

The Associations Among Perfectionism, Rumination, and Affect after Participation in a
Cognitive Failure Task

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Abstract

Researchers have not yet: a) studied both maladaptive and adaptive perfectionism, as well as both positive and negative affect simultaneously; b) examined the relationship between both maladaptive and adaptive perfectionism and affect after ruminative and distracting tasks; c) explored the role of maladaptive perfectionism on cognitive impairment when asked to execute a plan; and d) confirmed rumination's mediating role between maladaptive perfectionism and negative affect in an experimental setting. Data obtained by 71 undergraduates showed that distracting tasks did not significantly change the correlations between both maladaptive and adaptive perfectionism and levels of affect after a ruminative task, but the changes were in the hypothesized directions. The Doubts about Actions component of maladaptive perfectionism did not significantly correlate with cognitive impairment on a failure task, but the correlation was close to significance and in the hypothesized direction. Finally, rumination was found to partially mediate the relationship between maladaptive perfectionism and negative affect.

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Rumination and Response Styles Theory

Rumination is currently defined as repetitive thoughts and behaviors that focus attention on one's depressive symptoms and negative affect (Nolen-Hoeksema, 1991). Ruminative individuals repetitively focus on their depressive thoughts, as well as the causes of these thoughts, but usually fail to take any action to change their condition. A ruminative response style to a negative affective state (i.e., a state in which negative emotions are being experienced) is characterized by focusing on the causes, meanings, and consequences of negative affect. Indeed, ruminative individuals may dwell on questions such as, "Why do I get depressed when other people don't?" and think to themselves, "I'm not going to be able to finish my work if I keep feeling this way."

Two of the key components that comprise rumination are brooding and reflection (Treynor, Gonzalez, & Nolen-Hoeksema, 2003). As measured by the Ruminative Responses Scale (RRS), brooding refers to moody pondering; that is, thinking anxiously or gloomily about a state or situation. Reflection, on the other hand, refers to the individual's attempt to ponder his or her situation objectively, as well as the individual's attempts to overcome problems and difficulties (Joormann, Dkane, & Gotlib, 2006).

Duration of negative affective states vary widely among individuals, lasting from as little as a few days to as long as a few months or years (Nolen-Hoeksema, 1991). Research has shown that a ruminative response style lengthens the duration of a negative affective state by amplifying the effects of maladaptive cognitions. Specifically, the presence of rumination in a dysphoric individual causes the negative and maladaptive cognitions associated with negative affect to

become more persistent and severe than if rumination were not present. Indeed, other research has found that rumination is related to the duration of a negative affective state (Nolen-Hoeksema, Morrow, & Frederickson, 1993), severity of a negative affective state (Just & Alloy, 1997), and recovery from a negative affective state (Spasojevic & Alloy, 2001).

Ruminative response style is believed to draw attention to maladaptive cognitions, but not create them (Nolen-Hoeksema, 1991). Rumination, then, can be perceived as a mechanism by which negative cognitions are brought to mind more often and significantly amplified, thus increasing dysphoric mood (Ciesla & Roberts, 2007; Nolen-Hoeksema, 1991). Regardless of the sources of these negative cognitions (i.e., life events, immediate situations), ruminative individuals constantly ponder their sadness and lack of motivation without taking any action to change such a state (Nolen-Hoeksema, 1991). Moreover, Carver, Scheier, and Weintraub (1989) found that these individuals are less likely to engage in active, structured problem solving. Specifically, when ruminative individuals were faced with a stressful life event, they were unable to actively cope with their problems.

Among those experiencing negative affect, rumination appears to affect the adaptiveness of one's immediate responses. In one study, a negative affective state had been induced in participants, and then participants were assigned tasks that were designated as ruminative or distracting and either active or passive (Morrow & Nolen-Hoeksema, 1990). In the ruminative-active condition, participants sorted cards with different positive and negative adjectives describing their emotions along an eight-foot table. In the ruminative-passive condition, participants read sentences that focused on emotions and self-questioning, such as, "I wonder why things turn out the way they do." Participants in the distracting-active condition sorted cards with names of different countries. In the distracting-passive condition, participants read

sentences that stated facts about the world. The researchers found greater decreases in negative affect among participants in the distracting conditions than in participants in the ruminative conditions, and also found that negative affect was reduced for those in the active conditions than in participants in the passive conditions (Morrow & Nolen-Hoeksema, 1990). The results suggest that passive rumination prolongs negative affective states, whereas activity and distraction help to overcome a negative affective state.

Not only does rumination prolong negative affect, but rumination also has detrimental effects on decision-making. For example, Ward, Lyubomirsky, Sousa, and Nolen-Hoeksema (2003) found that when asked to devise a plan to fix a relevant problem, ruminators dwelled more on their plans. This led ruminators to report lower levels of satisfaction, certainty, confidence, and commitment to their plans. In sum, rumination is associated with more prolonged and severe dysphoric mood, as well as hesitancy and a lack of commitment to plans of action.

Perfectionism

Rumination is not the only construct found to enhance negative affect. Maladaptive perfectionism is also associated with dysphoric mood (Harris, Pepper, & Maack, 2008). Maladaptive perfectionism, as measured by the Multidimensional Perfectionism Scale-Frost (MPS-Frost), is characterized by being overcritical of one's own behaviors, as well as by excessive concerns about criticism and others' expectations (Sherry, Hewitt, Flett, & Harvey, 2003). Maladaptive perfectionism is comprised of the Concern over Mistakes (CM) and Doubts about Actions (DA) subscales of the MPS-Frost. Maladaptive perfectionism has been found to correlate reliably with negative affect (Enns, Cox, & Clara, 2005). Maladaptive perfectionism is also associated with poor decision making skills, excessive time spent worrying about making

good decisions, and uncertainty of decision correctness (Frost & Shows, 1993; Frost, Marten, Lahart, & Rosenblate, 1990). Maladaptive perfectionism, furthermore, has been shown to predict dysphoric mood five months after the onset of a negative affective state (Enns et al., 2005). Research indicates that in addition to being associated with dysphoria, maladaptive perfectionism has been found to be correlated with several anxiety disorders (Antony, Purdon, Huta, & Swinson, 1998; Hewitt, Flett, & Ediger, 2006; Stober, 1998).

Not surprisingly, maladaptive perfectionism has been found to be associated with rumination as well. In one study, undergraduate students were instructed to complete a questionnaire which asked them to recall their last disappointing test score and their levels of perceived rumination after they received this score (Harris et al., 2008). The researchers found that maladaptive perfectionism was correlated with both depression and perceived rumination, and that this perceived rumination mediated the relationship between maladaptive perfectionism (on both the Concern over Mistakes and Doubts about Actions subscales) and depression. The results also showed that the brooding subscale of the RRS fully mediated the relationship between maladaptive perfectionism and depression. Maladaptive perfectionists, then, were more likely to ruminate about their disappointments and thus experience more depression as a result.

Opposite of maladaptive perfectionism is adaptive perfectionism. Adaptive perfectionism is comprised of the Personal Standards (PS) and Organization (O) subscales of the MPS-Frost and is characterized by being highly organized, having high personal standards, and high decision-making skills (Blatt, D'Afflitti, & Quinlan, 1976; Frost et al., 1990; Hamachek, 1978). Adaptive perfectionists also have the tendency to perceive difficult activities as challenging and perceive themselves as highly competent. Not surprisingly, studies have shown that there is no correlation between adaptive perfectionism and dysphoria (Harris et al., 2008).

Perfectionism, Rumination, and Affect

Although researchers have investigated the effects of rumination on negative affect, there are still a variety of aspects that have not been examined. First, Harris, Pepper, and Maack's (2008) study proposing rumination's mediating role relied on retrospective self-reports. The researchers also altered the instructions of the RRS to be situation-specific; that is, they asked individuals to assess their levels of rumination after one specific past event (i.e., a disappointing test score) instead of asking individuals to assess their inherent levels of rumination in general. As the researchers acknowledge, asking college students to recall their last disappointing test scores and levels of rumination can be misleading because the feelings of a disappointing score is relative among individuals, and because memories of levels of rumination may be distorted or inaccurate (Harris et al., 2008).

Second, Ward, Lyubomirsky, Sousa, and Nolen-Hoeksema (2003) found that ruminators exhibited less confidence and commitment and more hesitancy and dwelling on their plans than did nonruminators, but the researchers did not assess the role of maladaptive perfectionism or whether this hesitancy and lack of commitment translates to cognitive impairment when asked to actually execute these plans.

Third, Morrow and Nolen-Hoeksema (1990) found that participants in distracting conditions exhibited less negative affect than participants in a ruminative condition. Research, however, has not examined the role of maladaptive perfectionism on negative affect after a ruminative condition and a distracting condition.

Finally, research has solely focused on the effects of rumination and maladaptive perfectionism on negative affect, but it has not explored the effects of maladaptive perfectionism and adaptive perfectionism on positive affect. Because previous work has suggested that positive

and negative affect are independent constructs (Diener & Emmons, 1984; Egloff, 1998; Reich, Zautra, & Potter, 2001; Warr, Barter, & Brownbridge, 1983), research on the effects of adaptive and maladaptive perfectionism on positive affect would be relevant, as a presence of negative affect does not indicate an absence of positive affect and vice versa.

The current study seeks to address the issues presented above. Participants were asked to complete the MPS-Frost and RRS in order to assess their inherent levels of maladaptive perfectionism, adaptive perfectionism, and rumination. Participants were then asked to devise a travel itinerary based on an insufficient budget and execute this plan, keeping track of all changes made. After the task, individuals completed a ruminative task and their levels of positive and negative affect were assessed. Following a short break, participants were given a distracting task and their affect was assessed again.

Based on the literature reviewed above, five hypotheses were proposed. First, maladaptive perfectionism was expected to be positively correlated with negative affect and negatively correlated with positive affect after a rumination induction. Second, I hypothesize that the magnitude of these correlations will be reduced after participants complete a distracting task. Third, adaptive perfectionism was hypothesized to be positively correlated with positive affect after a rumination induction and the strength of this correlation was hypothesized to become stronger after a distracting task, as the literature suggests that adaptive perfectionists approach problems more efficiently than maladaptive perfectionists (Frost et al., 1990). Fourth, because maladaptive perfectionism is marked by low decision-making skills, I hypothesize that this will be negatively correlated with the number of times a plan of action is revised. Finally, I hypothesize that this study will confirm the results found by Harris et al. (2008); specifically,

rumination will fully mediate the relationship between maladaptive perfectionism and negative affect.

Methods

Participants

Seventy-one undergraduate students in introductory level psychology classes at the Ohio State University at Marion participated in this study. Participants were enrolled in the general course (Psychology 100) during winter and spring quarters of 2008 and participated in exchange for 1 experimental credit as part of their grade. Participants ranged in age from 18-45 (mean age = 21.55). Most participants (88.7%) identified as Caucasian/White, followed in frequency by Asian American (5.6%) and African American (4.2%). One participant (1.4%) indicated “other.” A large majority of participants were freshmen (78.9%); of the remaining participants, 8.5% were sophomores, 5.6% were juniors, 4.2% were seniors, and 2.8% were post-baccalaureate students. The majority of participants (60.6%) were female.

Instruments

The Ruminative Responses Scale (RRS; Treynor et al., 2003; see Appendix B) contains 10 items that assess an individual’s trait/inherent levels of rumination. A sample item is, “You think, ‘Why do I have problems that other people don’t have?’” The RRS uses a 4-point Likert scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Items are averaged to arrive at a total score; higher scores indicate higher trait/inherent levels of rumination. The RRS is comprised of two 5-item subscales that measure the brooding and reflective pondering components of rumination. Items for each subscale are averaged in order to arrive at a total brooding score and a total reflective pondering score. Higher scores indicate higher trait/inherent levels of brooding and reflection. The alpha level for the RRS for this study was .82.

The Multidimensional Perfectionism Scale-Frost (MPS-Frost; Frost et al., 1990; see Appendix C) contains 35 items that assess an individual's trait/inherent levels of perfectionism. The MPS-Frost yields an overall perfectionism score as well as six subscale scores: Concern over Mistakes (CM), Doubts about Action (DA), Personal Standards (PS), Organization (O), Parental Criticism (PC), and Parental Expectations (PE). The MPS-Frost uses a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). A sample item is, "My parents set very high standards for me." Items for each subscale were averaged; higher scores indicate higher trait/inherent levels of perfectionism. To create a maladaptive perfectionism scale, the CM and DA subscales were averaged. To create an adaptive perfectionism scale, the PS and O subscales were averaged. The PC and PE subscales were not included in this analysis, as they do not refer to an individual's perfectionism (Harris et al., 2008). The alpha level for the MPS-Frost for this study was .90

The Positive and Negative Affect Scale (PANAS; Watson, Clark, & Tellegen, 1988; see Appendix D) contains a list of 10 positive emotions and 10 negative emotions. The PANAS assesses the extent to which positive and negative affect is being felt at the moment. The PANAS uses a 5-point Likert scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). Items indicating positive affect and items indicating negative affect are averaged separately to arrive at a positive affect score and a negative affect score; higher scores indicate higher levels of positive/negative affect. The alpha levels for positive affect after the ruminative and distracting tasks were .89 and .92, respectively. The alpha levels for negative affect after the ruminative and distracting tasks were .91 and .90, respectively.

The Itinerary Failure Task (IFT; see Appendix G) was developed as a task to engender psychological disappointment in all participants. The IFT asks individuals to create a travel

itinerary using an insufficient budget based on 5 parameters: outgoing flight, lodging, dining, recreation, and incoming flight. Participants are then given an opportunity to execute their plans by selecting options for each parameter from a pre-made notebook of possible combinations. Participants are directed to stop when they have satisfied the criteria of the 5 parameters within the specified budget. Participants are instructed to keep a careful record of their progress, noting each time they revised their initial plan. As the budget for all participants was insufficient to succeed at this task, the total number of revisions made was used as an individual's IFT score.

To induce rumination, a rumination task (see Appendix E) was developed based on the methodology of Morrow & Nolen-Hoeksema (1990), who asked participants to read a series of sentences that described inward focusing. The task in this study contained 10 similar sentences that describe inward focusing. A sample sentence is, "Sometimes I just sit and think."

Instructions ask participants to think about and concentrate on the meaning of each sentence.

To distract participants from rumination, a distracting task was developed (see Appendix F). The task contained 10 sentences similar to those found in Morrow and Nolen-Hoeksema's (1990) study that describe external focusing. A sample sentence is, "It would be interesting to visit other countries." Instructions asked participants to think about and concentrate on the meaning of each sentence.

Procedure

The participants gave written informed consent prior to completing the experiment. All participants were informed of the purpose of the study, were told their responses would remain anonymous, and were given the option to leave at any time. First, participants completed the MPS-Frost and the RRS to assess their levels of perfectionism and rumination. Next, participants were asked to attempt the IFT for 15 minutes. After time expired, participants were given the

rumination task for a period of 5 minutes. After the rumination task, participants were asked to complete the PANAS to assess levels of positive and negative affect. Then, they were given a brief 5-minute recess. Participants were told they could stand, stretch, or talk amongst themselves. Participants were not allowed to leave the room or talk about any part of the experiment. This recess was intended to be analogous to rumination's somewhat postponed effects on cognitions and was modeled after Morrow & Nolen-Hoeksema's (1990) study, which also made use of analogy when studying rumination. Participants were given the distracting task for 5 minutes and asked to complete the PANAS for a second time.

Results

Pearson product-moment correlation coefficients were used to examine the relationships among adaptive and maladaptive perfectionism, affect after a ruminative task and after a distracting task, and the amount of revisions made to a plan. Fisher's *z*-tests were used to examine the change in correlation strength. Linear regression analyses were also used to examine rumination's mediating role between maladaptive perfectionism and negative affect. Table 3 presents the summary of the regression analyses.

The results showed that the proposed hypotheses were partially supported. Specifically, the strengths of the correlations between maladaptive perfectionism and positive affect after a ruminative task and maladaptive perfectionism and negative affect after a ruminative task weakened after a distracting task. The changes, however, were nonsignificant. The changes in strength of the correlation between adaptive perfectionism and positive affect after a ruminative task and after a distracting task were also nonsignificant. Finally, the Doubts about Actions component of maladaptive perfectionism negatively correlated with the number of times a plan is

revised, though this correlation was nonsignificant. Table 1 presents the correlations, means, and standard deviations of the various measures used in this study.

In the first analysis, the correlations between maladaptive perfectionism and both positive and negative affect after a ruminative task following a failure task were investigated. As hypothesized, maladaptive perfectionism was significantly correlated with negative affect after a ruminative task following a failure task ($r = 0.54, p < .01$). Contrary to hypotheses, maladaptive perfectionism was not significantly correlated with positive affect after a ruminative task following a failure task ($r = -0.19, ns$), but the trend was in the predicted direction (see Table 2).

In the second analysis, the strengths of the correlations between maladaptive perfectionism and both positive and negative affect after a distracting task were investigated. Numerically, the strength of the correlation between maladaptive perfectionism and negative affect decreased after a distracting task by a difference of 0.11 ($r = 0.43, p < .01$), but this reduction was shown to be nonsignificant (Fisher's $z = 0.92, ns$). The strength of the correlation between maladaptive perfectionism and positive affect numerically decreased by a difference of -0.08 ($r = -0.11, ns$) after a distracting task and this reduction was also shown to be nonsignificant (Fisher's $z = -0.58, ns$). The trends, however, were in the predicted directions (see Table 2).

The third analysis explored the relationship between adaptive perfectionism and positive affect after a ruminative task and after a distracting task. Contrary to predictions, adaptive perfectionism was not significantly correlated with positive affect after a ruminative task ($r = 0.14, ns$) but, as hypothesized, this relationship increased after a distracting task ($r = 0.24, p < .05$). Although the trend was in the predicted direction, the change in this relationship was not shown to be statistically significant (Fisher's $z = 0.77, ns$).

In the fourth analysis, the correlation between maladaptive perfectionism and the number of revisions made to a plan was examined. Contrary to predictions, maladaptive perfectionism was not significantly correlated with the number of revisions made to a plan ($r = -0.01$, *ns*). Interestingly, however, the Doubts about Actions component of maladaptive perfectionism was negatively correlated with the number of revisions made to a plan. Although this correlation was nonsignificant ($r = -0.22$, *ns*), the trend was in the predicted direction and was very close to significance.

Finally, rumination's mediating role between maladaptive perfectionism and negative affect was investigated. Contrary to predictions and previous studies, rumination was found to partially, not fully, mediate the relationship between maladaptive perfectionism and negative affect. As shown in Fig. 1, the relationship between maladaptive perfectionism and negative affect after a ruminative task following a failure task dropped from $\beta = 0.54$, $p = .001$ to $\beta = 0.33$, $p = .003$ when including rumination as a mediator. The Sobel test demonstrated that this change was significant ($t = 3.01$, $p < .01$). Maladaptive perfectionism, however, was still significant in the model ($\beta = .33$, $p = .003$), indicating that rumination only partially mediated the relationship between maladaptive perfectionism and negative affect.

Discussion

The present study addressed four main areas: a) expanding the work on rumination and perfectionism to include both maladaptive and adaptive perfectionism, as well as both positive and negative affect; b) examining the relationship between both maladaptive and adaptive perfectionism and affect after ruminative and distracting tasks; c) exploring the role of maladaptive perfectionism on cognitive impairment when asked to execute a plan; and d) confirming rumination's mediating role between maladaptive perfectionism and negative affect.

First, maladaptive perfectionism was found to significantly correlate with negative affect, but not positive affect, after a ruminative task. These correlations numerically weakened after a distracting task, but these reductions were not found to be statistically significant.

Second, adaptive perfectionism was not found to significantly correlate with positive affect after a ruminative task. After a distracting task, this correlation numerically strengthened and became statistically significant. The increase (i.e., the difference in correlation between positive affect after a ruminative task and a distracting task), however, was not found to be statistically significant.

Third, maladaptive perfectionism did not correlate with the number of revisions made to a plan. The correlation between the Doubts about Actions component and number of revisions made, though not statistically significant, was found to be in the predicted direction.

Finally, results showed that dispositional rumination partially mediated the relationship between maladaptive perfectionism and negative affect. These results challenge Harris et al.'s (2008) study proposing that rumination fully mediates the relationship between maladaptive perfectionism and dysphoria.

Implications for Theory

This study adds to the literature on rumination and maladaptive perfectionism because it also considers positive affect and adaptive perfectionism. Almost all of the existing work on rumination focuses on dysphoria and negative experiences; research has consistently called for more extensive work on rumination's negative effects (Thomsen, 2006). Studies have also failed to consider adaptive perfectionism and positive affect in terms of rumination. By taking a more holistic approach to fluctuations in affect, future theories can better aid in conceptualizing a more complete view of the interactions among these various constructs.

In addition to considering positive affect, negative affect, maladaptive perfectionism, and adaptive perfectionism, this study is also the first to measure cognitive impairment in a plan-oriented task using experimental methods. Previous research has relied on retrospective self-reports to make these associations and have had mixed results. Indeed, this study proposes a somewhat different mediational hypothesis than that of Harris et al. (2008). This study also incorporates findings from Morrow and Nolen Hoeksema's (1990) exploration of distraction as a useful tool to produce greater remediation of negative affect. Theoretically, then, perhaps distraction is also a useful tool to increase positive affect in maladaptive and adaptive perfectionists.

Implications for Research

Future researchers should continue to explore the associations among these related constructs, as they are still not fully understood. Future work should use larger samples in order to perform more advanced statistical tests on the data. Research should also focus on exploring other variables that may mediate the relationship between maladaptive perfectionism and negative affect; our partial mediation model suggests that one pathway from maladaptive perfectionism to negative affect is mediated by rumination, but the direct path may be accounted for by other mediating variables. Indeed, gender, race, or even age were not considered as mediators and perhaps may be significant. Finally, the association between adaptive perfectionism and rumination should be looked at more closely. As our study suggests a significant relationship between the reflective pondering component of rumination and adaptive perfectionism (see Table 1), perhaps extensive research could test reflective pondering as a mediator between adaptive perfectionism and affect.

Implications for Practice

Although not all of the results in this study showed significance, many of the trends were in the predicted directions. These findings could be integrated with clinical efforts to treat dysphoria in maladaptive perfectionists. Specifically, the results suggest that maladaptive perfectionists may use rumination as a strategy to cope with their failures and disappointments. Practice, then, could focus on teaching maladaptive perfectionists to change their ruminative response style to a more distracting style. Clinicians could also encourage maladaptive perfectionists to have more confidence in their actions, as the Doubts about Actions component of maladaptive perfectionism may be associated with cognitive impairment when trying to enact plans and overcome failure. Finally, maladaptive perfectionists may learn the strategies used by adaptive perfectionists to deal with failures if future research confirms that reflective pondering is a useful tool for these individuals.

Limitations

Various limitations to this study cannot be ignored. The most salient limitation is the small sample size. The sample of 71 undergraduates prevented us from performing more advanced statistical analyses on the data. Also, a larger sample size may perhaps yield statistical significance among variables that did not exhibit them in this study. Another limitation to this study concerns the unknown psychometric properties of the IFT. Although this failure task was developed to produce disappointment and a feeling of failure among individuals, the task did not directly measure these constructs. Although the strong correlation between maladaptive perfectionism and negative affect after rumination suggests that maladaptive perfectionists were more likely to experience negative affect, it is not certain whether the task sufficiently produced disappointment in all individuals. Future analyses should be performed on the task to develop a

more valid instrument. The nature of the distracting task also presents another limitation. The task, based on Morrow and Nolen-Hoeksema's (1990) study is considered a distracting-passive task, as participants were instructed to sit and read sentences. Perhaps a distracting-active task (i.e., moving around the room or sorting cards) would have produced a significant change in negative and positive affect. Finally, research should give participants either distracting or ruminative tasks in order to better look at causal relationships and eliminate carryover effects of a within-subjects design.

Overall, the study attempted to distinguish some of the relationships among affect, rumination, and perfectionism and to incorporate significant findings from previous work that had not been examined simultaneously. Future research will not only help to form an empirically and theoretically sound case for the interactions among these constructs, but will also help practitioners develop more effective treatment approaches for individuals exhibiting these tendencies.

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Table 1

Means, standard deviations, and correlations among the measures (N = 71)

Measures	1	2	3	4	5	6	7	8	9	10	11
1. RRS	----										
2. Brood	.85**	----									
3. Reflect	.85**	.44**	----								
4. MalPerf	.51**	.58**	.29*	----							
5. CM	.48**	.54**	.27*	.96**	----						
6. DA	.40**	.45**	.23	.69**	.47**	----					
7. AdPerf	.19	.08	.24*	.17	.18	.06	----				
8. NAR	.57**	.62**	.35**	.54**	.48**	.48**	.02	----			
9. PAR	-.07	-.24*	.11	-.19	-.13	-.26*	.15	-.02	----		
10. NAD	.49**	.52**	.30*	.43**	.39**	.37**	-.06	.90**	.07	----	
11. PAD	.03	-.15	.20	-.12	-.04	-.28*	.24*	.03	.80**	.09	----
<i>M</i>	26.27	13.31	12.96	106.56	23.61	10.85	47.24	19.59	30.76	18.07	29.06
<i>SD</i>	4.80	2.82	2.84	15.62	6.96	2.63	6.25	8.38	8.07	8.13	9.21

Note. RRS = Ruminative Responses Scale; Brood = Brooding subscale of RRS; Reflect = Reflective pondering subscale of RRS; MalPerf = Maladaptive Perfectionism; CM = Concern over Mistakes component of Maladaptive Perfectionism; DA = Doubts about Actions component of Maladaptive Perfectionism; AdPerf = Adaptive Perfectionism; NAR = Negative Affect after a rumination induction; PAR = Positive Affect after a rumination induction; NAD = Negative Affect after a distracting task; PAD = Positive Affect after a distracting task.

** $p < .01$.

* $p < .05$.

Table 2

Fisher's z-statistics and correlations between both maladaptive and adaptive perfectionism and affect after a ruminative task and after a distracting task (N = 71)

Variable	After Ruminative Task	After Distracting Task	Fisher's z-statistic
<i>Maladaptive Perfectionism</i>			
Negative Affect	.54**	.43**	.92
Positive Affect	-.19	-.11	-.58
<i>Adaptive Perfectionism</i>			
Positive Affect	.14	.24*	.77

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

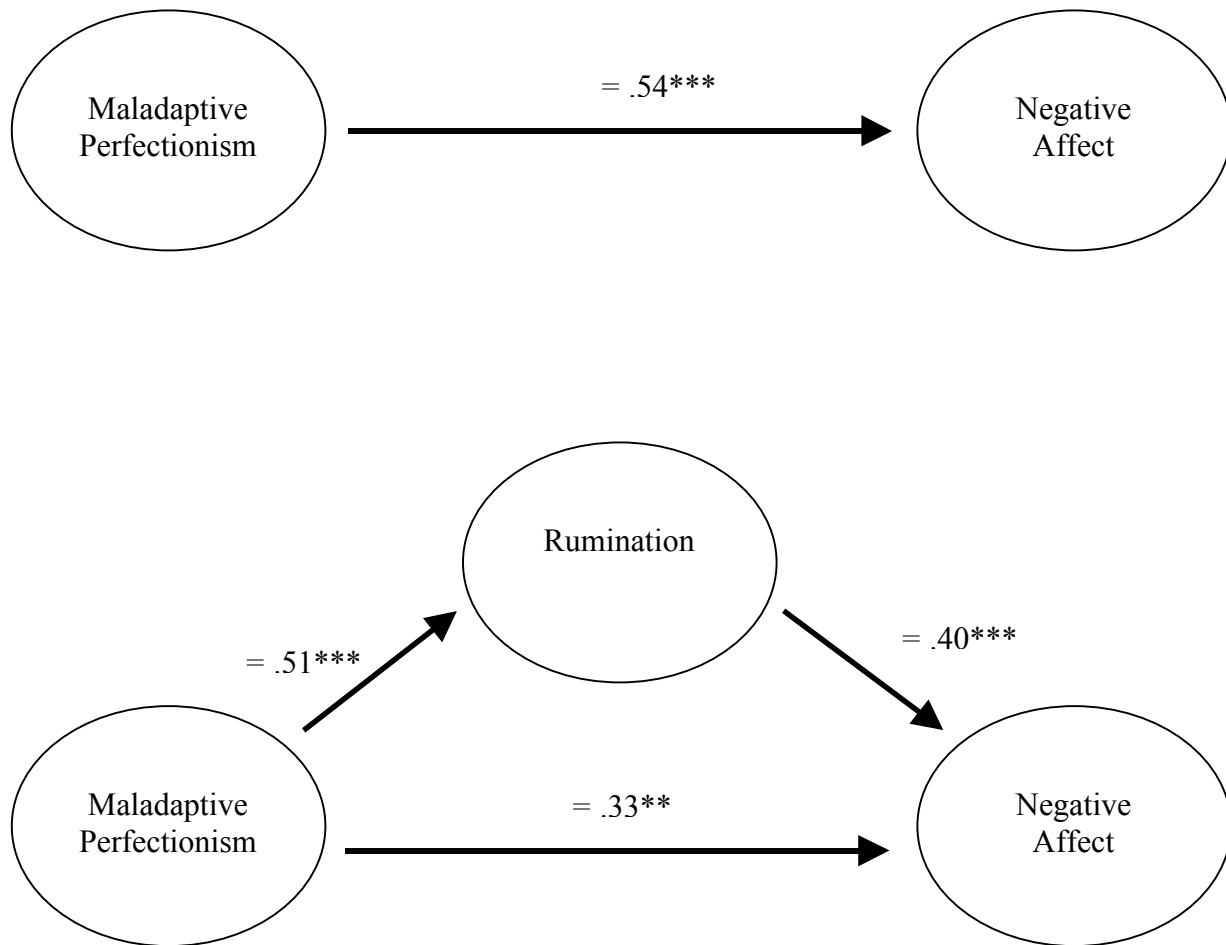
Table 3

Summary of regression analyses for rumination's mediating role between maladaptive perfectionism and negative affect (N = 71)

Variable	<i>B</i>	SE <i>B</i>	—
<i>Step 1</i>			
Maladaptive Perfectionism	.69	.13	.54***
<i>Step 2</i>			
Maladaptive Perfectionism	.42	.14	.33**
Rumination	.70	.19	.40***

Note. ** $p < .01$.
*** $p < .001$.

Fig. 1. Dispositional rumination as partial mediator between maladaptive perfectionism and negative affect after a ruminative task.



Note. $^{**}p < .01$.
 $^{***}p < .001$.

APPENDIX A

DEMOGRAPHIC DATA FORM

Age: _____

Ethnic Identification:

_____ African American

_____ Asian American

_____ Caucasian/White

_____ Native American

_____ Latino

_____ Other: please specify: _____

Year in School:

_____ Freshman-or- high school senior

_____ Post-bac

_____ Sophomore

_____ Graduate student

_____ Junior

_____ Other

_____ Senior

Sex:

_____ Male

_____ Female

APPENDIX B

RUMINATIVE RESPONSES SCALE (RRS)

For each item, please circle the answer that best characterizes your attitudes or behaviors.

1. You think, “What am I doing to deserve this?”

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

2. You analyze recent events to try to understand why you feel a certain way.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

3. You think, “Why do I always react this way?”

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

4. You go away by yourself and think about why you feel a certain way.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

5. You think about a recent situation, wishing it had gone better.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

6. You write down what you are thinking and analyze it.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

7. You think, “Why do I have problems that other people don’t have?”

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

8. You analyze your personality to try to understand why you feel a certain way.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

9. You think, “Why can’t I handle things better?”

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

10. You go someplace alone to think about your feelings.

1	2	3	4
Strongly Disagree	Disagree	Agree	Strongly Agree

APPENDIX C

MULTIDIMENSIONAL PERFECTIONISM SCALE-FROST (MPS-FROST)

For each item, please select the option that best reflects your opinion.

1. My parents set very high standards for me.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

2. Organization is very important for me.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

3. As a child, I was punished for doing things less than perfectly.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

4. If I do not set the highest standards for myself, I am likely to end up a second-rate person.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

5. My parents never tried to understand my mistakes.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

6. It is important to me that I be thoroughly competent in everything I do.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

7. I am a neat person.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

8. I try to be an organized person.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

9. If I fail at work/school, I am a failure as a person.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

10. I should be upset if I make a mistake.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

11. My parents wanted me to be the best at everything.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

12. I set higher goals for myself than most people.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

13. If someone does a task at work/school better than me, then I feel like I failed the whole task.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

14. If I fail partly, it is as bad as being a complete failure.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

15. Only outstanding performance is good enough in my family.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

16. I am very good at focusing my efforts on attaining a goal.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

17. Even when I do something very carefully, I often feel that it is not quite done right.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

18. I hate being less than the best at things.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

19. I have extremely high goals.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

20. My parents have expected excellence from me.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

21. People will probably think less of me if I make a mistake.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

22. I never felt like I could meet my parents' expectations.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

23. If I do not do as well as other people, it means I am an inferior human being.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

24. Other people seem to accept lower standards from themselves than I do.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

25. If I do not do well all the time, people will not respect me.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

26. My parents have always had higher expectations for my future than I have.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

27. I try to be a neat person.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

28. I usually have doubts about the simple everyday things I do.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

29. Neatness is very important to me.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

30. I expect higher performance in my daily tasks than most people.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

31. I am an organized person.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

32. I tend to get behind in my work because I repeat things over and over.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

33. It takes me a long time to do something 'right.'

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

34. The fewer mistakes I make, the more people will like me.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

35. I never felt like I could meet my parents' standards.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

APPENDIX D

POSITIVE AND NEGATIVE AFFECT SCALE (PANAS)

This scale consists of a number of words and phrases that describe different feelings and emotions. Read each item and then write the number in the space provided next to that word. Indicate to what extent you currently feel this way. Use the following scale:

Very Slightly or Not at All 1	A Little 2	Moderately 3	Quite a Bit 4	Extremely 5
-------------------------------------	---------------	-----------------	------------------	----------------

___ 1. **attentive**

___ 2. **strong**

___ 3. **irritable**

___ 4. **inspired**

___ 5. **afraid**

___ 6. **alert**

___ 7. **upset**

___ 8. **active**

___ 9. **guilty**

___ 10. **nervous**

___ 11. **excited**

___ 12. **hostile**

___ 13. **proud**

___ 14. **jittery**

___ 15. **ashamed**

___ 16. **scared**

___ 17. **enthusiastic**

___ 18. **distressed**

___ 19. **determined**

___ 20. **interested**

APPENDIX E

RUMINATION INDUCTION

Read each sentence silently to yourself. Think about and concentrate on the meaning of each sentence.

I often wonder why I feel the way I do.

Some days I feel strange.

Sometimes I just sit and think.

I often wonder why sometimes things don't turn out the way I want them to.

Sometimes I think about my reactions to certain problems.

Sometimes I wonder why some conditions affect me but not others.

I often analyze my feelings and thoughts.

Sometimes I wish that a situation would have turned out better.

I sometimes ask myself why I react a certain way.

I often have problems getting things done or following through with my plans.

APPENDIX F

DISTRACTING TASK

Read each sentence silently to yourself. Think about and concentrate on the meaning of the sentence.

Canada is one of the few developed nations that is a net exporter of energy.

The Olympic Games (often referred to simply as The Olympics or The Games) is an international multi-sport event subdivided into summer and winter sporting events.

It would be interesting to visit other countries.

The Super Bowl and its festivities constitute Super Bowl Sunday, which over the years has become the most-watched U.S. television broadcast of the year, and has become likened to a de facto U.S. national holiday.

Celebrated in areas with large populations of ethnic Chinese, Chinese New Year is considered a major holiday for the Chinese and has had a strong influence on the new year celebrations of its geographic neighbors, as well as cultures with whom the Chinese have had extensive interaction.

The 2008 presidential elections will take place later this year.

In 2007, Tax Day was on Tuesday, April 17, 2007 because April 15 fell on a Sunday and Monday April 16 was Emancipation Day, a legal holiday in the District of Columbia.

New York Restaurant Week is an event held twice a year in which participating restaurants in New York City offer fixed-price lunches and dinners.

The Summit of the Americas is the name for one of a sequence of summits bringing together the countries of the Americas for discussion of a variety of issues.

Ohio is a major producer of machines, tires and rubber products, steel, processed foods, tools, and other manufactured goods.

APPENDIX G

ITINERARY FAILURE TASK (IFT)

Suppose that Dr. Gregory Rose, Dean and Director of the Ohio State University at Marion, must take an emergency trip to New York City for an important meeting. He arrives at 4pm on a Thursday and returns to Ohio early the next morning. Suppose that you must construct his itinerary based on five parameters: recreation, lodging, incoming flight, dining, and outgoing flight. Plan Dr. Rose's trip by putting these five parameters in the order in which you would look for them. After you have constructed your plan, write a few sentences describing how confident you feel if you had to actually execute this plan.

1. _____ 2. _____ 3. _____ 4. _____ 5. _____

Using the provided notebooks, please execute the plan you wrote down on the previous page. Please copy the plan you indicated on the previous page in the spaces provided (under Plan). Each tab in the notebook corresponds to each of the five parameters, and there are three options for each parameter. You must pick each item in the order you indicated. So, for example, if you put dining first and recreation second, you can only look for recreation after you choose an option for dining. Each option has a letter before it (A through O). Please write down the letter that corresponds to your selected option, as well as the price. Using your calculator, please write down the total amount of money spent in the space indicated. For this trip, Dr. Rose cannot spend less than \$1130 and no more than \$1140. Also, remember that Dr. Rose is looking for comfort and quality in his selections, so do not make your judgments on price alone. If for some reason you do not meet the budget and want to make revisions to your plan, you may change the options in the spaces provided. If you wish to make an entirely new plan (change the order in which you look for the items), you may also do so on the back of this sheet. Extra forms can be provided, just raise your hand and I'll come over to you.

Example:**Plan:**

1. outgoing flight 2. lodging 3. dining 4. recreation 5. incoming

Options:

1. A \$50 2. D \$60 3. G \$70 4. J \$80 5. M \$90

Total (1-5): \$350 Between \$1130 and \$1140? __yes X_no

Plan:

1. _____ 2. _____ 3. _____ 4. _____ 5. _____

Options:

1. _____ 2. _____ 3. _____ 4. _____ 5. _____

Total (1-5): _____ Between \$1130 and \$1140? __yes __no

Options:

1. _____ 2. _____ 3. _____ 4. _____ 5. _____

Total (1-5): _____ Between \$1130 and \$1140? __yes __no

Options:

1. _____ 2. _____ 3. _____ 4. _____ 5. _____

Total (1-5): _____ Between \$1130 and \$1140? __yes __no

Options:

1. _____ 2. _____ 3. _____ 4. _____ 5. _____

Total (1-5): _____ Between \$1130 and \$1140? __yes __no

OUTGOING FLIGHT

A: First-class cabin with an extra-wide, leather double seat. Food and beverage included.

Price: \$650

B: First-class cabin with an extra-wide, leather double seat. Food and beverage not included.

Price: \$400

C: Coach. Standard seat. No food and beverage.

Price: \$125

LODGING

D: Hotel in Brooklyn. One hour from Manhattan. Queen-size bed and Wi-Fi included.
Price: \$275

E: Hotel in New Jersey. Two hours from Manhattan. Full- size bed. No other amenities.
Price: \$80

F: Hotel in Manhattan. Queen-size bed, extra large bathroom. Wi-Fi, gym and pool service.
Price: \$400

DINING

G: Japanese restaurant specializing in high-quality sushi.

Price: \$70

H: Mexican restaurant serving fresh, traditional dishes.

Price: \$60

I: Indian restaurant, featuring spicy and mild dishes. Price: \$65

RECREATION

J: Go to Empire State Building observatory, Statue of Liberty, and a bus tour of Manhattan.
Price: \$60

K: Go to the Lincoln Theatre to watch *Hansel und Gretel*, the opera.
Price: \$300

L: Go see a production of Shakespeare's *Hamlet* in an off-Broadway theatre.
Price: \$150

INCOMING FLIGHT

M: Coach. Standard window seat.

Price: \$227

N: Coach. Emergency exit seat.

Price: \$225

O: Coach. Aisle seat in the first row.

Price: \$230