THE OPTIMAL MARGIN OF ILLUSION HYPOTHESIS: EVIDENCE FROM THE SELF-SERVING BIAS AND PERSONALITY DISORDERS

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It was predicted that the Self-Serving Bias (SSB) would be exaggerated by those with certain personality disorders such as narcissism and reduced by those with other personality disorders such as dependency. Participants were volunteer, undergraduate students. After completing the Millon Clinical Multiaxial Inventory (MCMI-III), participants were given a selection from a textbook to learn. Subsequently they were tested on the textbook material and then given false feedback (either an A or an F) about their performance. After seeing their score, participants' attributions about the cause for the score were measured. The data were analyzed using a series of multiple regressions with the internal-external locus of causality as the criterion variable. Each scale in the MCMI-III was used as a predictor in a separate regression equation along with the success-failure factor, and the interaction of personality scale and the success-failure. Evidence of an unusual self-serving bias would be shown by a significant interaction. Significant interactions of personality disorder and success-failure were found for the narcissistic, histrionic, dependent, and avoidant scales. The analysis of the regression lines for the narcissistic and histrionic scales revealed an increased self-serving for these disorders. dependents and avoidants showed a reduced self-serving bias. The results are discussed in the context of Baumeister's (1989) optimal margin of illusion.

What part do positive illusions have in psychological health? One argument is that positive illusions contribute to normal, well-adjusted individuals' mental health and well-being (Taylor & Brown, 1988; and Taylor & Brown, 1994). Others have argued that such distortions are

maladaptive over the long run, and are not a part of the healthy personality (Colvin & Block, 1994). A third position is that there is some merit in both arguments since there is a curvilinear relationship between positive illusions and mental health (Baumeister, 1989; Snyder, 1989; Taylor, 1989). This curvilinear relationship was discussed in most detail by Baumeister (1989). According to Baumeister, there is an optimal margin of illusion for healthy, psychological functioning — a small positive distortion is optimal. Those who distort less than the optimal level have too realistic a view, which is depressing; behaviorally this may cause them to be hesitant to take on the more challenging projects that could lead to significant successes. In addition, those who distort more than the optimal level would suffer from an inflated view of themselves, which might lead them to undertake projects beyond their capabilities resulting in failure and posing a threat to self. There is some evidence of an optimal level of illusion for one of the most heavily researched positive illusions—the Self-Serving Bias (SSB).

The SSB is the tendency to attribute one's successes to internal factors and to attribute one's failures to external factors. The SSB is clearly established in normal populations (see Campbell & Sedikides, 1999 for a recent review). Consistent with Baumeister's hypothesis there is evidence that both those who exhibit less than normal SSB and those who exhibit greater than normal SSB are not well-adjusted. There is a large body of research demonstrating a reduced SSB for individuals who are depressed (see reviews in Alloy & Abramson, 1988; Robins & Hayes, 1995; Taylor & Brown, 1988). Whether this is a cause or an effect of depression is uncertain; however, it *is* consistent with Baumeister's hypothesis. There is also evidence consistent with the Baumeister hypothesis that those who show an excessive SSB also have psychological difficulties. A small number of studies have shown that individuals with persecutory delusions (schizophrenics and those with delusional disorder) will show an abnormally large SSB (e.g., Kany & Bentall, 1989, 1992; Lyon, Kaney, & Bentall, 1994). Although the cause of the connection between these psychotic disorders and the SSB is uncertain, the finding of psychological disturbance in those with extreme SSB is again consistent with Baumeister's optimality hypothesis. In summary, there does seem to be support for Baumeister's hypothesis when looking at individuals with rather severe disorders.

Would Baumeister's optimality margin of illusions hypothesis find support in a less severely maladjusted population such as individuals with personality disorders? According to the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (DSM-IV; American Psychiatric Association, 1994), those with personality disorders often deviate markedly from the normal in "... ways of perceiving and interpreting

self, other people, and events" (p. 633). The case can be made that certain types of personality disorders should lead to an exaggerated SSB while others should lead to a reduced SSB. The prime candidate for an exaggerated SSB would be an individual with a narcissistic personality disorder. One of the DSM-IV diagnostic criteria for the disorder is that the individual has a grandiose sense of self-importance. This results in their overestimating their abilities and inflating their accomplishments. In addition, those with a narcissistic personality disorder may react to negative feedback with emotions such as anger or rage. Such reactions to successes and failures might lead one to expect that they would show an overestimation of internal causes for their successes and an underestimation of internal causes for failure. Emmons (1987) was the first to speculate that the narcissist would in fact show a larger than average SSB. Several empirical studies support this position. Three studies using the Attributional Style Questionnaire (Peterson et al., 1982) found that narcissism was positively related to making internal attributions for situations involving positive outcomes (Hartouni, 1992; Ladd, Welsh, Vitulli, Labbe, & Law, 1997; Rhodewalt & Morf, 1995). Narcissism did not predict internal-external attributions for negative outcomes. In the one experiment where success and failure was manipulated, Rhodewalt and Morf (1998) found that those with high narcissism scores made more ability (internal) attributions for success than low scorers; however, there were no differences between the attributions of those high or low on the narcissism scale for failures. In summary, there seems to be partial support for an enhanced SSB for narcissists.

Just as there was an obvious candidate for the type of personality disorder that would show an exaggerated SSB, there is an obvious candidate for one that should show a reduced SSB. According to the DSM-IV, those with dependent personality disorder lack self-confidence in their abilities and feel helpless and unable to care for themselves. They may even have a fear of becoming or appearing to be competent. Clearly, it would be expected that those with dependent personality disorder would exhibit a reduced SSB. In spite of the face validity of the prediction of a reduced SSB for dependent individuals, there is only indirect empirical evidence. Blatt, Quinlan, Chevron, McDonald, and Zuroff (1982) proposed that there are two subtypes of depression—dependency and self-criticism. Two studies were conducted that attempted to assess the attributional style of these two subtypes. Using a clinical population, Brown and Silberschatz (1989) found that both subtypes were positively related to internal attributions for the negative hypothetical events on the Attributional Style Questionnaire. Brewin and Furnham (1987) found similar results in a non-clinical population. Thus, measures of the dependency subtype of depression show a re-

duced SSB, but only for negative events. Although not addressing dependent personality disorders per se, the findings do give some indirect support to the predictions of a reduced SSB for those with this disorder.

Whereas the predictions concerning narcissism and dependency are rather straightforward extensions of the DSM-IV criterion, the predictions for the other personality disorders are less clear. The simplest approach to predictions would be to base them on the similarity of each of the personality disorders to either narcissism or dependency. One difficulty with this approach is that there is not a universally agreed upon definition of similarity. DSM-IV provides one definition of similarity, dividing personality disorder into three groupings (Clusters A, B, and C) based on the disorders' descriptive similarities. The Narcissistic Personality Disorder is in Cluster B along with Antisocial, Borderline, and Histrionic Personality Disorders. Cluster B is characterized by disorders that appear dramatic, emotional, or erratic. Dependent Personality Disorder is in Cluster C along with Avoidant and Obsessive-Compulsive Personality Disorder. Individuals in this cluster often appear anxious or fearful. Others have taken a more empirical approach to similarity by conducting factor analytic studies. In a factor analysis of the MCMI-III, Craig and Bivens (1998) found the largest factor was a bipolar factor that they labeled General Maladjustment. Considering those variables that had factor loadings with an absolute value of at least .30, there were negative loadings (better General Adjustment) on narcissistic, histrionic, and obsessive-compulsive disorders, and positive loadings (greater maladjustment) on dependent, avoidant, schizotypal, borderline, schizoid, and paranoid. Using this definition of similarity we might expect an exaggerated self-serving bias for narcissistic, histrionic, and obsessive-compulsive with a reduced self-serving bias for dependents, avoidants, schizotypals, borderlines, and paranoids. Whether the groupings based on DSM-IV or the groupings based on factor analysis are predictors of where the self-serving will occur is a question to be answered in the current research.

In summary, there has been only a limited amount of research on personality disorders and the self-serving bias. The purpose of the current research was for the first time to explore systematically the extent to which there is a relationship between Personality Disorders and the self-serving bias. The expectation was that, consistent with Baumeister's (1989) optimality hypothesis, there would be personality disorders associated with both under and over use of the SSB.

METHOD

PARTICIPANTS

Male (N = 132) and female (N = 293) participants were recruited from a pool of undergraduate students who participated in order to meet part of the requirements of an introductory psychology class.

PERSONALITY MEASURES

The third edition of the Millon Clinical Multiaxial Inventory (MCMI-IIII) was used to measure personality disorders. The 175 items, which are answered yes or no, can be used to construct 14 personality scales and ten clinical scales. The MCMI-III has been found to have test-retest reliability that ranges from .82 to .96 for the various subscales. Validity studies have shown that there are significant correlations between each of the MCMI-III scales and clinical ratings (Millon, 1996).

The Rosenberg Self-Esteem Scale (Rosenberg, 1965) was used to assess participants' self-esteem.

PROCEDURE

Participants were tested in groups of four to 30. The experimenter explained that the purpose of the experiment was to evaluate how well a textbook section clearly conveyed the information; however, first there would be some standard personality inventories to aid in interpreting the results. Participants were first asked to fill out the MCMI-III, the Rosenberg Self-Esteem Scale, and a brief demographic questionnaire. After completing the questionnaires they were asked to read a brief passage about sleep on which they would be tested. The passage was drawn from an introductory-level psychology text and was approximately 1,000 words in length. Participants were given 10 min to study the material. Following the study period, participants were asked to take a 20-item, true-false test that had been designed to be somewhat ambiguous. A 10-min break followed to allow the experimenter to score the tests. The experimenter randomly assigned one of two scores (90% - A, or 60% - F). After receiving their score participants were asked to fill out the Causal Dimension Scale (Russell, 1982). After completion of the questionnaires the participants were debriefed and allowed to ask questions.

DEPENDENT MEASURES

The Causal Dimension Scale. This nine-item measure developed by Russell (1982) was used to measure causal attributions. The scale as-

sessed these attributions according to Weiner's (1979) dimensions of lo-
cus of causality, controllability, and stability. Three items measured
each of these dimensions. The items were presented in a Likert format.
The individual dimension scores were obtained by adding the scores on
the three dimension-related items together. This measure has been
shown to have good reliability and validity (Vallerand & Richer, 1988;
Russell, 1982).

RESULTS

To determine whether specific personality traits intensify or attenuate the
normal self-serving bias, internal-external locus of causality (IE) was used
as the criterion variable in separate analyses of the personality disorder
scales of the MCMI (antisocial, avoidant, borderline, dependent, histri-
onic, narcissistic, obsessive-compulsive, paranoid, schizoid, and
schizotypal). Score on the personality scale, success-failure, and the inter-
actions of the personality scales and success-failure were set as predictors.
The personality scale predictors were centered in keeping with the recom-
mendations of Aiken and West (1991). Evidence of the self-serving bias
would be shown by a significant effect of the success-failure predictor. Ev-
idence of an unusual self-serving bias would be shown by a significant in-
teraction of personality scale with success-failure.

As can be seen in Table 1, the success-failure predictor significantly af-
fected IE scores. Consistent with the self-serving bias, attributions for
success were more internal ($M = 18.72$) than the attributions for failure
($M = 15.41$). Evidence of individual differences in the extent to which the
self-serving bias occurred was shown in the significant interactions of
the success-failure factor with the personality disorder scales for narcis-
sism, dependent, avoidant, and borderline. To explore the nature of the
interactions, the simple slope for the regression of the personality score
on the IE measure was examined within the failure condition and within
the success condition. As can be seen in Table 2, there was a significant
negative relationship between the narcissism score and the IE score
within the failure condition—the higher an individual's narcissism
score the more external the attribution for failure. Table 2 further shows
that the other three personality scores had a significant *positive* relation-
ship between the personality score and the IE score within the failure
condition—the higher the score on the personality scale the more inter-
nal the attribution for failure. There were no significant relationships
found for any of the four personality scales and the IE measure within
the success condition.

Given that there were only effects for personality found within the
failure condition, it was thought that this might have resulted in rela-

TABLE 1. Regressions of Personality Scales and IE Score

Personality Scale	Beta[a]	t	p <
Antisocial	0.122	1.86	0.064
Success–Failure	0.262	5.65	0.001
Antisocial × Success–Failure	–0.024	–0.37	0.709
Avoidant	0.199	2.95	0.003
Success–Failure	0.277	5.99	0.001
Avoidant × Success–Failure	–0.177	–2.62	0.009
Borderline	0.229	3.37	0.001
Success–Failure	0.274	5.91	0.001
Borderline × Success–Failure	–0.155	–2.29	0.023
Dependent	0.238	3.51	0.001
Success–Failure	0.271	5.87	0.001
Dependent × Success–Failure	–0.24	–3.55	0.001
Histrionic	–0.135	–2.04	0.042
Success–Failure	0.28	5.99	0.001
Histrionic × Success–Failure	0.1	1.52	0.13
Narcissistic	–0.169	–2.52	0.012
Success–Failure	0.278	5.99	0.001
Narcissistic × Success–Failure	.170	2.54	.011
Obsessive–Compulsive	–0.16	–2.4	0.017
Success–Failure	0.266	5.76	0.001
Obsessive–Compulsive × Success–Failure	0.099	1.48	0.14
Paranoid	0.148	2.19	0.029
Success–Failure	0.276	5.92	0.001
Paranoid × Success–Failure	–0.069	–1.01	0.311
Schizoid	0.192	2.91	0.004
Success–Failure	0.283	6.09	0.001
Schizoid × Success–Failure	–0.103	–1.56	0.119
Schizotypal	0.18	2.65	0.008
Success–Failure	.282	6.05	0.001
Schizotypal × Success Failure	–0.095	–1.4	0.163

tively weak interactions; thus, the decision was made to analyze the relationship between each personality scale and the IE measure within the failure and within the success condition regardless of whether or not there was a significant interaction. As can be seen in Table 2, there was a significant negative relationship between the histrionic and obsessive-compulsive scales and the IE score within the failure condition; thus, these two personality scores lined up with the pattern found for narcissism. Table 2 also shows that all of the other personality disorders

TABLE 2. Regressions of Personality Scale and IE Score within Failure and Success Conditions

| Personality Scale | Condition | | | | | |
| | Failure | | | Success | | |
	Beta[a]	t	$p <$	Beta	t	$p <$
Antisocial	0.115	1.65	0.101	0.067	1.00	0.320
Avoidant	0.197	2.85	0.005	−0.049	−0.723	0.470
Borderline	0.224	3.26	0.001	0.018	0.27	0.792
Dependent	0.233	3.39	0.001	−0.100	−1.49	0.138
Histrionic	−0.136	−1.95	0.052	0.007	0.11	0.913
Narcissistic	−0.168	−2.42	0.016	0.073	1.09	0.276
Obsessive–Compulsive	−0.159	−2.29	0.023	−0.001	−0.02	0.983
Paranoid	0.147	2.10	0.037	0.059	0.87	0.285
Schizoid	0.194	2.80	0.006	0.050	0.75	0.457
Schizotypal	0.177	2.54	0.012	0.055	0.81	0.418

[a]Negative betas indicate higher personality traits predict more external locus of causation and positive betas indicate higher personality traits predict more internal locus of causation.

(with the exception of antisocial) had a significant positive relationship with the IE score within the failure condition; thus, these measures were consistent with the pattern found for dependents.

Based on the above analyses, it would seem that narcissism, histrionic, and obsessive-compulsive are positively related to the self-serving bias while the other personality disorders (excluding antisocial) are negatively related to the self-serving bias; this grouping is very similar to the predictions based on Craig and Bivens's (1998) factor analysis of the MCMI-III.

Craig and Bivens (1998) argued that the positive end of bipolar Factor 1 was related to depression and low self-esteem. This fits with Baumeister's (1989) ideas that those who show a large self-serving bias will have inflated levels of self-esteem while those with a reduced self-serving bias will tend to be depressed. In order to demonstrate this relationship, correlations of the Rosenberg Self-Esteem Score (RSES) and the depression scale of the MCM-III were made with each of the personality disorder scores. As can be seen in Table 3, the three personality disorders that showed an exaggerated self-serving bias were positively related to self-esteem and negatively related to depression. All the other personality disorders showed the opposite pattern—negative correlation with self-esteem and positive correlation with depression.

TABLE 3. Correlations of Personality Disorder Scales with Self–Esteem and Depression

Personality Disorder	Self–Esteem	Depression
Antisocial	−.192*	.268*
Avoidant	−.487*	.694*
Borderline	−.438*	.671*
Dependent	−.437*	.661*
Histrionic	.381*	−.623*
Narcissistic	.432*	−.430*
Obsessive–Compulsive	.339*	−.382*
Paranoid	−.315*	.522*
Schizoid	−.271*	.590*
Schizotypal	−.334*	.556*

*Correlation is significant at the .01 level (2–tailed).

DISCUSSION

This study demonstrated the normal self-serving bias in that subjects made more internal attributions for success than for failure independent of their personality traits. The results of the study also demonstrated that both exaggerated and attenuated self-serving biases were associated with pathological personality traits. These results seem to support Baumeister's (1989) theory that departures from an optimal margin of illusion can be maladaptive.

Narcissistic, histrionic, and obsessive-compulsive personality traits were found to be associated with an exaggerated self-serving bias in response to failure feedback. This finding is particularly important to the optimal margin of illusion theory since, as Baumeister (1989) points out, few studies have demonstrated that an exaggerated self-serving bias is associated with pathological traits. As Baumeister puts it, "even evidence associating self-defeating or dysfunctional behavior patterns with high self-esteem would be an important step, for past researchers have assumed that the response of people with high self-esteem is the optimal response" (Baumeister, 1989, p. 187). These three personality types were the only ones that were positively correlated with self-esteem and negatively correlated with depression. The personality disorders associated with an attenuated self-serving bias (avoidant, dependent, paranoid, borderline, schizoid, and schizotypal) all negatively correlated with self-esteem and positively with depression.

It is important to note that the above pattern of results is better predicted by the grouping of disorders based on Craig and Bivens's (1998) factor analytic study than on DSM-IV personality disorder clusters.

These findings may be useful in further attempts to reclassify the personality disorders of the DSM-IV (e.g., Blais, McCann, Benedict, & Norman, 1997; Tyrer, 1995).

Although this study found that exaggerated and attenuated self-serving biases are associated with the maladaptive traits in many personality disorders, there are certain qualifications and limitations. One qualification is that the effects were only found in response to failure. It has long been recognized that the self-serving bias is actually made up of two biases—a self-enhancing bias in reaction to success and a self-protective bias in response to failure (Miller & Ross, 1975). It has often been the case that variables do not have the same impact on the two biases. Of greatest relevance to the current research are the findings of a differential effect of self-esteem on the two biases. In one of the most widely cited reviews of the self-serving bias, Zuckerman (1979) concluded that "Overall, it appears that self-esteem effects are obtained primarily after failure, perhaps because self-esteem measures tap the need to protect rather than enhance one's self-evaluation"(p. 261). Given the strong relationship that all of the personality disorders had with the self-esteem measure, it is not surprising that they too only showed effects following failure.

A further qualification is that the results are correlational and caution must be taken in drawing causal inferences. It may be that in some way the attenuated and exaggerated self-serving biases contribute to the lower self-esteem, anxiousness, grandiosity, and need for attention found in these personality disorders. Another possibility is that the personality traits themselves alter the normal and optimal self-serving bias. Anxiety, for example, may alter cognitive processing and result in attention bias toward threatening stimuli (e.g., Hope, Rapee, Heimberg, & Dombeck, 1990; Mattia, Heimberg, & Hope, 1993), which then could alter the normal self-serving bias. Similarly, mood disturbance has been shown to lead to memory biases (e.g., Ruiz-Caballero & Gonzales, 1997; Watkins, Vache, Verney, & Mathews, 1996) and may also alter the normal self-serving bias by causing us to favor the recall of negative and failure experiences. In short, it is not clear whether the altered self-serving bias is simply a by-product of emotional disturbance or whether it in fact plays an etiological role. However, even as a by-product, a greater or lesser than optimal self-serving bias may well have a maintenance role in maladaptive behavior by furthering the lack of confidence, anxiety, emotionality, or grandiosity of the individual. Beck (1976) and Bower (1987) have made similar arguments for a maintenance role of memory bias in depression. Therefore, it may be of therapeutic benefit to directly address deviations from the optimal margin of illusion and restore normal defenses in patients with personality disorders.

Future research should examine the self-serving bias in clinical samples of personality disorders. It may also be useful to study attributions about success and failure on a variety of tasks. In particular it would be interesting to see if specific personality disorders are more prone to exaggerated or attenuated self-serving biases on tasks that are content-specific to the psychopathology. Avoidant personalities, for example, may be more responsive to success or failure on tasks that evaluate social competence. Dependent personalities may respond more to tasks that require independence or decision making. Narcissists may be more responsive to tasks that assess more global characteristics such as IQ (as opposed to achievement) and physical attractiveness. Histrionics, similarly, may respond more to tasks related to physical appearance or social approval.

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