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IRRATIONAL BELIEFS, PERSONALITY DYSFUNCTION, AND NEGATIVE EMOTIONAL OUTCOMES

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IRRATIONAL BELIEFS, PERSONALITY DYSFUNCTION, AND NEGATIVE EMOTIONAL OUTCOMES

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ABSTRACT

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This study examined the associations between dimensions of personality dysfunction, irrational beliefs, and negative outcomes (depression, social anxiety, anger). Participants consisted of 560 adults. Irrationality partially mediated the association between negative affect and depression, negative affect and social anxiety, and the associations between antagonism and anger, and disinhibition and anger. Our results conform to predictions of cognitive models of disordered personality, except that we did not find strong support for a unique role for specific sub-types of irrational beliefs.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Introduction

According to cognitive models of psychopathology, there are interactions between innate temperament and adverse developmental events that engender schemas composed of affective, cognitive, and motivational components (Beck, Davis, & Freeman, 2015). Our schemas have a direct connection to the bases of our personality. In the case of disordered personality, schema-driven interpretations are often faulty, distorted, or dysfunctional and lead to negative emotional outcomes like depression, anxiety, anger (Beck, 2005). In sum, maladaptive schemas and associated dysfunctional beliefs both characterize personality dysfunction and perpetuate it (Pretzer & Beck, 1996). One implication of this model is that irrational thinking mediates the connection between personality dysfunction and negative emotional outcomes. The mediational role of irrational thinking is the focus of this study.

Personality and personality dysfunction and their role in negative outcomes have garnered increasing attention from psychopathology researchers in the past few decades. In order to better understand ourselves and those around us, lay people and psychologists alike generally appeal to personality traits as being both descriptively and causally important. Most lay people, when describing someone, would say things like if they are introverted or extroverted, agreeable or disagreeable they are, how open or closed minded they are, conscientious or unreliable, and if they tend to be neurotic or emotionally stable. These are all fairly standard things that are articulated when describing another person. When we describe who someone is, we typically describe their personality. All people have unique personality trait profiles, despite shared commonalities. One of the many reasons for this is that personality is a very complex concept, one with many theories on

it, all of which in and of themselves are very complex. One of the most well-known and most frequently researched models of personality is defined and described is the Big Five theory of personality (Goldberg, L. R. 1993), or alternatively a very similar model of personality traits known as the Five Factor Model (Trull, T., & Widiger, T. 2013). The fundamental traits according to the Big Five are Emotional Stability, Extraversion, Agreeableness, and Openness to Experience, Conscientiousness, (Goldberg, 1993). The Lexical Hypothesis attempts to explain how through language we are able to describe aspects of personality. The Lexical Hypothesis helped take terms of personality and analyze their definitions to find commonalities (Goldberg, 1993). This was crucial in discovering that five traits were able to account for the description of personality. While the Big Five dimensions are generally seen as fundamental dimensions of normal personality, extreme variants of normal personality, especially when they become problematic, are viewed as examples of personality dysfunction.

The DSM-5 lists five dimensions of personality dysfunction: Negative Affectivity, Detachment, Antagonism, Disinhibition, and Psychoticism (American Psychiatric Association, 2013). Dimensions of personality dysfunction can be assessed using the Personality Inventory for DSM-5-Brief Form (PID-5-BF; Krueger, Derringer, Markon, Watson, & Skodol (2012).

The Cognitive Behavioral Therapy (CBT; Pretzer & Beck, 1996; Ellis, 1994) model of psychopathology suggests that irrational beliefs play a causal role in generating emotional distress. The cognitive model endorses a simple ABC model of emotional distress. In the ABC model, the A stands for the activating event, B stands for beliefs, specifically an individual's beliefs or cognitions about A, and C stands for consequences,

which are usually emotional, but could also be behavioral, or somatic in nature. When an individual entertains irrational beliefs about an Activating event, negative emotional consequences (C) are the result.

Several cognitive theorists (e.g., Pretzer & Beck, 1996; Beck, Davis, & Freeman, 2015), have incorporated the role of personality into their formula for emotional distress. Our focus here is primarily on the B from the ABC model, beliefs. However, it is important to note that the personality dysfunction is associated with increased likelihood of irrational beliefs (e.g., Hopwood, Schade, Kreuger, Wright, & Markon 2013; Bhar, Beck, & Butler, (2012)). The ABC model posits that our beliefs can result in negative emotional consequences. Contemporary models of cognitive psychopathology postulate that personality dysfunction serves as a fertile backdrop from which irrational beliefs can emerge, causing emotional upset. A growing body of empirical research, such as the findings of Samar, Walton, and McDermut (2013) supports the notion that there are strong connections between personality dysfunction and irrational beliefs.

A substantial part of the distress one experiences stems from faulty or dysfunctional interpretations. This study sought to break down irrational beliefs into sub-types to determine if those sub-types have unique associations with specific dimensions of personality dysfunction. In this study we attempted to separate the concept of irrational beliefs into four sub types in addition to global (i.e., total) irrationality. The four categories of Irrational beliefs we assessed are Awfulizing, Demandingness, Low frustration tolerance, Self-depreciation. If there are unique associations between dimensions of personality dysfunction and specific categories of irrational beliefs, clinical work could focus on which types of irrational beliefs should be targeted

depending on the type of personality dysfunction, or emotional distress the client is experiencing.

Although the bodies of research on cognitive models of psychopathology, and trait models of personality are well developed, there is surprisingly little overlap between these two active research domains. Specifically, very little is known about the patterns of associations between dysfunctional beliefs and dimensions of personality dysfunction formulated in the Alternative DSM-5 Model for Personality Disorders 2013). However, as the field of psychopathology moves toward dimensional models of personality it makes sense to devote a more concerted effort to describe the relations between dimensions of personality and dysfunctional beliefs.

There are various reasons this line of research is important. First being that personality is something that affects all people, understanding it can help us as people better understand ourselves. Personality dysfunction is also a large area of importance to study because of its relationship to irrational beliefs and negative emotional outcomes. This also would contribute to the idea that the identification of dysfunctional beliefs may facilitate case conceptualization of patients with prominent personality pathology and highlight targets for psychotherapeutic intervention. Another reason this research is important is because it helps us understand and support the therapeutic concepts practiced in cognitive behavioral therapy. Having effective therapy happens when we can understand the underlying issues, and truly have an understanding for the therapeutic variables. Importantly, this research will also help to improve our understanding of the cognitive mechanisms through which personality traits lead to adverse emotional outcomes.

This study attempted to understand the connections between personality dysfunction (Negative Affect, Detachment, Antagonism, Disinhibition, Psychoticism) and negative emotional outcomes (depression, social anxiety, anger) through the prism of a mediation analysis in which

personality dysfunction operates *through* irrational beliefs to have its effect on negative emotional outcomes. We are attempting to replicate another study (McDermut, Pantoja, Amrami 2019), however with some differences. A major difference is that the study the main aspect of personality looked at in this study is personality dysfunction, primarily Negative Affectivity. Based on the existing body of research, we expected Negative Affectivity would correlate most strongly with Neuroticism; Detachment would correlate most strongly and negatively with Extraversion; Antagonism would correlate most strongly and negatively with Agreeableness, and Disinhibition would correlate most strongly and negatively with Conscientiousness. The negative outcomes we looked at were Depression, Social Anxiety, and Anger/Hostility. Irrational beliefs were assessed with an abbreviated version of the Attitudes and Beliefs Scale 2 (ABS-2), which measures overall Irrationality and has subscales measuring Demandingness, Awfulizing, Low Frustration Tolerance, and Self-Depreciation. Using these variables, we were able to look at how personality dysfunction operates through irrational beliefs to exert their effect on a variety of affective outcomes. We hypothesized that dysfunctional beliefs would mediate the relationship between personality dimensions and important clinical and emotional outcomes of depressive symptoms, anxiety and anger.

There is a lot of research done to support the idea of irrational beliefs and its link to negative consequences, like the ABC model demonstrates. The idea that personality

traits can predict rational and irrational beliefs was found to be supported (Samar, Walton, McDermut 2013). Samar, Walton, McDermut (2013) looked at how different aspects of personality can affect the type of thoughts we have. There were many associations found between varying traits and irrational beliefs. It was found that higher scores on neuroticism were associated with low rationality, high self-downing, high need for achievement, high need for approval, high need for comfort, high demand fairness, and high total irrationality (Samar, Walton, & McDermut, 2013). What this shows is that those with higher levels of Neuroticism display higher amounts of irrational beliefs. Other findings were that high Extraversion scores were associated with low rationality and high Self-Downing. Low Openness to Experience scores were associated with only high need for comfort and high total irrationality. High Conscientiousness scores were associated with high Need for Achievement and high Demand for Fairness (Samar, Walton, McDermut 2013). All of these results provide the theoretical basis that there are distinct associations between personality traits and specific irrational beliefs. This study is in essence a replication and extension of Samar et al. (2013). The aim of this study is to incorporate those associations with the connections to negative emotional outcomes.

In sum, we hypothesized (1) the effect of pathological personality traits (Negative Affect) on depression would be mediated by Irrational Beliefs (specifically Self-Depreciation). (2) We hypothesized that Irrational Beliefs (specifically Awfulizing) would mediate the association between Negative Affect and Social Anxiety. (3) Finally, we expected Irrational Beliefs (specifically Demandingness) to mediate the association between Antagonism and Anger, and Disinhibition and Anger.

Method

Participants

Participants consisted of 560 (260 males, 300 females) native English speakers, age 18 years or older (M = 36.26, Range = 18-71), and were recruited on Amazon Mechanical Turk (MTurk). After obtaining informed consent, those who chose to participate were presented with a total of seven different questionnaires on Qualtrics.com. Demographic data and psychiatric history were collected.

Measures

There were four different assessments used in this study. Those included the Psychiatric Diagnostic Questionnaire (PDSQ) for Social Anxiety and Depression, Symptom Checklist-90-Revised (SCL-90-R) Hostility Scale was our measure of Anger, and an abbreviated form of the Personality Inventory for DSM-5-Brief Form (PID-5-BF; with subscales assessing Negative Affect, Detachment, Antagonism, Disinhibition, Psychoticism) was our measure for personality dysfunction. Irrational beliefs were assessed with an abbreviated version of the Attitudes and Beliefs Scale 2 (ABS-2), which measures overall Irrationality and has subscales measuring Demandingness, Catastrophizing, Low Frustration Tolerance, and Depreciation.

The Psychiatric Diagnostic Questionnaire is a self-report that is screening for those who would meet DSM-5 criteria. The PDSQ consists of 126 (yes/no) questions which assess the symptoms of 13 different DSM disorders. The disorders are found in 5 areas which are Eating disorders, Mood disorders, Anxiety disorders, Substance use disorders, and Somatoform disorders. There is also a psychosis screening which consists of 6-items. Mood disorder looked at was Major Depressive Disorder. Anxiety disorders

assessed consisted of panic disorder, agoraphobia, PTSD, obsessive-compulsive disorder, generalized anxiety disorder and social phobia. In this study we modified the depression subscale, so it was only 13 items as compared to 21 items on the original PDSQ.

The PDSQ subscales' diagnostic performance was consistent and showed predictable results that corresponded with scores that exceeded the cutoff score for the disorders. The subscales were found to have good to excellent levels of internal consistency. Cronbach α was found to be greater than .80 for all but one of the subscales. The mean of the α coefficients was .86. Test-retest reliability was found to be 0.83.

Personality Inventory for DSM-5-Brief Form (PID-5-BF). In their assessment of the psychometric properties of the 25-item personality inventory for DSM-5-Brief Form (PID-5-BF; Krueger et al., 2013), Falkowski, McDermut, and Walton (2016) identified ten items with the highest corrected item total scale correlations from the PID-5-BF. These ten items were extracted and served as our measure of personality dysfunction. Participants were instructed "Please read each item carefully and circle the number that best describes how much you were bothered by that problem during the past week." Response options and quantitative scoring were as follows: were "very false or often false" (0), "sometimes or somewhat false" (1), "sometimes or somewhat true" (2), and "very true or often true" (3). The Disinhibition subscale score was based on the total of items 1 and 2. The Negative Affect subscale score was based on the total the total of items 3 and 4. The Detachment subscale score was based on the total of Items 5 and 6. The Antagonism subscale score was based on the total of Items 7 and 8. And the Psychoticism subscale score was based on the total of Items 9 and 10. The possible range for each two-item subscale was 0 to 6. Finally, all ten items were summed to create

a "PID-5-BF Total Score," with a possible maximum score of 30. In the current study, reliability analysis showed the overall PID-5-BF total score had good reliability, Cronbach's α = .846. The Disinhibition subscale had satisfactory reliability, Cronbach's α = .763. The Negative Affect subscale had satisfactory reliability, Cronbach's α = .767. The Detachment subscale showed questionable reliability, Cronbach's α = .659. The Antagonism subscale had good reliability, Cronbach's α = .839. And the Psychoticism subscale had acceptable reliability, Cronbach's α = .798. The wording and order of the items can be found in the Appendix.

The symptom Checklist-90-Revised (SCL-90-R) Hostility Scale was our measure of Anger. The SCL-90-R is a five-point Likert scale. The directions were as follows: "Please read each one carefully and circle the number that best describes how much you were bothered by that problem during the past week." There were six items in which these directions pertained to that assessed hostility. The participants rated each item from zero to four, with zero being "not at all," one being "a little," two being "somewhat," three being "quite a bit," and four being "extremely. The overall score (minimum score of 0 maximum score of 24) was used to determine level of hostility.

Attitudes and Beliefs Scale II (ABS-II). Participants were asked to answer twelve questions from the ABS-II (DiGiuseppe et al., 1988), with the instructions: "Please select the response that best describes how much you agree with each of the following statements. Use the following scale to choose your responses." Participants rated the questions a four-point scale ranging from zero ("Strongly Disagree") to four ("Strongly Agree"). The 12 items included are the "irrational belief" items identified by Hyland et al.'s (2014) development of an abbreviated 24-item ABS-II, which was derived from the

original 76-item questionnaire (DiGiuseppe et al., 1988). Exclusion of the 12 "rational belief" items identified by Hyland et al. (2014) occurred in order to consolidate the length of the total survey. The items were paired in sets of three with the first three items making up the "Demandingness" scale, the "Awfulizing" scales composed of Items 4-6, Items 7-8 making up the "Low Frustration Tolerance" scale, and the last three items creating the "Depreciation" scale. Total scores on each ABS subscale could range from 0 to 12. Total ABS subscales scores were summed to create a "Total Irrationality" score. The maximum total score possible was 48. In the current study, the 12 items that make up the total ABS-II scale had good reliability, Cronbach's $\alpha = .855$. The Demandingness subscale also had good reliability, Cronbach's $\alpha = .885$, as did the Low Frustration Tolerance subscale, Cronbach's $\alpha = .806$. Reliability tests of the Awfulizing subscale revealed questionable reliability, Cronbach's $\alpha = .669$, but the Depreciation subscale had excellent reliability, Cronbach's $\alpha = .914$. ABS-II scores for twelve participants were dropped due to scoring error. The wording and order of the questions can be found in the Appendix.

Procedure

The data was collected from participants using MTurk. Participants consented to participate and were given the scales listed above along with various demographic questions.

Data Analyses

Data analyses consisted of correlational analyses examining associations between personality and dysfunctional beliefs, along with hierarchical multiple regression

analyses where we controlled for demographic variables. The first thing we did was entered all personality traits variables from the same scale in and then entered dysfunctional beliefs. Descriptive data, Pearson correlations, and regression analyses were conducted using SPSS 21.0. All analyses were conducted using bootstrapping in order to obtain bootstrapped confidence intervals of the unstandardized indirect effect as a measure of significance (Hayes, 2013) as well as control for any issues of normality.

Results

The findings of this study have been consistent with the previous literature on personality. Table 1 shows the means and standard deviations. Here we are able to see what the average score for each measure was and the overall deviations in answers of the participants. Table 2 shows an independent t-test looking at gender differences. The t-test shows that there was not a significant difference in gender for anxiety, depression, or total irrationality. There was however a significant difference in personality and hostility. It was found that males had a statistically significant higher average than females in both personality dysfunction and hostility scores. Table 3 shows correlations, between dimensions of personality dysfunction, irrational belief scales, depression, social anxiety, and anger. We are able to see that the measure of demandingness is not significantly correlated with any of the other assessments. Table 4 is a Hierarchical regression analysis. The regression analysis shows the relationships between our predicting variables with depression, anxiety, and hostility. R2-change is reported at each of the three steps. Negative Affectivity was a significant predictor of all outcome variables (depression, anxiety, and hostility).

In a simple mediation analysis using ordinary least squares regression, Negative Affect indirectly influenced Depressive symptoms through its effect on Irrationality. Table 5 shows the results of the mediation analysis. Negative Affect was positively correlated with Irrationality ($r=.39$, $p<.001$). Irrationality, in turn, was positively correlated with Depression ($r=.38$, $p<.001$). The bootstrapped 95% Confidence Interval (CI) for the indirect effect (.175) did not contain zero (.11 to .25). A finer grained analysis of Irrational belief sub-types shows that Catastrophizing, Low Frustration

Tolerance, and Self-Depreciation, but not Demandingness, were significant mediators of the association between Negative Affect and Depression. Figure 1. Shows the mediation analysis used, it demonstrates how irrationality, specifically Self-Depreciation mediated the effects between Negative Affect and Depression.

Negative Affect also indirectly influenced Social Anxiety through its effect on Irrationality. The bootstrapped CI for the indirect effect of (.161) did not contain zero (.08 to .26). As noted above, Demandingness was the only sub-type of Irrationality that did not significantly mediate the association between Negative Affect and Social Anxiety.

Antagonism and Disinhibition influenced anger indirectly through their effects on Irrationality. The bootstrapped CIs for the indirect effect (.37 for Antagonism through Irrationality; .35 for Disinhibition through Irrationality) did not contain zero (.25 to .52 and .24 to.49, for Antagonism and Disinhibition respectively). Contrary to expectations Demandingness did not significantly mediate the relationship, but Catastrophizing, Low Frustration Tolerance, and Self-Depreciation did mediate the relationship between personality dysfunction and anger.

Discussion

This study bolsters the notion that the identification of dysfunctional beliefs may facilitate case conceptualization of patients with prominent personality pathology and highlight targets for psychotherapeutic intervention. Our findings showed good evidence that personality traits are intimately connected to dysfunctional beliefs, thus supporting

the key role that cognitions theoretically play in our understanding of personality and personality disorders.

Thus, our findings are broadly consistent with the underlying principles of cognitive therapy for personality disorders, which other research-clinicians such as Beck et al., (2015) have written extensively about. However, the specificity of sub-types of irrational beliefs and their unique patterns of association with adverse emotional outcomes was not as clear. That is, contrary to expectations, the same sub-types of Irrational Beliefs predicted all negative emotional outcomes. This is inconsistent with an emerging literature suggesting that there are unique associations between specific types of dysfunctional beliefs and specific personality disorders (Hopwood et al., 2013). Personality in large part is affected by our beliefs. This research demonstrates that connection and can help to explain negative emotional outcomes that emanate from irrational beliefs that in turn emanate from personality dysfunction.

This study is consistent with the two studies done in McDermut, Pantoja, & Amrami 2019, which analyzed the association between dimensions of personality dysfunction, irrational (dysfunctional) beliefs, and adverse emotional outcomes. In alignment with this study, the two studies examined the emotional outcomes, which were, depression, anxiety, and anger. However, McDermut's study looked at satisfaction of life, demoralization, and cynicism, which were not included in this study. Both this study and McDermut, Pantoja, & Amrami 2019, used a mediational model in attempts to show how personality dysfunction when mediated by irrational beliefs contribute to higher rates of negative emotional outcomes.

The relationships between personality, personality dysfunction, rational and irrational beliefs is a key component to this research. The goal of Samar et al. 2013, was to determine if personality could predict patterns of beliefs. The results supported the hypothesis, which is also consistent with the findings in this study. Higher rates of personality dysfunction resulted in higher rates of irrational beliefs.

Methodological limitations suggest cautious interpretation of our findings. Our participants were found using MTurk, one issue with this is the fact that MTurk participants have substantially lower subject well-being than the general population. (Stone et al., 2019). When looking into research that has to do with our personality, the way we view the world, beliefs and negative emotional output, we need to be aware of other possible influencing factors. One of those factors may be quality of life and overall general well-being. This is a factor that could have played a role in the results found in our study specifically however, our results are still congruent with that of other research of its kind. An issue with our sample is that it is homogenous which may not be an accurate representation of the general population. When the sample does not represent the general population, it may not be generalizable to other populations. A way to improve this study would be to use other measures of irrational beliefs. Using other measures of irrational beliefs could find other unique links between irrational beliefs and personality dysfunction. The measure of demandingness had very little association with personality disfunction or the negative emotional outcomes, depression, anxiety, and anger, therefore future research should look to replace demandingness specifically. A cross sectional study was used while attempting to infer causation. Our findings are consistent with a causal model; however, we cannot draw conclusions of causality. Future

research should use longitudinal or experimental methods which will more definitively establish the casual role of irrational thinking causing negative emotional outcomes.

In sum, the primary implication of the results of the mediation analyses is that personality variables operate *through* dysfunctional beliefs to exert their effect on a variety of affective outcomes. This line of research is important because it will help researchers and clinicians (1) achieve an expanded understanding of personality dysfunction; (2) improve our understanding of the cognitive mechanisms through which personality traits lead to adverse emotional outcomes; and (3) provide targets for intervention.

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Table 1

Mean and Standard Deviation of Assessments

Assessment	Mean	Standard Deviation
PID5BF Total	9.311	6.125
PID5BF Negative Affect	2.625	1.869
PID5BF Disinhibition	1.257	1.514
PID5BF Detachment	2.373	1.713
PID5BF Antagonism	1.239	1.571
PID5BF Psychoticism	1.816	1.822
ABS Total Irrationality	20.018	7.568
ABS Demandingness	7.575	3.016
ABS Catastrophizing	6.128	2.759
ABS Low Frustration Tolerance	2.211	2.184
ABS Depreciation	4.088	3.533
PDSQ Social Anxiety Total	6.725	5.004
PDSQ Depression Total	4.366	4.094
SLC90 Hostility Total	5.013	5.014

Note. PID5BF = Personality Inventory for the DSM 5 BF, ABS = Attitudes and Beliefs Scale, PDSQ= Psychiatric Diagnostic Questionnaire, SLC90= Symptom Checklist-90-Revised

Table 2

Independent T-Test of Gender effects on Assessments

Assessment Totals

	t	df	p
PID5BFTotal	3.410	558.000	< .001 [a]
ABSTotalIrrationality	3.013	546.000	0.003
PDSQDepressionTotal	0.431	558.000	0.667
SLC90RHostilityTotal	4.304	558.000	< .001 [a]
PDSQSocialAnxietyTotal	-0.736	558.000	0.462

Note. Student's t-test.

[a] Levene's test is significant ($p < .05$), suggesting a violation of the equal variance assumption

PID5BF = Personality Inventory for the DSM 5 BF, ABS = Attitudes and Beliefs Scale, PDSQ= Psychiatric Diagnostic Questionnaire, SLC90= Symptom Checklist-90-Revised

Table 3

Pearson correlations between dimensions of personality dysfunction, irrational belief scales, depression, social anxiety, and anger.

	NA	DET	ANT	DIS	PSY	DEM	AWF	LFT	SLFD	DEP	ANX	ANG
NA	.77											
DET	.39	.66										
ANT	.17	.35	.84									
DIS	.28	.37	.57	.76								
PSY	.44	.46	.46	.53	.80							
DEM	.07	.02	-.08	-.05	.03	.89						
AWF	.33	.23	.19	.23	.32	.37	.67					
LFT	.30	.44	.90	.63	.76	-.05	.26	.81				
SLFD	.32	.32	.34	.36	.36	-.02	.47	.38	.91			
DEP	.53	.45	.32	.40	.51	-.02	.26	.44	.36	.90		
ANX	.53	.41	.15	.20	.37	.05	.29	.27	.29	.50	.92	
ANG	.37	.42	.54	.57	.53	-.02	.27	.61	.39	.50	.31	.89

Note. Cronbach's alphas are on the diagonal. Coefficients > .14 are significant at $p < .001$. NA = Negative Affectivity, DET = Detachment, ANT = Antagonism, DIS = Disinhibition, PSY = Psychoticism; DEM = Demandingness, AWF = Awfulizing, LFT = Low Frustration Tolerance, SLFD = Self=Depreciation; DEP = Depression, ANX = Social Anxiety, ANG = Anger.

Table 4

Hierarchical regression analyses of demographic variables, Personality Dysfunction (PID), and Irrational Beliefs (ABS), in predicting Depression, Anxiety and Anger.

	Dependent Variable					
	Depression		Anxiety		Anger	
Predictor	ΔR^2	β	ΔR^2	β	ΔR^2	β
Step 1	.04		.057		.116	
Age		-.201*		-.237*		-.289*
Gender		.011		.064		-.149*
Step 2	.371		.292		.366	
PID detachment		.172*		.216*		.114*
PID Disinhibition		.107*		-.059		.255*
PID Negative affect		.328*		.404*		.133*
PID Antagonism		.042		-.052		.235*
PID Psychoticism		.205		.115		.136*
Step 3	.009		.009		.005	
ABS Demand		-.044		-.016		.000
ABS Depreciation		.09*		.05		.078*
ABS CAT		.004		.077		.006
ABS LFT		.081		.172		.065
Total R^2	.42		.358		.487	

Note. Note. PID5BF = Personality Inventory for the DSM 5 BF, ABS = Attitudes and Beliefs Scale, CAT= Catastrophizing, LFT = Low Frustration Tolerance

Table 5

Mediation table displaying the relationship between Personality Dysfunction (Negative Affect) and psychological/emotional outcomes as mediated by dysfunctional beliefs.

Outcome	Standardized Total Effect	Standardized Direct Effect	Unstandardized Indirect Effect	Indirect Effect LLCI	Indirect Effect ULCI
Depression	0.53	0.45	0.18	0.10	0.26
Anxiety	0.15	0.47	0.16	0.08	0.25
Anger	0.37	0.23	0.38	0.26	0.51

Note. Indirect effects are statistically significant if the confidence interval does not contain zero. Confidence levels are 95%; LLCI = Lower Limit of Confidence Interval; ULCI = Upper Limit of Confidence Interval.

Figure 1

*Mediation model predicting depression. Total (c), Direct (c'), and Indirect (ab) Effects.**

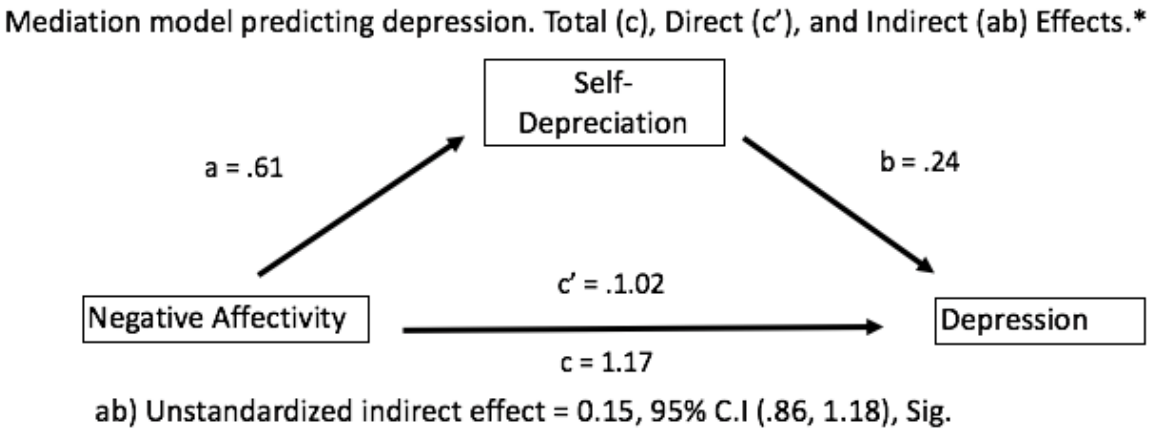
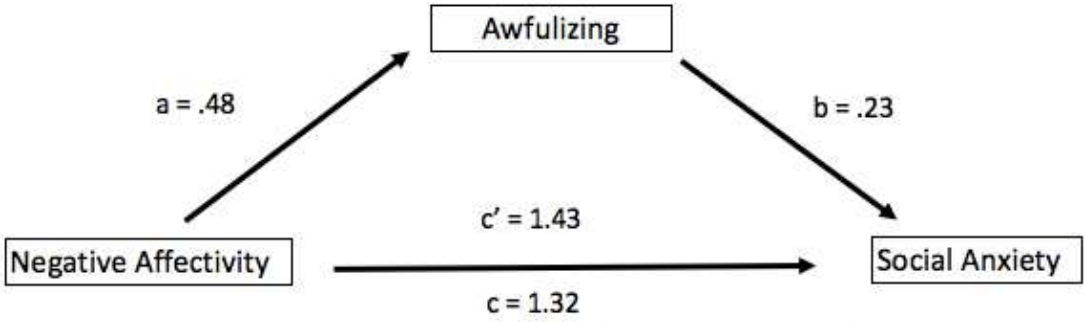


Figure 2

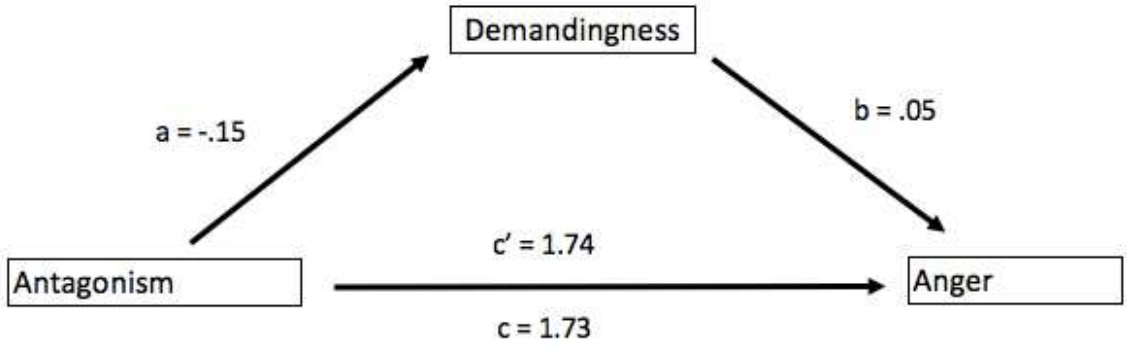
Mediation model predicting Social Anxiety. Total (c), Direct (c'), and Indirect (ab) Effects.*



ab) Unstandardized indirect effect = 0.11, 95% C.I (.05, .19), Sig.

Figure 3.

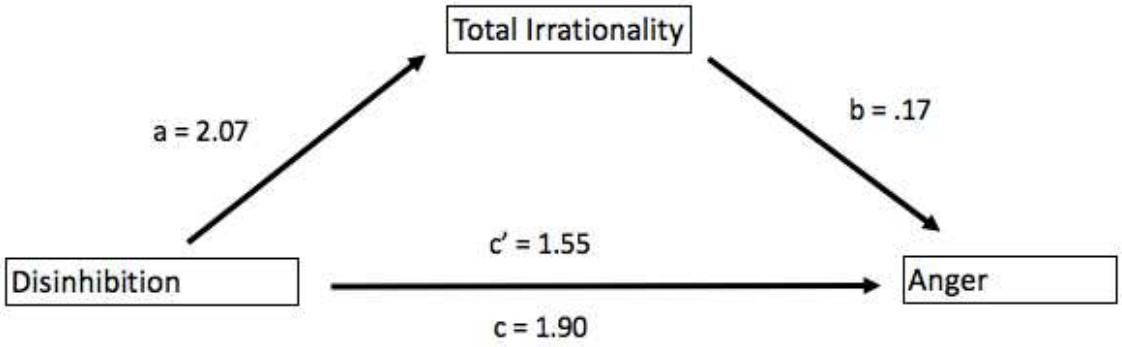
Mediation model predicting anger. Total (c), Direct (c'), and Indirect (ab) Effects.*



ab) Unstandardized indirect effect = -0.01, 95% C.I (-.05, .01), Not Sig.

Figure 4.

Mediation model predicting anger. Total (c), Direct (c'), and Indirect (ab) Effects.*



ab) Unstandardized indirect effect = -.35, 95% C.I (.24, .49), Sig.

Q19

Introduction:
You are being asked to participate in a research study conducted by Dr. Wilson McDermut, of St. John's University. The decision to participate in this study is entirely up to you. This survey should take 15-20 minutes to complete. You can decide to stop participating in this study at any time. If you have any questions, you may contact the principal investigator.

Procedures:
Previous research shows that many types of psychological disorders co-occur frequently because of their association with more pervasive dimensions of personality. But the co-occurrence patterns of some disorders, and where they fit into the hierarchy of personality structure is unclear because of gaps in the research. The purpose of this research is to fill in those gaps by looking at symptoms of eating disorders, problems with attention/hyperactivity, and anger and to try to understand which broad dimensions of personality and patterns of irrational thinking they are associated with. If you agree to participate, we ask that you provide information about whether or not you have ever been in therapy or taken psychiatric medication, and ask about current or past psychological problems. Problem areas include those often seen in community samples like symptoms of depression, anxiety, alcohol abuse, anger, personality problems (e.g., relating to other people), problems with attention and hyperactivity, perceptual disturbances, and paranoia. The questions are drawn from commonly used measures of psychological problems like the Symptom Checklist 90 - Revised, the Psychiatric Diagnostic Screening Questionnaire, and the Personality Inventory for DSM-5 Personality. All information will be de-identified.

Benefits:
There are no direct benefits to you for your participation in this study. However, the information obtained from this study will further advance the knowledge and understanding and why certain disorders tend to occur together within the same individual. MTurk workers will be compensated monetarily.

Risks, Inconvenience, Discomfort:
There are no physical risks involved with participation in this study. The likelihood that you experience any psychological distress or discomfort as a result of your participation is small. However some of the questions may touch on sensitive areas or seem too personal. You can skip questions that bother you, or drop out of the study without penalty.

Alternatives:
The alternative to this study is not participating. Your decision to not participate in this study will not have any negative implications for you; you may decide to withdraw from the study at any time or choose not to answer specific questions.

Confidentiality:
All information from this study will be kept strictly confidential and only be seen by the researchers. Your name will not be attached to the data. If any publications result from this study, you will not be identified. Any data from this study will be reported in aggregate form only; individual data responses will not be reported. Data will be transferred in a HIPAA-compliant manner and will be kept in de-identified, password-protected files.

Questions:
If you have any questions regarding this study please contact Dr. McDermut at (718) 990-5560. For questions regarding your rights as a research participant, please contact Dr. Marie Nitopi from St. John's University's Institutional Review Board at (718) 990-1440.

Thank you very much for your consideration. If you agree to participate, please consent by clicking the button below. Please print a copy of this form for your records.

- ○ I voluntarily give my consent to participate in this research study. I understand that my pressing this button indicates that I have read and understood the information provided here, and that I am at least 18 years old. I understand that my participation is completely voluntary, and that my name will not be tied to the information I am providing. If at any time I do not wish to further participate, I have the right to withdraw my participation.
- ○ I do not wish to participate.

For each question, check the box in the Yes column if it describes how you have been acting, feeling, or thinking. If the item does not apply to you, check the box in the No column.

DURING THE PAST 2 WEEKS...

	Yes	No
Did you feel sad or depressed for most of the day, nearly every day?	○	○
Did you get less joy or pleasure from almost all the things you normally enjoy?	○	○
Were you less interested in almost all of the activities you are usually interested in?	○	○
Was your appetite significantly smaller (or greater) than usual nearly every day?	○	○
Did you sleep at least 1 to 2 hours less than usual (or more than usual) nearly every day?	○	○
Did you feel very jumpy and physically restless, and have a lot of trouble sitting calmly in a chair, nearly every day?	○	○
Did you feel tired out nearly every day?	○	○
Did you frequently feel guilty about things you have done?	○	○
Did you put yourself down and have negative thoughts about yourself nearly every day?	○	○
Did you feel like a failure nearly every day?	○	○
Did you have problems concentrating nearly every day?	○	○
Was decision making more difficult than usual nearly every day?	○	○
Did you wish you were dead, think you'd be better off dead, or have thoughts of suicide?	○	○

→

Major Depression Subscales-- PDSQ

For each question, check the box in the *Yes* column if it describes how you have been acting, feeling, or thinking. If the item does not apply to you, check the *No* column.

YES	NO		DURING THE PAST 2 WEEKS…
		1.	Did you feel sad or depressed for most of the day, nearly every day?
		2.	Did you get less joy or pleasure from almost all things you normally enjoy?
		3.	Were you less interested in almost all of the activities you are usually interested in?
		4.	Was your appetite significantly smaller (or greater) than usual nearly every day?
		5.	Did you sleep at least 1 to 2 hours less than usual (or more than usual) nearly every day?
		6.	Did you feel very jumpy and physically restless, and have a lot of trouble sitting calmly in a chair, nearly every day?
		7.	Did you feel tired out nearly every day?
		8.	Did you frequently feel guilty about things you have done?
		9.	Did you put yourself down and have negative thoughts about yourself nearly every day?
		10.	Did you feel like a failure nearly every day?
		11.	Did you have problems concentrating nearly every day?
		12.	Was decision making more difficult than usual nearly every day?
		13.	Did you wish you were dead, think you'd be better off dead, or have thoughts of suicide?

Social Phobia Subscale -- PDSQ

For Each question, check the box in the *Yes* column if it describes how you have been acting, feeling, or thinking. If the item does not apply to you, check the *No* column.

YES	NO		IN GENERAL
		1.	Do you worry a lot about embarrassing yourself in front of others?
		2.	Do you worry a lot that you might do something to make people think that you are stupid or foolish?
		3.	Do you feel very nervous in situations where people might pay attention to you?
		4.	Are you extremely nervous in social situations?
		5.	Do you regularly avoid any situations because you are afraid you'd do or say something to embarrass yourself?
		6.	Do you worry a lot about doing or saying something to embarrass yourself in any of the following situations?
		6a.	…public speaking?
		6b.	…eating in front of others?
		6c.	…using the public restrooms?
		6d.	…writing in front of others?
		6e.	…saying something stupid when you are in a group of people?
		6f.	…asking a question when in a group of people?
		6g.	…work meetings?
		6h.	…parties or social gatherings?
		7.	Do you almost always get very anxious as soon as you are in any of the above situations?
		8.	Do you avoid any of the above situations because they make you feel anxious or fearful?

SCL-90-R Hostility
Please read each one carefully and circle the number that best describes how much you were bothered by that problem during the past week.

	Item	Not at all	A little	Some-what	Quite a bit	Extremely
1	Feeling easily annoyed or irritated	**0**	**1**	**2**	**3**	**4**
2	Temper outbursts that you could not control	**0**	**1**	**2**	**3**	**4**
3	Having urges to bear, injure, or harm someone	**0**	**1**	**2**	**3**	**4**
4	Having urges to break or smash things	**0**	**1**	**2**	**3**	**4**
5	Getting into frequent arguments	**0**	**1**	**2**	**3**	**4**
6	Shouting or throwing things	**0**	**1**	**2**	**3**	**4**

PID5- Ultra BF
Please read each one carefully and circle the number that best describes how much you were bothered by that problem during the past week.

	Item	**Very False or Often False**	**Sometimes or Somewhat False**	**Sometimes or Somewhat True**	**Very True or Often True**
1.	People would describe me as reckless.	0	1	2	3
2.	Even though I know better, I can't stop making rash decisions.	0	1	2	3
3.	I worry about almost everything.	0	1	2	3
4.	I get emotional easily, often for very little reason.	0	1	2	3
5.	I don't like to get too close to people.	0	1	2	3
6.	I rarely get enthusiastic about anything.	0	1	2	3
7.	I use people to get what I want	0	1	2	3
8.	It is easy for me to take advantage of others.	0	1	2	3
9.	I often "zone out" and then suddenly come to and realize that a lot of time has passed.	0	1	2	3
10.	Things around me often feel unreal, or more real than usual.	0	1	2	3

12- item Attitudes and Beliefs Scale II

Please select the response that best describes how much you agree with each of the following statements. Use the following scale to choose your responses.

0. If you STRONGLY DISAGREE
1. If you SOMEWHAT DISAGREE
2. If you are NEUTRAL
3. If you SOMEWHAT AGREE
4. If you STRONGLY AGREE

1.	I must do well at important things, and I will not accept it if I do not do well	1 2 3 4
2.	It's essential to do well at important jobs; so I must do well at these things	1 2 3 4
3.	I must be successful at things that I believe are important, and I will not accept anything less than success.	1 2 3 4
4.	It's awful to be disliked by people who are important to me, and it is catastrophe if they don't like me.	1 2 3 4
5.	Sometimes I think the hassles and frustrations of everyday life are awful and the worst part of my day.	1 2 3 4
6.	If loved ones or friends reject me, it is not only bad, but the worst possible thing that could happen to me.	1 2 3 4
7.	It's unbearable being uncomfortable, tense or nervous and I can't stand when I am	1 2 3 4
8.	It's unbearable to fail at important things, and I can't stand not succeeding.	1 2 3 4
9.	I can't stand being tense or nervous and I think tension is unbearable.	1 2 3 4
10.	If important people dislike me, it is because I am an unlikeable bas person.	1 2 3 4
11.	If I do not perform well at tasks that are very important to me, it is because I am a worthless bad person	1 2 3 4
12.	When people I like reject me or dislike me, it is because I am a bad or worthless person	1 2 3 4

Vita

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