to mind particular people, times, or locations. According to CLT, psychological distances in one domain are likely to elicit similar distances in other domains. In their illustration, Trope and Liberman (2010) used the idea of “having fun” as a high-level construal and “playing basketball outside” as a low-level construal (p. 442). Because the thought “playing basketball outside” is more likely to bring to mind specific locations and people with whom one might play, it is

more likely to induce thoughts that are psychologically close such as a specific basketball courtyard in one's own neighborhood and friends who live nearby.

Ayduk and Kross (2010) induced a self-distanced perspective by instructing participants to imaginatively re-experience an emotionally distressing event from the perspective of a "fly on a wall" in contrast to a self-immersed, or first-person perspective (p. 809). They found that a self-distanced perspective was associated with less emotional reactivity, as measured by cardiovascular activity and self-report, immediately after participants imagined a distressing event and up to seven weeks later. Kross and Ayduk (2008) found that participants who focused on negative memories from a self-distanced perspective were more likely to make meaning of their negative experiences while participants who focused on negative memories from self-immersed perspective were more likely to recount negative experiences.

Spatially oriented psychological distance accounts between self and object are similar to some qualitative researchers' descriptions of the artistic, creative process. For example, Reinders (1991) used the term *distance-engagement paradox* to denote a common feeling among artists that the creative process is characterized by a pattern of alternation between feelings of distance versus engagement with creative products. In their phenomenological investigation of artists' experience of the creative process, Nelson and Rawlings (2007) described an engaged, "intuitive" stage, characterized by "momentum, pleasure, and ease," and a subsequent, distanced "draining" stage where artists consider their artwork's relevance and meaning (p. 235). The distance-engagement

or distance-immersion characterization is akin to authors' maxim to "write drunk, edit sober" (DeVries, 1964).

### **Purpose and Hypotheses**

In the present investigation, I addressed the lack of research on ruminative response to positive mood and need for RST refinement in light of rumination style differences within and across mood states. In order to extend RST beyond negative mood responses, I characterized ruminative mood responses as a function of self-distance (self-immersed versus self-distant) for both positive and negative mood states (Ayduk & Kross, 2010). I referred to a reflective rumination style as a self-distanced mode of response since this style has been described as an active, problem-solving approach that predicts reduced emotional responsiveness. I referred to a brooding rumination style as a self-immersed mode of response since this style has been described as a passive, self-focused response that predicts increased emotional responsiveness (Treyner et al., 2003). The self-distance construct clarifies style differences as a function of a cognitive process while previous terms for rumination styles like *brooding*, for instance, conflate mood and cognition rather than explaining how a brooding style is mutually exclusive from and interdependent with mood.

In addition to offering a theoretical clarification of RST by synthesizing theories of rumination and psychological distance, I tested negative and positive ruminative response style influences on creativity as a function of self-distant and self-immersed psychological distances as well as moderating effects of indecision. I replicated Cohen and Ferrari's (2010) moderation analysis in order to test the first hypothesis that a reflective (self-distant) style of negative rumination would predict creativity in the

presence of high levels of indecision. I explored interpreting (self-distant) versus basking (self-immersed) positive rumination styles to test the second hypothesis that a self-immersed style of positive rumination would predict creativity in the presence of low amounts of indecision. Martin and Tesser (1996) originally introduced *basking* as a way of ruminatively responding to positive moods. The second hypothesis was informed by the dual-pathway to creativity model (De Dreu, Baas, & Nijstad, 2008). De Dreu and his colleagues argue that creativity is facilitated by positive and negative moods through different pathways. Failure to demonstrate greater creativity for a self-immersed style of positive rumination would provide disconfirming evidence of the dual-pathway to creativity model in terms of psychological distance. On the other hand, a demonstration of facilitative effects for a self-immersed positive rumination style would add knowledge to exploratory body of work on positive rumination, and it would support use of the dual-pathway to creativity model and construal-level theory in characterizations of rumination style differences.

## **Methods**

### **Participants and Procedure**

Ninety participants—most of whom were female ( $n = 70$ ), Caucasian ( $n = 70$ ) students enrolled at a large, midwestern university—were included in analyses after removal of two cases based on study completion time. One of the removed cases was a statistical outlier on time ( $X = 5,322$  seconds,  $Z = 8.24$ ) and the other case's completion time was too short to be considered logically valid ( $X = 18$  seconds). After case removal, participants completed the 55-item survey study in about 490 seconds on average ( $SD = 287.13$ ).

The Institutional Review Board for the Protection of Human Subjects (IRB) at the university where this study was conducted approved the design and procedures of the current investigation. University students were recruited from the participant pool operated by the College of Education. Students were offered extra credit in their courses in return for participation. All surveys were administered online. Upon clicking at link to the study website, participants were presented with a brief description of the study along with the primary investigator's contact information. Participants were also presented with descriptions of the voluntary nature, the limited risks, and the benefits of participation. After clicking a link denoting their informed consent, participants were presented with demographic questions and psychometric questionnaires. The indecision, ruminative response to negative mood, and creativity scales were the same as those used by Cohen and Ferrari (2010).

### **Psychometric Scales**

**Indecision.** The Decisional Procrastination Scale (DP; Mann, 1982), based on Janis and Mann's (1977) social psychological theory of decision-making, is designed to measure patterns of coping with decisional conflict. The reliability and validity of the DP has been established in several studies of procrastination with internal reliabilities ranging from .72 to .80 and test-retest reliabilities over the course of 1 month ranging from .62 to .69 (Beswick et al., 1988; Mann, 1982; see Ferrari, Johnson, & McCown, 1995 for review). Previous investigators found positive correlations ranging from .29 to .42 for DP scores with measures of impatience, academic procrastination, locus of control, and absentmindedness. They found negative correlations ranging from -.23 to -.46 for DP scores with measures of non-competitiveness and low self-esteem (Beswick et

al., 1988; Effert & Ferrari, 1989; For a review, see Ferrari, Johnson, & McCown, 1995).

The DP consists of five indecision items (e.g., “I don’t make decisions unless I really have to”) that participants rank on a 5-point Likert-type scale (1 = *not true for me*; 5 = *true for me*). Cronbach’s alpha for Cohen and Ferrari’s (2010) sample was .89. In the current sample, Cronbach’s alpha was .72.

**Negative Rumination.** Overall, The RRS has acceptable consistency and convergent validity (Butler & Nolen-Hoeksema, 1994; Nolen-Hoeksema & Morrow, 1991) and is reliable over time (Nolen-Hoeksema & Davis, 1999). The RRS has been successfully used to predict likelihood and duration of depressive episode relapses (see Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008 for an in-depth review of reliability and validity findings). The Brooding (RRS-B) and Reflection (RRS-R) subscales of the Ruminative Responses Scale (RRS; Nolen-Hoeksema & Morrow, 1991) each consist of five, 4-point Likert-type scale items (1 = *almost never*; 4 = *almost always*). Treynor, Gonzalez, and Nolen-Hoeksema (2003) factor-derived the Reflection and Brooding scales in a psychometric study of the RRS (Treynor, Gonzalez, & Nolen-Hoeksema, 2003). They reported that internal reliability coefficients for RRS-R and RRS-B were expectedly low (Cronbach’s alphas were .72 and .77, respectively) since each scale only has five items. They noted that increasing the number of items per scale to 10 would yield an expected coefficient alpha of .85. The test-retest reliability coefficients for two administrations twelve months apart were questionable ( $r = .60$  and  $.62$ , respectively). Cohen and Ferrari (2010) found acceptable internal reliability coefficients for RRS-R and RRS-B in their sample (Cronbach’s alphas were .79 and .81, respectively). I characterized RRS-B items as indicative of a self-immersed rumination style (e.g., “Think

about a recent situation, wishing it had gone better”) and RRS-R items as indicative of a self-distanced rumination style (e.g., “Go someplace alone to think about your feelings”). Cronbach’s alphas for the current sample were .81 and .75 for the RRS-B and RRS-R, respectively.

**Positive Rumination.** While a positive rumination scale, the Responses to Positive Affect Scale (RPA; Feldman, Joormann, & Johnson, 2007), has been developed with intent to measure ruminative response to positive mood, it was not intended to mirror the two RRS subscales on a shared, cognitive construct. Because I hypothesized that a similar cognitive construct, psychological self-distance, would exert opposite creativity influences for positive and negative rumination, I adapted RRS items to address positive mood responses on a positive rumination scale (PRS). Since Cohen and Ferrari (2010) found that the self-distanced RRS items predicted creativity when participants responded to negative moods, I hypothesized the opposite for positive mood response: that the PRS would capture two positive mood responses and that the self-immersed items would predict creativity. The PRS Basking (PRS-B) and Interpreting (PRS-I) items were intended to parallel the RRS Brooding and Reflection scales, respectively. Participants are instructed to indicate how they generally respond to positive mood. A Basking example item is, “think, ‘I am proud of my actions.’” An Interpreting example item is, “analyze your personality to try to understand why you are happy.” Like the RRS, PRS items are endorsed according to a 4-point Likert scale (1 = *almost never*; 4 = *almost always*). Cronbach’s alphas in the current sample were .78 and .85 for PRS-B and PRS-I, respectively.



**Creativity.** The Runco Ideational Behavior Scale (RIBS; Runco, Plucker, & Lim, 2001) is a unidimensional, 23-item, 4-point Likert-scale measure of ideas as products of original, divergent, and creative thinking (1 = *never*; 5 = *very often*). Runco et al. (2001) reported excellent internal reliability (Cronbach's alphas were .92 and .91) and noted that their instrument was independent of grade point average ( $r = .106$ ) and creative attitudes ( $r = .32$  and  $.34$ ). Items address divergent thinking as the number of ideas (e.g., "I come up with a lot of ideas and solutions") and originality as rarity of ideas (e.g., "I have many wild ideas"). Cronbach's alpha was .93 in Cohen and Ferrari's (2010) sample and in the current sample.

## Results

### Preliminary Analysis

The first hypothesis—that greater Reflection (RRS-R scores) would predict greater creativity (RIBS scores), especially in the presence of greater indecision (DP scores)—was based on Cohen and Ferrari's (2010) moderation analysis. Their procedure adhered to Baron and Kenny's (1986) stipulation that the moderating variable must relate to the predictor variable but not the criterion. Preliminary results for the present sample did not meet Baron and Kenny's standards. The moderation variable, DP, was not significantly related to the focal variable, RRS-R, for the current sample ( $r = -.02$ ,  $p > .876$ ; see Table A2). Although women ( $M = 12.01$ ,  $SD = 3.71$ ) tended to score higher on RRS-R than men ( $M = 10.65$ ,  $SD = 2.43$ ), average RRS-R scores by gender were not significantly different after correcting for a violation of the assumption of homogeneity of variance for the general linear model,  $t(46.95) = -1.94$ ,  $p = .058$ . There was also no

significant difference between average Brooding (RRS-B) scores for men ( $M = 11.25$ ,  $SD = 2.95$ ) and women ( $M = 11.89$ ,  $SD = 3.69$ ),  $t(88) = -.71$ ,  $p = .481$ . The limited number of male participants in the current sample may account for failure to replicate significantly greater RRS-R and RRS-B scores for women than for men as found in a previous investigation (Treynor et al., 2003). RRS-R and RRS-I scores were positively related ( $r = .33$ ,  $p = .002$ ), and suggest the possibility of a general tendency to respond to moods from a self-distanced perspective, regardless of mood valence. However, a general tendency to respond from a self-immersed perspective across mood states does not hold since RRS-B and PRS-B were not significantly related ( $r = -.20$ ,  $p = .074$ ). Problematically, within-mood response styles were significantly and positively related for positive mood ( $r = .60$ ,  $p = .002$ ) and negative mood ( $r = .62$ ,  $p < .001$ ), suggesting that response styles were not structurally independent for the current sample.

### **Negative Rumination**

After mean-centering all variables, I explored seven effects in a regression equation for negative rumination styles: three conditional effects (RRS-R, RRS-B, and DP), all possible two-way interactions, and one three-way interaction (see Table A3). Examination of residuals did not suggest violations of the general linear model. In a significant model,  $R^2 = .28$ ,  $F(7, 82) = 4.50$ ,  $p < .001$ , higher Indecision scores predicted lower RIBS scores ( $\beta = -.05$ ,  $t = -2.23$ ,  $p < .028$ ).

### **Positive Rumination**

After mean-centering all variables, I tested seven effects for variables in a regression equation for positive rumination styles: three conditional effects (PRS-B, PRS-I, and DP), all possible two-way interactions, and one three-way interaction (see Table

A4). In a significant model,  $R^2 = .24$ ,  $F(7, 82) = 3.66$ ,  $p = .002$ , the interaction of PRS-B  $\times$  DP was significant ( $\beta = .38$ ,  $t = 3.22$ ,  $p = .002$ ). In a reduced, significant model with PRS-B, DP, and their interaction,  $F(3,86) = 2.82$ ,  $p = .044$ ,  $R^2 = .09$ , the interaction effect remained significant ( $\beta = .24$ ,  $t = 2.28$ ,  $p = .025$ ). A simple slopes test (Aiken & West, 1991) for post-hoc analysis of the significant interaction effect indicated that PRS-B scores predicted greater RIBS scores when DP scores were high,  $t(89) = 2.64$ ,  $p = .010$ , and that PRS-B scores did not predict RIBS scores when DP scores were low,  $t(89) = -.70$ ,  $p = .487$  (see Figure A1). I used the Johnson-Neyman technique (Johnson & Neyman, 1936; Bauer & Curran, 2005) to find that the conditional effect for PRS-B on RIBS was statistically significant ( $\alpha = .05$ ) when the average DP score was equal to or greater than 13.59 (uncentered).

## Discussion

Cohen and Ferrari's (2010) findings were not replicated in the present investigation as reflective style of ruminative response to negative mood did not predict greater creativity. Furthermore, higher indecision scores predicted lower creativity scores, and there were no moderating effects for indecision. There is no readily apparent account for these mixed findings since the studies do not seem to meaningfully differ with regard to psychometric measures or their online means of administration to participant samples with relatively similar demographic characteristics. The present sample was composed of more female participants who were younger than Cohen and Ferrari's sample of 85 participants (57 female participants,  $M$  age = 32.95,  $SD = 12.23$ ). Although previous investigators found that women scored higher on Reflection and Brooding scales (Treyner et al., 2003), the limited number of male participants in the

current sample may have contributed a failure to replicate significant gender differences for Reflection or Brooding. However, female ( $M = 12.01$ ,  $SD = 3.71$ ) students scored higher than male students ( $M = 10.65$ ,  $SD = 2.43$ ) on the Reflection scale,  $t(46.95) = 1.94$ ,  $p = .058$ . Female students' ( $M = 11.89$ ,  $SD = 3.69$ ) and male students' ( $M = 11.25$ ,  $SD = 2.95$ ) Brooding scores were roughly equal,  $t(88) = 0.71$ ,  $p = .481$ .

Although age-related differences in self-referential thought have been demonstrated in previous functional magnetic resonance imaging (fMRI) studies (Mitchell, Raye, Ebner, Tubridy, Frankel, & Johnson, 2009), the participants in the current study are not substantially younger than Cohen and Ferrari's participant sample. Nonetheless, age-related differences in self-referential thought cannot be definitively ruled out. Furthermore, age-related differences in divergent thinking have been found for aspects of divergent thinking—an important RIBS component. Reese, Lee, Cohen, and Pucket (2001) found that middle-aged adults, 40- to 50-years-old, scored higher than on measures of fluency, flexibility, and originality.

Mixed findings may be attributable to differences in higher education experience or to differences in religiosity. Most participants in the current sample were attending a university where many students espouse Christian Evangelical religious beliefs. Cohen and Ferrari's sample of participants were college graduates who were recruited by students enrolled in courses at a Catholic university. Frederick and Embry-Riddle (2001) Mormons scored higher on measures of religiosity and lower on measures of religious creative thought than non-Mormon Christians. Their findings demonstrate the possibility that religious affiliation may affect creativity.

Results partially supported the second hypothesis that a self-immersed ruminative response to positive mood would predict creativity in the presence of low levels of indecision. In the current sample, high levels of indecision moderated the relationship between positive rumination and creativity such that self-immersed positive rumination predicted creativity when indecision was high. Due to the exploratory nature of this study and lack of theoretical explanations for the effects of procrastination on creativity, future studies are indicated to examine how indecision may benefit a self-immersed response to positive mood if the results of this study are replicated in the future. For positive mood responses, it may be the case that indecision is adaptive insofar as it allows more time for the incorporation of new ideas into a person's reservoir of problem-solving strategies—as Weisberg (1983) and Cohen and Ferrari (2010) suggested. It could also be the case that indecision facilitates creativity when people bask in positive moods by reducing risk for impulsive and anti-social behaviors or manic episode relapses (Rybakowski & Klonowska, 2011).

Guastello and his colleagues (Guastello, Guastello, & Hanson, 2004) argued that emotional intelligence provides a “counterweight against mood disorders in enhancing creative production” based on their analysis of creativity measures for participants with a history of receiving treatment for a mood disorder (p. 260). They found a link between a history of mood disorder and creativity, and they found greater emotional intelligence and ideational fluency for participants who had completed treatment as compared to participants who were still in treatment. Other investigators have concluded that emotional dampening of positive moods may be a learned defensive response for reducing recurrence of manic episodes for participants with a history of bipolar disorder

(Gruber, Eidelman, Johnson, Smith, & Harvey, 2011). Perhaps decisional procrastination limits negative effects of positive moods by allowing more time for emotional regulation strategies such as emotional dampening to occur.

### **Limitations**

Several threats to the validity of this study should be considered. While the RIBS, RRS, and DP scales have demonstrated adequate reliability and validity, the psychometric integrity of the PRS has not been fully demonstrated. This limitation is mitigated by its basis on the RRS and demonstration of a facilitative effect for a self-immersed positive rumination style in directions that support the dual pathway to creativity model and construal-level theory (Trope & Liberman, 2010). Given the questionable accuracy of self-report (Nisbett & Wilson, 1977), the relatively homogenous demographic characteristics of the present sample, and the restrictions of confidence in conclusions about causal relations in research designs without experimental manipulations, future studies with behavioral measures, more diverse participant samples, and experimental manipulations are indicated to increase confidence in conclusions about the results of this study. It should be noted that participants have been unlikely to overestimate their creative abilities on popular self-report scales as evidenced by the fact that scores on creativity self-report surveys tend to gather on the low end of distributions (Silvia, Wigert, Reiter-Palmon, & Kaufman, 2011). Future psychometric analyses of PRS items are suggested.

### **Conclusions**

Despite limitations to design and instrumentation, this preliminary exploration of rumination styles support conclusions that a self-immersed response to positive mood

predicted creativity when indecision was also high. Moreover, the PRS captured positive rumination style differences in the current sample in the same way that the RRS captured negative rumination style differences in previous samples. These conclusions are relevant for Treynor's, Gonzalez's, and Nolen-Hoeksema's (2003) call for further RST refinement in two important ways. First, the present investigation offers descriptions of rumination styles in the context of self-distance and thereby clarifies previous conflation of mood and cognition. Second, the present investigation offers a test of a self-distance account for rumination style differences that extend beyond previous researchers' and clinicians' preoccupations with negative mood responses. These findings lend support to the idea that self-distance is operant across mood valences.

The present investigation has practical implications for mental health clinicians, as well. While theorists initially used rumination research to predict and explain risk for depressive episode relapses for people with a history of depression, therapists used rumination research to inform prevention strategies. *Mindfulness-Based Cognitive Therapy for Depression* (MBCT; Segal, Williams, & Teasdale, 2013) is an empirically validated treatment (American Psychological Association Task Force on Evidence-Based Practice, 2006) explicitly based on deterring passive rumination on the self and depressive symptomology. Segal and his colleagues wrote that Nolen-Hoeksema's rumination research reveals that people with higher risk for depressive episode relapses "respond to low mood by acting in ways that focus attention on themselves, while others do things that take their minds away from themselves" (p. 32). In part, they use Nolen-Hoeksema's work to inform mindfulness practices as a distraction technique. Findings from the present study contribute to MBCT by illustrating benefits of thinking about the

self from a self-distanced perspective rather than a distraction from the self. From a self-distanced point-of-view, the self may be attended to in the context of meaning, beliefs, and values. Furthermore, MBCT practitioners may benefit from encouraging self-immersion as an adaptive response to positive moods that may decrease likelihood of depressive episode relapse even further. A two-pronged approach in this way may have an additive effect for reducing risk for depression through avoidance or dampening of negative emotional arousal heightening of positive emotional arousal (Martin & Tesser, 1996; Ayduk & Kross, 2008).

Present findings may inform expressive writing interventions intended to improve mental and physical wellness. In an expressive writing task where participants were asked to write about past trauma, Pennebaker and Graybeal (2001) found a weak link between use of emotion words and improved health, but they found that use of cognitive words was a strong predictor. Cognitive words were causal (e.g., “because”) or insightful (e.g., “realize”; p. 91-92) and may suggest a self-distanced rumination style indicative of abstraction and interpretation. Perhaps opposite effects would be found for participants who are asked to write about positive memories—with greater benefits for writers who use more emotion words from a self-immersed, first-person perspective. F. Scott Fitzgerald may have been glad to know that self-immersion into his own happy ending could revive his old creative talent better than his self-distancing suspicions and interpretations.



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Appendix: Tables and Figure

Table A1

*Sample Demographic Characteristics (N = 90)*

Characteristic	<i>n</i>	%
<b>Gender</b>		
Female	70	78
Male	20	22
Other or Prefer not to respond	0	0
<b>Race</b>		
White	70	71
Black	8	9
Asian or Pacific Islander	5	6
American Indian	4	4
Other or Prefer not to respond	3	3
Multi-Racial	0	0
<b>Age</b>		
18-28	81	90
29-39	6	7
40-50	3	3
Other or Prefer not to respond	0	0
<b>Classification</b>		
Junior	30	33
Sophomore	20	22
Senior	14	16
Freshman	13	14
Other or Prefer not to respond	13	14
<b>Highest Degree Completed</b>		
High School	58	64
Associate	15	17
Bachelor	12	13
Masters	2	2

Characteristic	<i>n</i>	%
Other	2	2
Doctoral	1	1
Other or Prefer not to respond	0	0
College		
Education	47	52
Arts & Sciences	16	18
The Graduate College	9	10
Human Sciences	7	8
Business	6	7
Agriculture	3	3
Other or Prefer not to respond	0	0

*Note.* Totals of percentages are not 100 for every characteristic because of rounding.

Table A2  
*Means, Standard Deviations, and Intercorrelations for the Creativity Criterion Variable, Indecision Moderator Variable, and Rumination Predictor Variables (N = 90)*

Variable	<i>M</i>	<i>SD</i>	1	2	3	4
Creativity Measure	79.36	15.13	.38***	.46***	.17	.24*
Indecision Measure	12.73	3.82	.28**	-.02	-.24*	-.07
Rumination Predictors						
1. Brooding	11.74	3.54	—	.62***	-.19	.01
2. Reflecting	11.71	3.50		—	.07	.33**
3. Basking	13.50	3.33			—	.60**
4. Interpreting	11.07	3.84				—

*Note.* Reflecting and Brooding subscales are from the Ruminative Responses Scale (RRS). Basking and Interpreting subscales are from the Positive Rumination Scale (PRS).  
 \* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

Table A3  
*Regression Analysis Summary for Ruminative Response to Negative Mood Variables  
 Predicting Creativity (N = 90)*

Predictor variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	<i>p</i>
Reflecting	.046	.025	.247	1.88	.064
Brooding	.049	.025	.263	1.94	.056
Indecision	-.047	.021	-.271	-2.23	.028
Reflecting × Brooding	-.001	.005	-.020	-0.20	.846
Reflecting × Indecision	.000	.007	.007	0.05	.963
Brooding × Indecision	-.005	.007	-.095	-0.69	.495
Reflecting × Brooding × Indecision	.001	.001	.146	1.26	.211

*Note.* Reflecting is self-distanced, and Brooding is self-immersed. Indecision is the moderator variable.

Table A4  
*Regression Analysis Summaries for Positive Rumination Style and Indecision Variables Predicting Creativity*

Model 1 Variables	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	<i>p</i>
Interpeting	.023	.023	.137	1.02	.310
Basking	.010	.025	.153	0.42	.678
Indecision	-.030	.021	-.176	-1.46	.147
Interpeting × Basking	.012	.005	.255	2.38	.019
Interpreting × Indecision	-.011	.006	-.248	-1.93	.057
Basking × Indecision	.022	.007	.378	3.22	.002
Basking × Interpreting × Indecision	.001	.001	.118	1.03	.307
Model 2 Variables	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	<i>p</i>
Basking	.032	.021	.161	1.51	.134
Indecision	-.010	.018	-.057	-0.53	.595
Basking × Indecision	.014	.006	.236	2.28	.025

*Note.* Basking is self-immersed, and Interpreting is self-distanced. Indecision is the moderator variable.

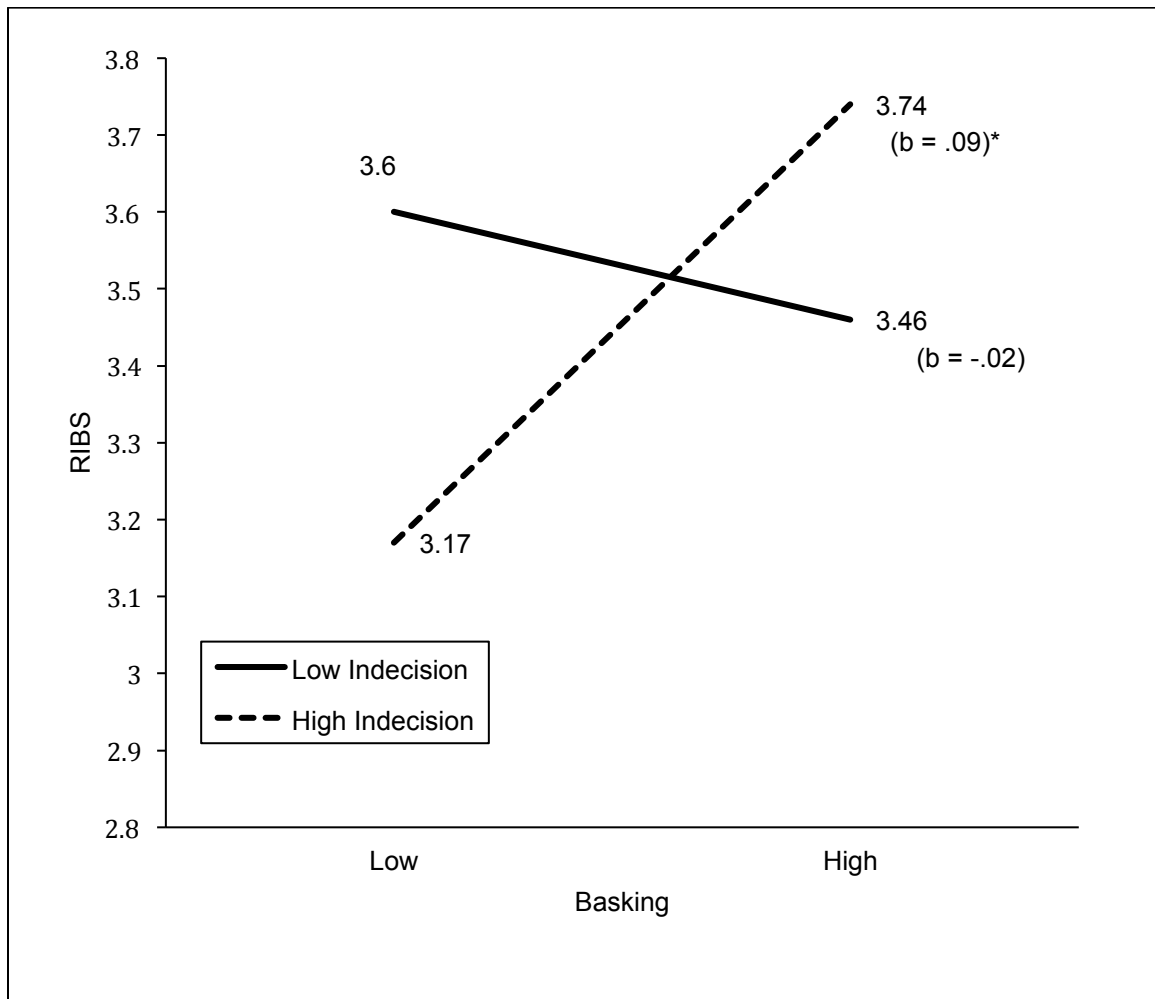


Figure A1. Predicted Runco Ideational Behavior Scores (RIBS) for High and Low (+/- 1 SD) Indecision and Basking. Values are for mean-centered variables.

\* $p < .05$ .

## APPENDICES

### APPENDIX A: REVIEW OF THE LITERATURE

In a letter to his wife, Francis Scott Fitzgerald (1940/2002) remarked on his curious loss of creative talent when times were good: “It’s odd that my old talent for the short story vanished. ...Part of it was somehow tied up somehow with you and me—the happy ending” (p. 373). Recent epidemiological studies support Fitzgerald’s sense that his discontent and creative talent were somehow linked. People who are employed for their creative production have much higher rates of depression, mania, suicide, substance abuse, untimely death, psychoticism, and schizophrenia than the general public (Jamison, 1993; Richards, 1997; Simonton, 1994; Eysenck, 1993; Guastello, Guastello, & Hanson, 1994; Kaufman, 2003; Ludwig, 1994). Old and new suspicions abound concerning these relationships. Nietzsche (1889/1977), for instance, argued that frenzy was necessary for productivity and motivation. Eysenck (1993) attended to the over-inclusive thinking prevalent in both psychotic and creative thinking. Kaufman and Baer (2002) wondered if



heightened focus on emotions, common in depression and literary works, explains the connection between creativity and depression. Mraz and Runco (1994) specified a knack for finding problems that seems to be common to depression and creative problem solving. These theories and speculations are further complicated by experimental studies that support contradictory conclusions that creative thinking is facilitated by happiness.

Based on her review of mood and cognitive processing, Isen (2001) claimed that “in most circumstances, positive affect enhances problem solving and decision making, leading to cognitive processing that is not only flexible, innovative, and creative, but also thorough and efficient” (p. 75). Indeed, several studies do seem to support conclusions that people engage in cognitive process elements underlying creative ideation when they are in a positive mood. Happy people are more likely to perform better on tasks where they are required to think with broader categories. For instance, Isen, Daubman, and Nowicki (1987) induced positive and negative moods in participants and found that the positive mood group outperformed negative and control groups on the Remote Associates Test (RAT; Mednick, Mednick, & Mednick, 1964) and Duncker’s (1945) Candle Problem. Correct answers on the RAT are thought to require participants to make loose associations across categories. To illustrate, participants are asked to produce a word linking three other words such as *cottage*, *Swiss*, and *cake* (answer: *cheese*). Likewise, Duncker’s Candle Problem is thought to require broad categorization because participants must creatively find a solution by formulating novel use for a familiar object. Similar experimental studies demonstrate superior performance for happier participants on tests of originality and cognitive flexibility (Hirt et al., 1996; Murray, Sujan, Hirt, & Sujan, 1990; Showers & Cantor, 1985; Isen, Johnson, Mertz, & Robinson, 1985).

Mixed findings have led some to plea for a truce of sorts where controversies are dispelled in a spirit of benign acceptance of differences. Wise, if not parochial, parables of cooperation are begot from dynamical systems theories of creativity (Csikszentmihalyi, 1996). In an admonition familiar enough to have become cliché, theorists (Wehner, Csikszentmihalyi & Magyari-Beck, 1991) warn that “we touch different parts of the same beast and derive distorted pictures of the whole from what we know: ‘The elephant is like a snake’ says the one who holds its tail; ‘The elephant is like a wall’ says the one who touches its flanks” (p. 270). Other theories of motivation and cognitive bias provide more compelling integration of mixed findings. The dual-pathway model to creativity (De Dreu, Baas, Nijstad, 2008), for instance, explains how both positive and negative moods may lead to creativity through different routes.

According to the cognitive tuning model (Clore, Schwarz, & Conway, 1994), naturally selected biases are activated by ongoing appraisals of safety and danger in the environment. As mood states inform assessment input, negative moods signal danger requiring persistence and effortful problem solving. On the other hand, positive moods signal safety and thereby motivate less effortful persistence and more risk-taking exploration. In De Dreu et al.’s (2008) dual-pathway model, negative moods facilitate creativity through a persistence pathway by motivating effortful attention on a particular problem. Positive moods facilitate creativity through a cognitive flexibility pathway marked by willingness to take risks and explore. Furthermore, De Dreu et al. specify that mood states for both positive and negative pathways must be activating. Activating moods, characterized by increased arousal and approach motivation, include anger, as opposed to sadness, or joy, as opposed to satisfaction. Mikulincer and his colleagues

(Mikulincer, Paz, & Kedem, 1990) found that fear and anxiety led participants to think with more narrow cognitive categories while Derryberry and Reed (1998) found that anxious or fearful participants were less likely to shift attention. Verhaeghen, Joormann, and Khan (2005) found that rumination in response to negative mood and performance on indicators of creativity were linked by persistence and seriousness about creative endeavors.

In the following review, I will first provide examples of popular approaches to creativity throughout the history of creativity research. Second, I will highlight important findings that support the “dark side” (Cropley, Cropley, Kaufman, & Runco, 2010) and “bright side” of the mood-creativity debate in the psychological literature, and I will trace these arguments to their promising synthesis in the dual-pathway model to creativity (De Dreu, et al., 2008). Third, I will then align dual-model perspectives with findings in the rumination literature where creativity has been linked to different rumination styles (Treyner, Gonzalez, Nolen-Hoeksema, 2003; Cohen and Ferrari, 2010). Fourth, I will make the case that rumination theorists unintentionally over-emphasize the impact of mood valence by highlighting how psychological distance accounts for the way in which self-perspective, as a mood response, activates biases that are variously adaptive for creative ideation (Trope & Liberman, 2010). I will also make the case that rumination theories under-emphasize the impact of rumination as a response to positive mood (Feldman, Joormann, & Johnson, 2007), Finally, I will offer future directions concerning the impact that different rumination styles may have for creative ideation based on existing theories of rumination (Nolen-Hoeksema, 1991; Nolen-Hoeksema, Wisco, Lyubomirsky, 2003) and psychological distance.

## Histories of Creativity Research

Histories of creativity research are humble and tentative. By way of introduction, most authors, whose styles are most likely informed by a probabilistic, post-positivist tact, begin their handbook chapters with condolences to any authoritative, single history or theory. Albert and Runco (1999), for instance, titled their *Handbook of Creativity* chapter, “A [emphasis added] History of Research on Creativity” as a “signal to readers that [they] recognize that the history [they] describe is one among other possible histories of the same subject” (p. 16). However, some historians cannot help but privilege their own disciplines over others. For instance, Sternberg and Lubart (1999) minimize approaches in other traditions as consequences of so-called *pre-scientific* thinking. Sternberg and Lubart (1999) argued that “mystical beliefs” associated with creativity studies have “tainted” scientific investigations (p. 4). But by classifying and minimizing two thousand years of thinking on creativity in this way, they ignore the contribution of historical movements that continue to direct current research initiatives in psychology. Surely, Kant’s (1790/1951) *Critique of Judgment*, for instance, is not useless for psychological research. His work on “faculties of mind that constitute genius,” is akin to contemporary approaches in cognitive psychology (p. 277). Shelley’s (1840/1998) conception of artistic inspiration in his *Defense of Poetry* relates to psychological theories of flow (Csikszentmihalyi, 1996) and insight (Duncker, 1945).

### **Eminence**

Albert and Runco (1999) are more interdisciplinary than other psychological historians. They provided an account of creativity approaches by attributing origins of

contemporary research trends to individuals who are considered eminent in the history of social scientific scholarship. Most notably, they trace notions of art as deviant rebellion to Jean-Jacques Rousseau's Romantic defiance of middle-class, industrial society and Adam Smith's effort to predict social consequences of industrial upheaval of large populations. Furthermore, they argue that—while Charles Darwin (1859/2003) highlighted creativity as a problem-solving adaptation—Francis Galton (1869/2005) operationalized diversity as individual difference, a concept that has remained a staple in behavioral statistics, especially in psychometric approaches to creativity. Psychologists still measure individual differences in the characteristics and abilities of creative people. But Albert and Runco argue that methods are not the only disciplinarian inheritances from eminent scholars. *Zeitgeist* is captured by researcher intentions as well.

Albert and Runco maintain that Terman's (1924) study of genius, for instance, was a return to Smith's benevolent attempts to predict and explain social consequences. With Guilford's (1950) explication of factor analysis came the idea that people differed with regard to the amount of creativity they have, and that this amount can be quantified by defining and organizing attribute complexes (Sternberg & Grigorenko, 2001). The creativity complex would be measured by *divergent thinking* tests (Guilford, 1950; Wallach & Kogan, 1965) that encompass the following (Plucker & Renzulli, 1999): fluency (total number of ideas), flexibility (total number of different perspectives), originality (response infrequency in a normal distribution), and elaboration (degree of responses that extend beyond test prompts).

Albert and Runco's taxonomy illustrates the ways in which form and content are interdependent. Classification by authorship implicitly attributes ideas to individuals, an approach that has been criticized elsewhere in social science (e.g., Foucault, 1969). In creativity research, these kinds of attribution biases facilitate reification of constructs as situated within persons. From this perspective, correlates of creativity, such as mood disorders and psychoticism, are informed or caused by cognitive processes and experiences located within an individual. Many psychological investigations of the relationship between mood and creativity take for granted that pathology is the result of creators' personalities or cognitive processes and that eminence is the result of genius. These conceptualizations can be useful, but they are limited by the fact that they do not attend to endogenous factors like cultural and economic valuations of art that also play an important role in the mood states and other experiences of artists. Social psychological theories on misattribution error (Cohen, Maoz, & Trope, 1988; Forgas, 1998; Gilbert & Malone, 1995; Harvey, Town, Yarkin, & Kazdin, 2000) have shown how people—even psychological researchers—can over-attribute causes to persons over situations. It could be the case, for instance, that artists' monetary income accounts for more of the variance in their moods or pathology risk than variables of mainstream concern in psychology.

### **Content**

Rhodes' (1961) description of the *four P's of creativity* is one of the most well-known taxonomies in creativity studies. The *P's* are denoted by their concern with the *content* of research investigations. They are: person, process, product, and press (environment). Person studies can be single-case, phenomenological investigations or

longitudinal studies of eminent persons, but most address personality traits that derive from nomothetic measures. Feist (1998) provides a history of common personality attributes found by several personality psychologists who maintain that such characteristics are adequately captured with self-report surveys. Some of these personality descriptors—most of which are negative—are: rebellious, impulsive, emotionally labile, manic, sensitive, anxious, aloof, unfriendly, and ambitious.

The creative process is often associated with researchers who parcel out and measure elements of development, thinking, or action that people engage in when they create. In Finke, Ward, and Smith's (1992) *geneplore* model, for instance, individuals enter a generative phase (characterized by invention of mental representations) and an exploratory phase (characterized by exploration of these mental representations). Each phase has distinct processes (e.g., retrieval, association, synthesis). Yokochi and Okada (2005) observed an artist while painting and then interviewed him afterward. Like Finke et al. (1992), they found preparatory and exploratory stages by finding that their subject tended to begin with a relatively repetitive pattern of specific images (e.g., trees, rocks) as he gradually formed a global image. Nelson and Rawlings (2007) used a phenomenological approach in their interviews with eleven artists. They found pre-preparatory engagement as a constituent of the creative process as well as a subjectively felt tension between the distance and engagement. Psychological distance is an especially salient topic in studies on emotional regulation (Verduyn, Mechelen, Kross, Chezzi, & Van Bever (2012) and has recently grown in relevance for creativity theorists.

### **Critical Theory**

Critical theorists have made significant contributions to creativity approaches in psychology as critical theory represents a nexus between philosophical and scientific ways of thinking about society and culture. Its importance in the history of art and literary studies lend appeal for creativity researchers concerned with aesthetics. Beginning philosophical ventures in critical theory are generally rife with descriptions of universal elements of quality in creative processes, authors, and texts. Contemporary shifts in critical theory, however, have a more action-oriented concern with societal conflicts for power and dominance. An emerging confluence between evolutionary theory in the “hard sciences” and cultural studies in the humanities also informs critical theory in philosophy and literature. This sort of art-science consilience is rooted in the origins of American psychology but was temporarily superseded by radical behaviorism. Richter (1998) provides a history of popular critical theory maps as described below.

**Content-based typology.** Abrams (1953/1971) differentiated literary theories into four types according to their content emphasis changes throughout time. He termed these: *mimetic*, *rhetorical*, *expressive*, and *formal*. Mimetic theorists of classical antiquity concerned themselves with the relationship between art works and the world, believing that art imitates reality. Rhetorical theorists in the classical period, Middle Ages, and Renaissance emphasized art work and audience relationships, believing that literature should delight and inform. Expressive theorists were concerned with the relationship between artists and products (person and product; Rhodes, 1961), believing that unique abilities serve creative acts. Formal theorists today emphasize aesthetic element relationships within a text. Theoretical paradigms emerged in American psychology during the burgeoning of formal theories. Nonetheless, perhaps in



unacknowledged ways, Abrams' other typologies inform different intradisciplinary tendencies. Transactional theorists in psychology departments, for instance, might find traction with mimetic and rhetorical emphases on relationships between agents and environments while qualitative researchers may prefer rhetorical approaches for their emphasis on personal meaning. Psychometric researchers may prefer expressive theories for their focus on ability correlates. Evolutionary, behavioral, comparative, and physiological psychologists might prefer positivist orientation in formal theories of literature.

**Level of abstraction typology.** In his descriptions of Crane and Friedman, Richter (1998) presents an integrated map of kinds of interpretation. In order of their level of abstraction—from universal or broad to individual or specific—interpretive lines of inquiry are the following: ethical/myth and archetype, historical, sociological, biographical/psychological, and formal. Each interpretive type is inclusive of the more specific types. Higher-order abstractions, such as ethical interpretations, include more universal elements of textual form, or cultural interpretations of these textual forms. This taxonomy helps clarify paradigmatic perspectives of researchers by virtue of their explicit positionality within arts and sciences discourses. Post-positivist social scientists have been chastised by social action scientists, for instance, for their disregard for social-historical influences and ethical failures. By situating them in the formal rung of interpretive types, they are understood by their implicit emphasis on empirical measurements of observable elements. Critics of traditional science may believe that empirical approaches in formal-interpretive approaches are inappropriate for conclusions

more akin to biographical/psychological and sociological interpretations of a higher order.

**Methods typology.** Richter (1998) outlines McKeon's sematic map as an organization of methods. These methods are: dialectical (operational, problematic, logistic), expressive, and formal. The goal of dialectical methods is to approximate congruence between mental models and the truth these models represent. Operational thinkers like Plato believe that congruence can be approximated with a universal model while problematic thinkers like Aristotle believe that many, domain-specific models are necessary. This thinking style difference echoes some of the controversy among psychologists concerning the degree to which creativity, like most other psychological constructs, should be approached as a domain-general or domain-specific phenomenon (Sternberg, 2005). Logistic thinkers are as suspicious of operational holism as problematic thinkers, but their modern scientific methodology reduces systems to constituent elements by virtue of a single method for all phenomena. Creativity researches often include logistic models of interplay between constituents like personality traits (Person, e.g., Openness to Experience), cognitive processes (process, e.g., fluency). McKeon's typology reveals methodological assumptions about the nature of creativity that are rooted in historical modes of thought, some of which predate so-called "scientific thinking" (Sternberg & Lubart, 1999).

### **The Dark Side of Creativity**

#### **Creative People are Deluded**

Given the divergent and multi-disciplined approaches to creativity, it should be no surprise that the creativity literature has many controversies. Perhaps the most

controversial area of debate among creativity researchers has been whether or not creativity represents a risk for psychological problems (“the dark side”) or is an expression of optimal cognitive and mood functioning (“the bright side”). The dark side of creativity was borne from anecdotes and prevalence rate studies. Ancient and modern philosophical texts are thick with descriptions of the unfortunate dispositions manifested in great thinkers (see Simonton’s [1994] tracing of the “Mad Genius” stereotype to Aristotle). These attitudes continue to inform popular attitudes to such an extent that some wonder if the only link between creativity and suffering is the implicit, self-fulfilling belief that creative people must be emotionally distraught in order to achieve. Plucker and his colleagues (Plucker, Beghetto, & Dow, 2004) have termed this romanticized belief the “lone nut” perspective.

The Mad Genius Endorsement Scale (MGES; Kaufman, Bromley, & Cole, 2006) is an internally consistent (Cronbach’s  $\alpha = .83$ ; Cole & Kaufman, 2006), unidimensional measure consisting of seven items that are rated on a 9-point Likert scale. Interestingly, both high and low scorers on the MGES obtained the higher scores on the Remote Associates Test (RAT; Mednick 1962; Mednick & Mednick, 1967) than participants who obtained mid-range MGES scores, leading the authors to conclude that the mad genius stereotype is a dividing issue among people who take creativity seriously. More linear results were found for scores between the MGES and a measure of self-reported creativity, called the Creative Personality Scale (CPS; Goldberg, 1999). High MGES scorers also obtained significantly higher scores on the CPS than medium and low MGES scorers, indicating the people who believe they are creative tend to believe in the Mad Genius stereotype. From this the authors were led to wonder if participants desired

to believe that they were capable of mad genius similar to expressions found in eminently creative people in popular culture.

Self-report measures have resurged in psychology—and in creativity research more especially—owing in part to critiques of the radical behaviorist and the positivist traditions that prevailed in psychology at the turn of the twentieth century (Fuchs & Milar, 2003). But more importantly, researchers in domains that span the wide spectrum of human performance have successfully demonstrated the consequences that implicit beliefs have for behavior thanks to cognitive psychologists who took special charge of self-report momentum by showing how beliefs, attitudes, and values variously inform motivation and task engagement. Critical theorists also contributed to the like-minded, interpretive zeitgeist in the social sciences, albeit from a more explicit, political angle, by dispelling myths associated with objectivity and by examining creators' self-beliefs in the context of a constructed dialogue. In the context of the dark side of creativity, many critical theorists take the mad genius myth for granted even as they lament its unfair characterization.

### **Creative People are Victims**

Susan Sontag was an especially vocal critic against the unfortunate status of the artist in society. In her seminal essay, *Against Interpretation*, Sontag (1969/1998) located the origin of the Mad Genius myth in Plato's mimetic theory. From the moment art became mimesis, or imitation, Sontag argued that art had to justify itself since it was no longer good enough on its own merits. She believed that theory in art has so infected aesthetic, sensual experience, that no one can directly experience a work of art without feeling overcome by an insatiable need to interpret its so-called true, hidden meaning.

Sontag pined for a lost paradise where no one felt a need to ask what aesthetic experience meant. Michel Foucault (trans. 1969/1997) also begrudged mainstream notions about artists, but he located its origins in struggles against specific technologies of power and control. He argued that authors became ill at ease when they acquired ownership over their books as market goods in the nineteenth century, and he suspected that they “compensated for the status” of ownership by becoming more and more transgressive in order to restore danger to art (p. 894). The same critique could doubtless be made in mainstream psychology research approaches to creativity where psychometric instruments are validated by products affording prestige and consensual high regard for the creator.

### **Creative People Have Bad Personalities**

Foucault, like many social constructivist theorists, would probably find creative personality research abhorrent because it approaches creativity as a reified construct embedded in the static character of the person. But even if the word *personality* is only an illusory term that merely covers a class of related and temporally stable behaviors, personality instruments are at least defensible for their reliability. Indeed, certain personality traits repeatedly emerge as consistent correlates of creative achievement. Feist (1998) provides a remarkably exhaustive index of over one hundred artistic personality comparison studies that demonstrate lower conscientiousness and warmth and greater anxiety, affective illness, emotional sensitivity, hostility, aloofness, and unfriendliness in creative artists (pp. 276-277).

An all-star cast of prominent creativity researchers (Silvia, Kaufman, Reiter-Palmon, & Wigert, 2009) conducted a survey study of 1304 undergraduate students in

which they found significant structural equation modeling (SEM) paths between self-reported creativity—as measured by no less than four scales—and personality traits measured by the HEXACO-60 (Ashton & Lee, 2009), an instrument that separates the Big Five personality trait, Agreeableness, into the following two traits: Honesty-Humility and Agreeableness. The authors found that the Honesty-Humility trait, characterized by “facets of sincerity, fairness, greed-avoidance, and modesty” and the Agreeableness trait, characterized by “facets of forgiveness, gentleness, flexibility, and patience,” negatively predicted creativity (p. 688). Their model explained a respectable 35.3% of the variance in creativity scores.

### **Creative People are Distracted**

Highly creative people express a lack of conscientiousness in quasi-experimental studies of inattention and impulsivity. Higher creativity scores and greater delay aversions, for instance, are found in hyperactive children (Shaw, 1992; Kuntsi, Oosterlaan, & Stevenson, 2001). Kasof (1997) presented sixty participants with a trait breadth of attention measure and a poem-writing task. Subsequently, forty participants were randomly assigned to a condition where they had to write a second poem in the presence of distractible noises while the remaining twenty-one participants were asked to write a second poem in a quiet room. Thirteen volunteer undergraduate students rated each poem on a 101-point scale based on their own subjective conception of creativity. Poem originality was measured by coding word frequencies found in Palermo and Jenkins (1964) word association norms for undergraduates. Kasof found a positive relationship between creative performance and trait breadth of attention. Participants who authored more creative poems were also more easily to be distracted by noise.

Takeuchi et al. (2011) used functional magnetic resonance imaging (fMRI) to discover a positive relationship between creativity—as measured by a divergent thinking task—and greater activation in the precuneus when participants performed a working memory (WM) task. Greater precuneus activation was also associated with poorer WM performance. The authors reasoned that inhibition of the precuneus is an expression of a reallocation of cognitive resources away from networks that are irrelevant for particular tasks. Therefore, they concluded that greater divergent thinking performance stems from inefficient and diffuse allocation of attention. The precuneus is part of the default mode network (DMN), an area located in the medial prefrontal cortices (mPFC) and posterior cingulate cortices that becomes deactivated during working memory tasks. Reduced task-induced deactivation (TID) of the DMN may cause diffuse or inefficient attention because emotional arousal interferes with vigilance and focus.

In O'Reilly's (2010) What-How-Abstraction-Cold/Hot (WHACH) model, *Hot* emotional processing occurs in medial areas across the cortex. These areas are directly connected to the limbic system while more lateral areas of the cortex, responsible for *Cold* cognition, are involved with sensory/motor processes. Although O'Reilly's indication could be characterized in other ways (e.g., *Personal* versus *Impersonal*), the Hot versus Cold template may add explanatory integration of scholarship on individual differences in thinking style (O'Hara & Sternberg, 2001), interest (Hennessey & Amabile, 1998), problem-solving, and emotional regulation (Ray, Wilhelm, & Gross, 2008)—all of which are important for the study of creativity. O'Reilly's medial-lateral distinction, and its dichotic relation as an emotion regulation property, is especially relevant, however, for

findings on the association between creativity and mood disorders. The lateral-medial distinction of hot versus cold cognition could explain how affective disorders, stemming from emotion dysregulation, interfere with working memory and facilitate the sort of emotional frenzy necessary for energy and productivity as well as the sort of diffuse attention necessary for divergent thinking.

Preservative attention is an important topic in the emotional regulation literature as it is a hallmark characteristic of people who express greater interest and ability in creative endeavors (Verhaeghen, Joormann, & Khan, 2005). In particular, depression is linked to heightened attention to feelings (Jamison, Gerner, Hammen, & Padesky, 1980), inner content (Richards, 1981), and deficits in the ability to screen out irrelevant stimuli (Carson, Peterson, Higgins, 2003). According to Response Styles Theory (RST; Nolen-Hoeksema, 1991) *rumination* “is a mode of responding to distress that involves repetitively and passively focusing on symptoms of distress and the possible causes and consequences of these symptoms” (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2003, p. 400). A key feature of rumination is perseveration on one’s feelings. People who ruminate when upset are more likely to suffer through longer depressive episodes and are more likely to develop depressive disorders (Nolen-Hoeksema, 2000; Nolen-Hoeksema, Morrow & Fredrickson, 1993; Nolen-Hoeksema, Parker, & Larson, 1994), and they are more likely to be creative (Verhaeghen et al., 2005).

### **Creative People Procrastinate**

Rumination and procrastination findings from psychometric studies of creative interest and task engagement would seem to figure nicely into creativity theories concerning *incubation*, a process first conceived in Wallas’ (1926) five-stage model



(preparation, incubation, intimation, illumination, verification) of the creative process. Incubation, defined as “a period away from deliberate work on the problem” (Hélie & Sun, 2010), has been found to lead to sudden insight for creative problem solving (p. 68). There are several theories of how incubations works (e.g., unconscious disinhibition, remote association, forgetting of irrelevant information; see Smith & Dodds, 1999 for a review) but unlike rumination theories, none of the incubation theories concern hedonic tone. Furthermore, current theories of incubation encompass implicit and explicit processes (Hélie & Sun 2010) while most rumination studies only encompass explicitly effortful processes, especially since Cohen and Ferrari’s (2010) study demonstrated benefits of procrastination only in the presence of conscious thought. Although incubation and rumination seem similar in many ways, especially with regard to the facilitation of creativity via periods of explicit or implicit reflection, it is difficult to know the extent to which these constructs may be meaningfully related or the same since they are derived from wholly separate research agendas. Incubation studies have a long history of concern with creative problem solving while rumination studies began in the literature on risk factors for depression. Only recently has rumination been a concern for creativity researchers.

### **The Bright Side of Creativity**

#### **Creative People Are Savvy**

Anyone wanting to dispute Kaufman, Bromley, and Cole’s (2006) idea that creative people are deluded by romanticized ideas of madness would do well to consult Sternberg and Lubart’s (1991; 1992) investment theory of creativity, where social savvy and keen interpersonal awareness drive market-based valuations of worthwhile ideas.

According to their theory, a person is creative when six “resources” (intellectual processes, knowledge, intellectual style, personality, motivation, environmental context) converge to facilitate his or her ability to “buy low and sell high” in the world of ideas (p. 1). If eminently creative people and people with psychosis are similar in their tendency to think over-inclusively, as Eysenck (1993), among others, maintained, then perhaps a core differentiating factor between these populations is that creative achievers possess a meta-awareness of their ideas’ appropriateness.

Sternberg and Lubart’s theory is rather intuitive and congruent with traditional creativity definitions offered in psychology. In his inaugural address to the American Psychological Association (APA), Guilford (1950)’s oft-cited criteria for creativity continue to influence notions of novelty and usefulness. He claimed that “degree[s] of novelty” could be measured by the statistical infrequency of ideas that are considered “acceptable” (p. 452). Runco and Jaeger (2012) astutely concede that *acceptability* as a criterion introduces the problem of assigning the legitimate audience or judge. Csikszentmihalyi (1996) refers to the judges of appropriateness or value as *gate-keepers* who must be convinced to let ideas into a discursive domain.

### **Creative People are Happy**

Alice Isen is perhaps the most widely regarded champion of the bright side creativity argument. Her conclusion that happiness usually leads to creative cognitive processing is founded upon compelling experimental evidence. She and her colleagues (Isen, Patrick, & Nowicki, 1982) induced positive mood in participants by complimenting their motor skill performance on an unrelated task. On average, happy participants made

decisions four times faster than a control group. Happy participants made faster decisions because they used less information and because they rechecked their choices less often. Isen and Daubman (1984) concluded that these results support the idea that positive affect facilitates data reduction through the use of broader categories. And because broader categories are more inclusive and complex than narrow categories, Isen and Daubman concluded, “the cognitive context present when a person is happy may be more complex” (p. 1207). The benefits of data reduction have been alluded to in other areas of psychology. As early as 1880, William James remarked that wisdom is punctuated by knowledge of what to overlook. In his essay on great men and their environments, the marksman attends to the motion of the wind but not the motion of the earth and solar system. Happy people may be more likely to overlook more information than people in neutral or sad moods because they are less likely to make close discriminations about all available data.

Murray and his colleagues (Murray, Sujan, Hirt, & Sujan, 1990) investigated the influence of goals on mood. They found that participants in a positive mood induction group made fewer and more inclusive categories than neutral and induced negative mood groups when they were instructed to find similarities between popular television shows. Positive mood participants were also able to generate more categories between popular television shows than other participants when they were instructed to find differences. Furthermore, they found that intrinsic interest in the task mediated the relationship between positive mood and cognitive flexibility. Murray et al. therefore concluded that positive mood might facilitate cognitive processing that is optimal for creative thinking as well as increased productivity through greater effort expenditure.

## **Creative People are Highly Motivated**

De Dreu et al.'s (2008) dual pathway model to creativity stipulates that positive and negative moods must be activating in order to lead to creativity. Harmon-Jones and his colleagues (Harmon-Jones, Gable, & Price, 2013) use the term *motivational intensity* to refer to the degree to which moods facilitate an approach urge. They note that low motivational intensity is most often found in moods (such as satisfaction or gratitude) that occur after goals have been accomplished while high motivational intensity is found in moods (such as desire or enthusiasm) that occur before goals have been reached. They argued that most positive mood experimenters have not made this distinction in their methods and have only examined positive moods with low motivational intensity. Because of this, Harmon-Jones et al. contend that it is low motivational intensity rather than positive mood that accounts for broader attentional scope. Using a local-globe scope task (Kimchi & Palmer, 1982), Gable and Harmon-Jones (2008) found that participants made more local categorizations after they watched a film intended to induce low motivational intensity and that they made more global categorizations after they watched a film intended to induce high motivational intensity. The researchers used a film of kittens in funny situations for the low motivational intensity induction procedure because they wanted to induce general positive affect. They used a film of appealing desserts for the high motivational intensity induction because it was indicative of a specific, appetitive stimulus or valued goal.

### **Dual Pathway to Creativity Model**

The dual pathway to creativity model (DeDreu, Bass, & Nijstad, 2008) explains how dark side and bright side accounts of creativity may both be correct. According to

their model, positive moods lead to originality and fluency, two widely used indicators of creativity (Plucker & Renzulli, 1999), by enhancing cognitive flexibility. On the other hand, negative moods enhance creativity by motivating persistence. The model was borne from the cognitive tuning model (Clore, Schwarz, & Conway, 1994) where negative moods inform a person that a problem needs to be solved and positive moods inform a person that a situation is safe. As such, a person in a negative mood is more likely to engage in repeated efforts to address a particular problem. People suffering from depression are indeed more likely to experience a problem-finding orientation (Mraz & Runco, 1994) and a tendency to persevere (Davis & Nolen-Hoeksema, 2000). According to the cognitive tuning model, positive moods inform a person that a situation is safe, and this may explain why people expend less effort making complex decisions (Isen, Means, Patrick, & Nowicki, 1982), take more risks (Isen & Patrick, 1983), and explore novel uses for everyday objects (Isen, Daubman, & Nowicki, 1987) when they experience positive moods.

As creative artists are at an increased risk for bipolar disorder (Rybakowski & Klonowska, 2010) and they experience higher incidences of emotional sensitivity (Feist, 1998, Kaufman & Baer, 2002), could it be the case that artists benefit from the adaptive effects of negative and positive affects by virtue of increased affective lability? Reinders' (1991) account of artist self-report indicates a commonly held perception among artists that the creative process is facilitated by a *distance-engagement* paradox.'

phenomenological investigation supports the lay notion among artists and creative writers that they must first enter a disinhibited state where they generate many ideas without judgment (e.g., a drafting stage). This state is facilitated by enthusiasm and approach

motivation. After generating creative ideas through loose association and disinhibition, writers and artists may refine their works with disengaged evaluations of quality. The intentional back-and-forth process of distance and engagement may correlate with affective lability, a risk factor for affective disorders. Future studies may be used to investigate mood changes over time as creative professionals distance themselves from or engage with their creative products.

### **Rumination**

Owing to its origins in studies on depression, the concept of *rumination* is primarily used to account for the negative mood route to creativity (Cohen & Ferrari, 2010; Verhaeghen, Joormann, & Khan, 2005). Nolen-Hoeksema (1991; 2000, 2004a, 2004b) introduced Response Styles Theory (RST) to hypothesize that individual differences in the onset and maintenance of depression depend on the way in which people respond to negative moods. Nolen-Hoeksema (1991) defined depressive rumination as “passively and repetitively focusing on one’s symptoms of distress and the circumstances surrounding these symptoms” (p. 569). Nolen-Hoeksema and Morrow’s (1991) Ruminative Responses Scale (RRS) measures the extent to which people engage in rumination. Treynor and his colleagues (Treynor, Gonzalez, & Nolen-Hoeksema, 2003) conducted a psychometric study of the RRS in an attempt to differentiate rumination from depression. They found three factors with items indicative of different implications for mood. They labeled the factors *depressive*, *brooding*, and *reflective pondering* according to the feelings that seemed to be associated with them. Rumination scores on the RRS account for the 2:1 ratio of female to male depression rates (Butler & Nolen-Hoeksema, 1994; Grant et al., 2004; Nolen-Hoeksema, Larson, & Grayson, 1999),

predict onset of depression in previously non-depressed people (Just & Alloy, 1997; Nolen-Hoeksema, 2000), and predict depressive symptoms in patients with clinical depression after controlling for baseline depression symptoms (Kuehner & Weber, 1999; Nolen-Hoeksema, 2000; Rohan, Sigmon, & Dorhofer, 2003).

Other researchers have focused on the particularities of rumination as a cognitive process rather than on the mood types that rumination styles are likely to evoke. Martin and Tesser (1996) defined rumination as “a class of conscious thoughts that revolve around a common instrumental theme and that recur in the absence of immediate demands requiring the thought” (p. 7). From this perspective, rumination is conceived as repetitive, passive thought that may be adaptive or maladaptive, depending on whether or not it leads to positive or negative consequences. Cohen and Ferrari (2010) found that higher scores on reflective RRS items predicted higher scores on a measure of creative ideation (Runco Ideational Behavior Scale, RRS; Runco, Plucker, & Lim; 2001) in the presence of high levels of indecision. Their findings support Martin and Tesser’s (1996) notion that different styles of rumination may be more or less adaptive. Given the nascence of rumination investigations of creativity, Cohen and Ferrari did not offer explanations for why reflective rumination enhances creativity. Furthermore, their study did not include a measure of rumination as a response to positive mood.

Although rumination research explains individual differences in depression and it explains why higher incidences of depression are found in creative professionals, it does not explain differences in cognitive process elements between rumination styles. RST does not describe rumination as an affective style, but Treynor et al. (2003) differentiated RRS subscales according to the affective tone that seemed to be associated with them.

But why should a reflective style increase creative ideation while a brooding style does not? It could be the case that a reflective style only indirectly influences productivity—and not creativity, *per se*—by limiting symptoms of depression such as fatigue or low motivation (Weisberg, 1994). Or it might rather be the case that a reflective style is adaptive for making meaning of experience since it is characterized by evaluative “cold cognition” (O’Reilly, 2010). In the next section, I present a construal-level theory of psychological distance (CLT; see Liberman & Trope, 2008 for a review) account of rumination styles differences and their impact on creativity. I make a case that a self-distant perspective—characterized by low physiological arousal and abstract thinking—facilitates creativity when people respond to negative moods because it reduces depressive symptoms and enhances a cognitive bias toward making sense of experience. A self-immersed perspective, as a response to positive mood, is adaptive for creativity because it enhances interest, productivity, and cognitive flexibility.

### **Narrative Point of View and Psychological Distance**

Markus and Kitayama (1991) originally introduced the self-construal to explain differences in the ways that Japanese and Americans understand themselves and value individualist versus collectivist goals (see Cross, Hardin, and Gercek-Swing, 2011 for a review of self-construal), but the construct has since grown in relevance for examinations of group differences in other research domains. Hardin and Lakin’s (2008) Integrated Self-Discrepancy Index (ISDI) operationalizes self-construal as the self-rated dissimilarity scores for ideal-self (e.g., “the way I would like to be versus the way I really am”) and ought-self (e.g., “the way I ought to be versus the way I really am”) from one’s



own perspective or the imagined perspective of a significant other. Hardin and Lakin (2008) found that ideal-self discrepancies were positively correlated with depression scores. Although the ISDI and self-construal theories have not been widely used in studies of creativity, the idea that multiple self-perspectives explain how people make sense of their lives is a popular notion in narrative psychological research (Hermans, 2001, 2003; McAdams, 2006; Raggatt, 2006; Pals, 2006).

In our Q-methodological (Stephenson, 1953) investigation (Copeland & Knight, 2008), we instructed a creative writer to perform Q-sorts for her third-person self, her first-person self, and the names of five fictional characters that she generated for a series of short stories that she wrote on a weekly basis for four weeks. Before Q-sorts were performed, we described essential differences between first-person self and third-person self by informing the participant about ways in which researchers have conceptualized multiple selves (Brewer, 2012, 1991). We described the first-person self as the self that is aware of the ongoing present, and we described the third-person self as the self that makes judgments and meaning about these experiences across time and space. We found that the participant's protagonists most often loaded a factor with her first-person self while antagonists loaded onto a factor with her third-person self. From this finding in particular, we concluded that empathy and engagement may be related to perceived closeness in perspective. A third-person narrative perspective may be considered distant because its omniscience lends itself to abstractions while a first-person perspective may be considered close because it is particular to experiences from a specifically singular point of view.

Our first-person and third-person dichotomy was especially informed by William James' (1890/2007) proposal that the self is experienced from a subjective-*me* (or self-as known) perspective and an objective-*I* (or self-as knower) point of view. James used these concepts to explain how personal identity is a consequence of perceived continuity of self through time and space. *I* is able to consider, consolidate, and make sense of *me* elements such as distant memories and distant belongings. By analogy, *I* is more distant from specific times and places than *me* because *I* makes appraisals of the aspects of *me* that have been experienced in the past or that are anticipated in the future. To illustrate, if one were asked to imagine herself eating dinner yesterday, she may visually imagine herself eating from a third-person point of view—a perspective outside her body. This third-person, distanced perspective is the appraising *I*. The imagined self who eats dinner that the *I* watches is *me*. Similar multiple-self theories are found in Dennett's (1991) work, where the self is described as a "center of narrative gravity" (p. 410) and in Bakhtin's (1930/1998) work where a self emerges from a dynamic polyphony of I-positions.

In construal-level theory (CLT; Liberman & Trope, 2008), self-perspectives differ according to differences in psychological distance. The concept of psychological distance was originally used to explain mixed findings on the effect of thinking about bad memories. While some research findings demonstrate therapeutic benefits for thinking about bad memories (Pennebaker, 1997; Wilson & Gilbert, 2008), others demonstrate increased risks of ruminative entanglement and depression (Nolen-Hoeksema & Morrow, 1991). Kross and Ayduk (2011) reviewed evidence showing that participants experience less physiological and emotional distress when they recall bad memories from the

viewpoint of a “fly on the way” (self-distanced perspective) versus a first-person perspective (Ayduk & Kross, 2008; Kross & Ayduk, 2008; Kross, Ayduk, & Mischel, 2005). Because self-distance is associated with reconstrual rather than recounting of experience, a self-distanced perspective, in response to negative mood, may help people make sense of their lives. A self-distanced perspective may explain why people who ruminate reflectively as a response to negative mood experience less symptoms of depression. And because a self-distanced perspective is associated with an ability to make sense of experience, it might also explain why reflective rumination is associated with increased creative ideation.

Rumination theorists often differentiate rumination effects according to the positive or negative valence that different styles are likely to elicit. For instance, in their psychometric study of the Rumination Responses Scale (RRS; Nolen-Hoeksema & Morrow, 1991), researchers (Treynor, Gonzalez, & Nolen-Hoeksema, 2003) found three factors and labeled them *depressive*, *brooding*, and *reflective*. Their characterization is a bit misleading, however, since rumination is defined by its style of passive and repetitive focus rather than its affective tone (Martin & Tesser, 1996). Cohen and Ferrari (2010) found that *reflective* rumination, a style typified by neutral affective valence predicted creative ideational behavior (Runco, Plucker, & Lim, 2001) in the presence of high levels of indecision. While investigators like Cohen and Ferrari are concerned with the moderating effects of indecision on the relationship between creativity and mood, Kross and Ayduk (2011) are concerned with the ways in which psychological distance informs appraisal and consequent mood states. Unfortunately, Kross and Ayduk do not differentiate between affective rumination styles, taking it for granted that the term

*rumination* is an umbrella term for depressive ideation that is always a risk factor for depression while self-reflection is necessarily a different construct. This is probably the result of the negative connotation that rumination has received due to the way that it has been characterized in the depression literature.

In the context of creativity investigations, rumination models are themselves a recounting of experience in that the presence and quality of rumination provides a prediction or explanation of links between variables. A CLT account of psychological distance may present a higher-order approach (Dennett 1978) because it construes rumination models with causal roles for mental states and conscious intent from goals. In other words, CLT theory provides an explanation *how* and *why* rumination styles exert different effects on creative ideation. Beginning explorations of rumination as a response to negative affect indicate that a reflective pondering style is particularly useful for enhancing creativity. Questions remain about how reflective pondering works. Based on CLT theories of psychological distance, I hypothesize that reflective pondering enhances creativity by facilitating a cognitive bias toward abstract thinking, persistence within a single domain, a problem-finding orientation, and a consequent reduction of debilitating depressive symptoms. This explanation describes the negative mood pathway to creativity via De Dreu et al.'s (2008) dual-pathway model. To my knowledge, no rumination theories are used to describe the positive mood pathway to creativity. One measure of ruminative response to positive affect, the Responses to Positive Affect (RPA; Feldman, Joormann, & Johnson, 2008) has been used to predict manic symptoms. A self-immersed ruminative response to positive mood may be adaptive for creativity because it facilitates a cognitive bias toward alternative perspective taking, increased

physiological and emotional approach motivation, and increased interest in creative pursuits.

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APPENDIX B: RESEARCH STUDY MATERIALS  
SOLICITATION OF PARTICIPATION

Purpose: The purpose of this study is to investigate mood and creativity.

Description: As a participant, you will be asked to respond to several questions regarding your thoughts and practices about your feelings and creative thinking. You will also be asked to respond to some demographic questions.

Duration: 15 minutes

Researchers: Chris Copeland, M.S., M.A., [christopher.copeland@okstate.edu](mailto:christopher.copeland@okstate.edu)  
Sue Jacobs, Ph.D., [sue.c.jacobs@okstate.edu](mailto:sue.c.jacobs@okstate.edu)  
Steve Harrist, Ph.D., [steve.harrist@okstate.edu](mailto:steve.harrist@okstate.edu)

## INFORMED CONSENT

Project Title: Mood and Creativity

Investigators: Chris Copeland, M.S., M.A., Steve Harrist, Ph.D., Sue Jacobs, Ph.D.,  
School of Applied Health and Educational Psychology, Oklahoma State University  
(OSU)

Purpose: The purpose of this study is to investigate mood and creativity.

Procedures: Participants over 18 years of age will be asked to complete an online survey questionnaire one time and provide demographic information. This study will take about 15 minutes.

Risks of Participation: There are no known risks associated with this project that are greater than those ordinarily encountered in daily life.

Benefits: This study may allow researchers to introduce positive rumination, as opposed to only neutral and negative types introduced in current research, as a possible predictor of creativity.

Confidentiality: Confidentiality of each participant will be enforced. Although instructors may be advised when a student has participated, they will not have access to a student's actual survey or information collected through the survey. Information will be stored on a secure database using the survey instrument software (such as Survey Monkey) and will only be accessible by researchers of this study. Any identifying information in order to assess participation for course credit will be removed before data is analyzed and any results are reported.

Research records will be stored securely on a password-protected file of the Principal Investigator's computer, and no one other than PI and advisers will have any access to the data obtained. Electronic data files will be destroyed five years after the completion of the research study. Any written results will discuss group findings.

Compensation: Student participants who are registered with and referred from the College of Education's SONA system (<http://education.okstate.edu/sona>) can earn 0.5 course credits for completing this survey, which will take about 15 minutes to complete. SONA-referred students who choose not to participate in the research study will be asked to complete alternative assignments to get equal extra credits. Participants not registered with and referred from the OSU College of Education's SONA website will not receive course credit or any other form of compensation for completing this survey.

Contacts: Subject may contact the following researcher with questions about the research: Chris Copeland (Principal Investigator), 405-620-7218, 408 Willard Hall, School of Applied Health and Educational Psychology, Oklahoma State University, [christopher.copeland@okstate.edu](mailto:christopher.copeland@okstate.edu)

If you have any questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-744-3377 or

irb@okstate.edu.

Participant Rights: Participation is voluntary and subjects can discontinue the research activity at any time without reprisal or penalty. There are no risks to subjects who might withdraw.

**If you choose to participate:** Please, click NEXT if you choose to participate. By clicking NEXT, you are indicating that you freely and voluntarily and agree to participate in this study and you also acknowledge that you are at least 18 years of age. It is recommended that you print a copy of this consent page for your records before you begin the study by clicking below.

## DECISIONAL PROCRASTINATION SCALE

Instructions: People differ in how they go about making decisions. Please indicate how you make decisions by selecting the response from 1 (low) to 5 (high) to each question that best fits your usual style.

- 1 = Not true for me
- 2 = Often untrue for me
- 3 = Sometimes true/false for me
- 4 = Often true for me
- 5 = True for me

1. I waste a lot of time on trivial matters before getting to the final decision.
2. Even after I have made a decision I delay acting upon it.
3. I don't make decisions unless I really have to.
4. I delay making decisions until it's too late.
5. I put off making decisions

## RUNCO IDEATIONAL BEHAVIOR SCALE

Instructions: Use the 0-4 scale (given below) to describe your thinking and behavior. You may need to approximate. Please indicate how you really think and behave, not how you think you should. Remember—no names are used. Your responses are confidential. Again, you may need to approximate. For each item, circle the response option that is the closest to being accurate.

0 = never      1 = seldom      2 = sometimes      3 = often      4 = very often

1. I have many wild ideas.
2. I think about ideas more often than most people.
3. I often get excited by my own new ideas.
4. I come up with a lot of ideas or solutions to problems.
5. I come up with an idea or solution other people have never thought of.
6. I like to play around with ideas for the fun of it.
7. It is important to be able to think of bizarre and wild possibilities.
8. I would rate myself highly in being able to come up with ideas.
9. I have always been an active thinker and I have lots of ideas.
10. I enjoy having leeway in the things I do and room to make up my own mind.
11. My ideas are often considered “impractical” or even “wild.”
12. I would take a college course that was based on original ideas.
13. I am able to think about things intensely for many hours.
14. Sometimes I get so interested in a new idea that I forget about other things that I should be doing.
15. I often have trouble sleeping at night, because so many ideas keep popping into my head.
16. When writing papers or talking to people, I often have trouble staying with one topic because I think of so many things to write or say.
17. I often find that one of my ideas has led me to other ideas that have led me to other ideas, and I end up with an idea and do not know where it came from.
18. Some people might think me scatterbrained or absentminded because I think about a variety of things at once.
19. I try to exercise my mind by thinking things through.
20. I am able to think up answers to problems that haven't already been figured out.
21. I am good at combining ideas in ways that others have not tried.
22. Friends ask me to help them think of ideas and solutions.
23. I have ideas about new inventions or about how to improve things.



## RUMINATION REPOSSES SCALE

Instructions: People think and do many different things when they feel depressed. Please read each of the items below and indicate whether you almost, never, sometimes, often, or almost always think or do each one when you feel down, sad, or depressed. Please indicate what you *generally* do, not what you think you should do.

1 = almost never      2 = sometimes      3 = often      4 = almost always

- |  |            |
|--|------------|
| 1. think "What am I doing to deserve this?"                            | Brooding   |
| 2. analyze recent events to try to understand why you are depressed    | Reflective |
| 3. think "Why do I always react this way?"                             | Brooding   |
| 4. go away by yourself and think about why you feel this way           | Reflective |
| 5. write down what you are thinking about and analyze it               | Reflective |
| 6. think about a recent situation, wishing it had gone better          | Brooding   |
| 7. think "Why do I have problems other people don't have?"             | Brooding   |
| 8. think "Why can't I handle things better?"                           | Brooding   |
| 9. analyze your personality to try to understand why you are depressed | Reflective |
| 10. go someplace alone to think about your feelings                    | Reflective |

## POSITIVE RUMINATION SCALE

Instructions: People think and do many different things when they feel happy. Please read each of the items below and indicate whether you almost, never, sometimes, often, or almost always think or do each one when you feel upbeat, happy, or enthusiastic. Please indicate what you *generally* do, not what you think you should do.

1 = almost never      2 = sometimes      3 = often      4 = almost always

- |  |              |
|--|--------------|
| 1. think "I deserve to feel good about myself."                    | Basking      |
| 2. think "I am proud of my actions."                               | Basking      |
| 3. analyze recent events to try to understand why you are happy    | Interpreting |
| 4. take some time alone to reflect on why you feel good            | Interpreting |
| 5. think about a recent situation, appreciating how well it went   | Basking      |
| 6. analyze your personality to try to understand why you are happy | Interpreting |
| 7. think "I do not have problems other people have."               | Basking      |
| 8. think "I am handling things well."                              | Basking      |
| 9. take some time alone to reflect on your feelings of well-being  | Interpreting |
| 10. write down positive thoughts and analyze them                  | Interpreting |

## DEMOGRAPHICS QUESTIONS

1. What is your race
  - a. White
  - b. Black
  - c. Asian or Pacific Islander
  - d. American Indian
  - e. Mixed Race
  - f. Other
  - g. Prefer not to Respond
2. What is your gender?
  - a. Male
  - b. Female
  - c. Other
  - d. Prefer not to respond
3. What is your age?
  - a. 18-28
  - b. 29-39
  - c. 40-50
  - d. 51-61
  - e. 62-72
  - f. 73-83
  - g. 94-104
  - h. Prefer not to respond
4. What is your classification?
  - a. Freshman
  - b. Sophomore
  - c. Junior
  - d. Senior
  - e. Other
  - f. Prefer not to respond
5. What is your highest degree completed?
  - a. High School degree
  - b. Associates degree
  - c. Bachelors degree
  - d. Masters degree
  - e. Doctoral degree
  - f. Other
  - g. Prefer not to respond

6. From which college are you seeking a degree?
  - a. Agricultural Sciences and Natural Resources
  - b. Arts and Sciences
  - c. Education
  - d. Engineering, Architecture, and Technology
  - e. Human Sciences
  - f. Spears School of Business
  - g. Center for Veterinary Health Sciences
  - h. Graduate College
  - i. Honors College
  - j. College of Osteopathic Medicine
  - k. Prefer not to respond

# INSTITUTIONAL REVIEW BOARD

## Oklahoma State University Institutional Review Board

Date: Tuesday, October 29, 2013  
IRB Application No ED13176  
Proposal Title: Mood and Creativity

Reviewed and Exempt  
Processed as:

**Status Recommended by Reviewer(s): Approved Protocol Expires: 10/28/2016**

Principal Investigator(s):

Chris Copeland  
408 Willard  
Stillwater, OK 74078

Steven Harrist  
434 Willard  
Stillwater, OK 74078

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The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

- The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may include changes to the title, PI, advisor, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Dawnett Watkins 219 Cordell North (phone: 405-744-5700, dawnett.watkins@okstate.edu).

Sincerely,



Shelia Kennison, Chair  
Institutional Review Board

VITA

Christopher Thomas Copeland

Candidate for the Degree of

Doctor of Philosophy

Dissertation: FRENZY: A PSYCHOLOGICAL DISTANCE ACCOUNT OF RUMINATION, MOOD, AND CREATIVITY

Major Field: Educational Psychology with an option in Counseling Psychology

Biographical:

Education:

Completed the requirements for the Doctor of Philosophy in Educational Psychology with an option in Counseling Psychology at Oklahoma State University (OSU), Stillwater, Oklahoma in July, 2015.

Completed the requirements for the Master of Science in Educational Psychology at Oklahoma State University, Stillwater, Oklahoma in 2011.

Completed the requirements for the Master of Arts in Experimental Psychology at The University of Central Oklahoma, Edmond, Oklahoma in 2008.

Completed the requirements for the Bachelor of Arts in English at The University of Oklahoma, Norman, Oklahoma in 2004.

Experience:

Practica: Oklahoma City Veterans Affairs Medical Center (Aug. 2012-May 2014), OSU Counseling Services (Aug. 2011-May 2012), OSU Counseling Psychology Clinic (Aug. 2010-May 2011).

Graduate Assistantships: Clinical Supervisor at OSU Community Counseling and School Counseling Master of Science Program (Aug. 2012-May 2014), Research Assistant at OSU School of Applied Health and Educational Psychology (Jan.-May 2013; Aug.-Dec. 2013), Instructor at OSU College of Education (Aug. 2010-May 2011).