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Humor Types: Replication Using Latent Profile Analysis and Associations with Maladaptive Personality Traits

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The University of Southern Mississippi

HUMOR TYPES: REPLICATION USING LATENT PROFILE ANALYSIS AND
ASSOCIATIONS WITH MALADAPTIVE PERSONALITY TRAITS.

by

Joseph Robert Finn

A Thesis
Submitted to the Graduate School
of The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Master of Arts

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ABSTRACT

HUMOR TYPES: REPLICATION USING LATENT PROFILE ANALYSIS AND ASSOCIATIONS WITH MALADAPTIVE PERSONALITY TRAITS.

by Joseph Robert Finn

May 2015

Martin, Puhlik-Doris, Larsen, & Weir (2003) Humor Styles Questionnaire measures four distinct styles of humor usage. However, examining these humor styles individually fails to account for the combination with which they are used as well as how these combinations may affect the relationship between humor and personality. The present study examined relationships of the humor styles, both individually and in combination, with a broad array of maladaptive personality traits. The incremental validity of accounting for the combinations with which the humor styles are used was examined through the use of hierarchical multiple regressions. Results demonstrated that the humor styles, both individually and in combination, exhibited strong relationships with the measured personality traits, and the directions of these relationships supported the conceptualization of the humor styles as adaptive versus maladaptive. Combinations of humor style use accounted for a statistically significant amount of variance above and beyond that explained by the humor styles individually for 11 of the 33 personality traits measures. Further, results of the present study suggest that the introduction of adaptive humor use for individuals who utilize primarily maladaptive humor can serve to cancel out the negative effects of maladaptive humor. Therefore, the present study demonstrates that adaptive humor use may serve as a buffer against the negative effects of maladaptive humor use.

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CHAPTER I

INTRODUCTION

Beginning in the 1980s, researchers became interested in the potential positive effects of humor (Martin, Puhlik-Doris, Larsen, Grey, & Weir, 2003). Humor has been found to be related to hope (Vilaythong, Arnau, Rosen, & Mascaro, 2003) and has been confirmed to be a buffer against the negative effects of stress (Martin, 2004; Martin et al., 2003) as well as a resiliency factor when an individual is faced with a traumatic event (Kuiper, 2012).

Due to an increased interest in a trait-based approach to both research and assessment of psychopathology, especially personality disorders (Anderson et al., 2013; Samuel, Hopwood, Krueger, Thomas, & Ruggero, 2013), it has become increasingly important to provide empirical evidence of how these personality traits relate to relevant outcomes. Along these lines, the current study provides information about how humor styles and/or particular combinations of humor styles are related to broad, maladaptive personality traits. Such information may provide further support for the clinical utility of measuring styles of humor usage as well as further document the potential adaptive and maladaptive aspects of different types of humor usage.

Martin (2006) suggested that humor usually takes place in a social context, involves cognitive and perceptual processing, evokes a pleasurable emotional response (which he suggests researchers refer to as “mirth” to aid communication and distinguish it from other meanings of humor), and can evoke the behavioral expressions of laughter and smiling. He states that humor as experienced in everyday life comes in many forms,

most of which occur spontaneously. Martin (2006) posited that the psychological functions of humor can be separated into three broad categories. The positive emotion of mirth can serve the cognitive and social functions of improving cognitive flexibility, enabling more creative problem solving, and eliciting more efficient organization and integration of memory, among others (Frederickson, 2001). Humor can also serve the social communication function of conveying implicit messages in an indirect manner and influencing other people in various ways. Finally, humor can serve the psychological function of relieving tension and coping with adversity (Martin, 2006).

Prior to 2003, research examining the relationships between humor and positive mental health outcomes found that existing measures of humor were only weakly related to mental health constructs (e.g., Adams & McGuire, 1986; Gelkopf & Kreitler, 1993; Rotton & Shats, 1996), generally accounting for less than 6% of the variance (Martin et al., 2003). Perhaps even more importantly, many studies finding significant relationships could not be replicated (Korothov & Hannah, 1994; Porterfield, 1987). Martin et al. (2003) suggested that a possible reason for these inconsistent findings was the fact that previous measures of humor failed to distinguish between adaptive and maladaptive humor usage. Rather, humor was measured in a variety of inconsistent manners, usually relating to how funny an individual found certain jokes or whether others saw the individual as having a “good sense of humor” (Martin, 2006). Some researchers have hypothesized that the absence of maladaptive humor usage may be just as important to mental health as the presence of adaptive humor usage (Cann, Stilwell, & Taku, 2009; Martin et al., 2003), and that the lack of explicit measurement of maladaptive humor

usage could also be partly responsible for the mixed and inconsistent results found by previous researchers evaluating outcomes associated with humor.

Martin's Humor Styles/Humor Styles Questionnaire

The Humor Styles Questionnaire (HSQ; Martin et al., 2003) was developed to measure both adaptive and potentially maladaptive uses of humor. The HSQ is intended to measure four types of humor usage, referred to as humor styles. These humor styles were theorized to stem from two main characteristics of humor usage (see Table 1). The first characteristic is related to whether humor is used to enhance the self or enhance others or one's relationships with others. The second characteristic of humor is whether humor is relatively "benign or benevolent" versus humor that is "potentially damaging or injurious" (Martin et al., 2003).

Table 1

Martin's Humor Style

	Benign	Injurious
Enhance Self	Self-Enhancing	Aggressive
Enhance Others	Affiliative	Self-Defeating

Affiliative humor was identified as humor which is benign/benevolent and serves to enhance one's relationships with others. For example, someone high in Affiliative humor tends to use humor in an attempt to increase group cohesion and increase feelings of intimacy within a group. Self-Enhancing humor was identified as humor which is benign/benevolent and serves to enhance the self. For example, someone high on Self-Enhancing humor is likely to use a large amount of internal humor when dealing with

stress. Self-Defeating humor was identified as humor which is potentially damaging or injurious and serves to enhance one's relationships with others. This type of humor refers to an "excessively self-disparaging" use of humor and is considered to be maladaptive due to the fact that it involves "denigration of the self and repression of one's own emotional needs" (Martin et al., 2003, p. 52). For example, someone high on Self-Defeating humor is likely to engage in humor that is self-disparaging and critical of themselves in an attempt to gain or maintain friendships, possibly to the extent that their self-esteem is negatively affected. Aggressive humor was identified as humor which is potentially damaging or injurious and serves to enhance the self. This type of humor is used to belittle others and is considered to be maladaptive due to its "tendency to alienate others and to impair important relationships" (Martin et al., 2003, p. 52). For example, someone high in Aggressive humor is likely to, in an attempt to improve their own self-esteem, constantly berate others around them, to such an extent that the berated individuals lose interest in maintaining a relationship with the Aggressive individual.

Martin et al. (2003) found that each of the humor styles were related to a number of mental health and personality constructs. For example, he found that the adaptive humor styles (Affiliative and Self-Enhancing) were both negatively correlated with depression and anxiety and positively correlated with self-esteem, Extraversion, and Openness. The maladaptive humor styles (Aggressive and Self-Defeating) were both negatively correlated with Agreeableness and Conscientiousness, as well as positively correlated with Neuroticism, hostility, and aggression. While the patterns of these associations were as predicted, it is worth noting that the relationships were relatively small, with most correlations less than $r = .30$. Therefore, while the four humor styles can

be reliably measured and add an important piece to the theoretical foundation of the psychology of humor, it is possible that their relationships with various mental health constructs are being attenuated by not accounting for the manner in which they potentially interact. However, little research has been conducted examining the effects of humor style combinations on mental health constructs. It is possible that the additive or interactive effects may be stronger than incremental effects of any one humor style, when studied at a multivariate level. For example, an individual with high levels of Self-Defeating humor, in combination with high levels of Affiliative humor might have higher levels of well-being than someone with high levels of Self-Defeating humor in combination with high Aggressive humor. Two studies have addressed this question using cluster analysis and are described in the subsequent sections.

Galloway's Humor Clusters

Galloway (2010) noted that, while there has been an increase in the study of humor, the major focus has been on individual humor styles rather than the combinations of styles characteristically used. Galloway noticed that very few individuals report using humor in only one of the four humor styles, so he chose to examine the degree to which individuals used each humor style in combination with other styles. To identify groups of people with similar configurations of humor styles, Galloway utilized a cluster analysis. Through the use of *k*-means cluster analysis, a four-cluster solution was found to be most parsimonious. *K*-means cluster analysis utilizes *K* prototypes, centroids of clusters, to characterize the data by minimizing the sum of squared errors (Fraley & Raftery, 1998). This four-cluster solution indicated groups of people defined by four distinct combinations of humor styles: (1) above average on all four styles, (2) below average on

all four styles, (3) above average on the adaptive styles and below average on maladaptive styles, and (4) above average on the maladaptive styles and below average on the adaptive styles (Galloway, 2010). Galloway also evaluated correlations between membership in the four identified clusters and the Big Five personality traits and self-esteem. These correlations were then compared to correlations between the individual humor styles and the same measures.

As mentioned previously, correlations between individual humor styles and a number of mental health and personality constructs tended to be below the $r = .30$ level. Similar to previously reported findings (Martin et al., 2003), Galloway (2010) found that most correlations between individual humor styles and the Big Five personality traits were below $r = .4$, with the exceptions of the correlation between the Affiliative humor style and Extraversion ($r = .50$) and the correlation between the Aggressive humor style and Agreeableness ($r = -.43$). However, when Galloway (2010) evaluated correlations between humor style cluster membership and the Big Five personality traits and self-esteem, the correlations were generally larger in magnitude than those reported by Martin et al. (2003) between individual humor styles and these constructs; specifically, five of the correlations were greater than $r = .40$ and two correlations were greater than $r = .50$. This supports the hypothesis that unique combinations of the four humor styles may yield important information above and beyond the contribution of the main effects of the four humor styles.

Leist and Muller's Humor Types

Leist and Muller's (2012) hierarchical cluster analysis of humor styles yielded a three-cluster solution, which was then validated through the use of *k*-means clustering.

The first cluster was characterized by above average levels of all four humor styles, and was thus labeled “Humor Endorsers”. The second cluster was characterized by below average levels of all four humor styles, especially Self-Defeating, and was thus labeled “Humor Deniers”. The third cluster was characterized by slightly above average Affiliative humor, highly above average Self-Enhancing humor, and below average Aggressive and Self-Defeating humor, and was thus labeled “Self-Enhancers” (Leist & Muller, 2012). Although Galloway determined a four-cluster solution was better than a three-cluster solution, it is noteworthy that these three clusters are quite similar to three of the four clusters identified by Galloway (2010).

Differences in self-esteem across humor type clusters were analyzed. Humor Endorsers (those who had above average on all humor styles) scored higher ($z = 0.00$) on measures of self-esteem than Humor Deniers (those who had below average scores on all humor styles; $z = -0.36$). Likewise, Self-Enhancers scored higher ($z = 0.51$) on the self-esteem measure than Humor Endorsers ($z = 0.00$). Self-Enhancers also scored higher ($z = 0.32$) than Humor Deniers ($z = -0.23$) on a measure of life satisfaction.

Finn and Arnau’s Latent Profile Analysis of Humor Styles

As the discovery of humor clusters as well as the increase in relationship size occurred in an isolated study, the logical next step in the process was replication of the clusters in a new sample and with a more rigorous statistical procedure. Finn and Arnau (2014) utilized latent profile analysis (LPA) and found evidence for four humor classes. LPA was chosen over cluster analysis as it is a latent variable modeling approach that allows for test of fit for different hypothesized models with different numbers of latent classes.

The first class, characterized by below average use of adaptive humor styles and slightly above average use of maladaptive humor styles, was named “Maladaptive”.

Membership in this class was positively related to depression, anxiety, hopelessness/helplessness, and psychopathy, and negatively related to hope, social support/belongingness, optimism/spiritual strength, extraversion, agreeableness, conscientiousness, openness, self-meaning, self-esteem, and satisfaction with life.

The second class, characterized by relatively average use of all four humor styles, was named “Average”. Membership in this class was negatively correlated with emotional stability and narcissism. The third class, characterized by above average use of adaptive humor styles and below average use of maladaptive humor styles, was named “Adaptive”. Membership in this class was positively related to hope, social support/belongingness, optimism/spiritual strength, agreeableness, conscientiousness, openness, emotional stability, and self-esteem. It was negatively related to depression, anxiety, stress, hopelessness/helplessness, and psychopathy.

The final class, characterized by above average use of adaptive humor styles, above average use of the Aggressive humor style, and relatively average use of the Self-Defeating humor style, was named “Mixed”. Membership in this class was positively associated with hope, social support/belongingness, optimism/spiritual strength, extraversion, openness, narcissism, and self-esteem. It was negatively related to hopelessness/helplessness.

It is again important to note differences in the four humor classes found by Finn and Arnau (2013) and the cluster analysis solutions from Galloway (2010) and Leist and Muller (2012). The four-class solution presented by Finn and Arnau closely resembles

that of Galloway, with one key distinction. Whereas Galloway found a class characterized by below average use of all humor styles, this class was replaced in the Finn and Arnau solution by a class characterized by average use of all humor styles. This also distinguishes the Finn and Arnau solution from the three-cluster solution discovered by Leist and Muller, who also found a class characterized by below average use of all humor styles.

Computerized Adaptive Assessment of Personality Disorders (CAT-PD)

The Computerized Adaptive Assessment of Personality Disorders (CAT-PD) is a model of personality designed to develop a comprehensive set of higher and lower order personality traits that can be used to describe personality pathology (Simms et al., 2011). The CAT-PD has a hierarchical structure with narrow, specific traits at the lower end comprising the five broad higher-order constructs. Though the computerized adaptive measure is still in the process of development, a static version of the assessment has been released, which measures 33 personality traits comprising five broad constructs: Negative Emotionality, Positive Emotionality, (Dis)Constraint, Antagonism, and Oddity (Simms, 2013).

Negative Emotionality refers to a general tendency to experience negative emotions such as anger, depression, anxiety, and guilt, and is a defining characteristic of most psychopathology. The Negative Emotionality facets measured by the CAT-PD include Affective Lability, Anxiousness, Depressiveness, Self-harm, Submissiveness, Relationship Insecurity, and Health Anxiety. Simms et al. (2011) provides detailed descriptions of all of the constructs measured by the CAT-PD, from which they are adapted and summarized here. Affective Lability measures an individual's tendency to

experience rapid changes in emotion and mood as well as an inability to adapt to life stressors. Anxiousness measures an individual's proneness to experiencing feelings of worry, fear and panic as well as a tendency to engage in catastrophizing. Depressiveness measures a tendency to experience sadness, hopelessness inappropriate guilt and to have a generally negative world view. Self-Harm assesses an individual's tendency to have thoughts of engaging in both suicidal and non-suicidal self-directed violence.

Submissiveness refers to an individual's tendency to prioritize the needs of others over one's own needs to a maladaptive extent. Relationship Insecurity assesses insecurity in social relationships, as measured by levels of jealousy, fear of abandonment, and negative expectations of others, as well as difficulties in coping with criticism. Health Anxiety measures a preoccupation with physical health and a tendency to ruminate on the possibility of future health problems.

Positive Emotionality is a construct characterized by high levels of sense of self related to high levels of positive emotionality at the high end of the dimension and feelings of worthlessness, withdrawal, and loss of interest at the low end of the spectrum. On the CAT-PD, it is comprised of Anhedonia, Exhibitionism, Grandiosity, Social Withdrawal, Emotional Detachment, and Romantic Disinterest. Anhedonia refers to a lack of positive emotion combined with low energy levels, a relative lack of interest in things, and psychomotor slowness. Exhibitionism refers to overt attention-seeking behaviors and exaggerated expressions of emotion. Grandiosity measures an aggrandized sense of self. Social Withdrawal measures an individual's avoidance of social interactions either due to a sincere disinterest in social situations or as a result of social anxiety.

Emotional Detachment measures difficulties experiencing and expressing emotions.

Romantic Disinterest measures a general lack of desire for intimacy with others.

(Dis)constraint refers to a spectrum of behavior ranging from behavior that is completely uncontrolled to behavior that is overly restrained. It is comprised of Non-planfulness, Non-perseverance, Risk Taking, Perfectionism, Irresponsibility, Workaholism, and Rigidity. Non-planfulness measures an individual's tendency to act on the spur of the moment without considering the consequences. Non-perseverance refers to an inability to maintain focus on tasks that an individual does not find enjoyable. Risk-Taking measures an individual's tendency to engage in potentially dangerous behaviors. Perfectionism refers to an inability to accept work that is not without flaw. Irresponsibility measures failure to fulfill obligations in important life areas. Workaholism measures a focus and value placed on achievement as opposed to interpersonal relationships. Rigidity an inability to take the perspective of others into consideration due to a rigid adherence to one's own life views.

Antagonism refers to hostility, aggression, or conflict with others and is comprised of Callousness, Manipulativeness, Domineering, Norm Violation, Hostile Aggression, Anger, and Rudeness. Callousness refers to a disregard for the rights of others combined with a lack of sympathy and empathy. Manipulativeness refers to the taking advantage of others in dishonest ways in order to achieve one's goals. Domineering describes a desire and need for power and control as evidenced in interpersonal relationships. Norm Violation "reflects a general disregard for and active rejection of social rules and convention, a history of engaging in illegal or antisocial acts, and a pattern of disobedient and defiant behavior towards authority figures". Hostile

Aggression refers to hostile and violent behavior that is either instrumental or reactive in nature. The scale also assesses for a tendency to act vindictively or sadistically. Anger “assesses the tendency to experience and express emotions ranging from frustration and irritability to explosive temper and rage.” Rudeness measures a lack of tact in interpersonal communication as evidenced by interpersonal insensitivity.

Oddity refers to behavior that is not in line with that expected in an individual’s society and is comprised of Unusual Beliefs, Unusual Experiences, Cognitive Problems, Fantasy Proneness, Peculiarity, and Mistrust. Unusual Beliefs measures the tendency to have thoughts and beliefs that are not based in reality, including the belief that one has certain powers that others do not. Unusual Experiences assesses the tendency to have experiences not based in reality, including perceptual distortions and dissociation. Cognitive Problems refers to a range of mental deficits, including problems with memory, confusion, and disorganized thoughts. Fantasy Proneness “appraises the tendency to fantasize, daydream, and become fully engrossed in one’s thoughts and experiences, sometimes to the extent of becoming distracted and losing sight of reality.” Peculiarity refers to the oddness of one’s behavior, speech, mannerism, and appearance. Mistrust “appraises the tendency to question the honesty, motives, fidelity, loyalty, and believability of others, as well as a general attitude of jaded negativity, especially a general disbelief in the integrity or professed motives of others.” The CAT-PD was chosen given that it assesses a wide array of maladaptive personality traits that are believed to form the basis of all personality disorders. Further, the pervasive and impairing nature of personality disorders leaves individuals who are suffering from these disorders at greater risk for a number of negative outcomes, including non-suicidal self-

injury, imprisonment, and suicide. Therefore, examining the relationships between the humor types and the CAT-PD provides an opportunity to examine potential areas of intervention for individuals suffering from these disorders.

Purposes of the Present Study

The purposes of the present study were twofold. The first, the existence and number of humor types was replicated and further investigated using latent profile analysis (LPA) in order to evaluate the replicability of the classes found by Finn and Arnau (2014). Although Galloway (2010) and Leist and Muller (2012) found discrepant results regarding the optimal number of humor types, it was thought that the present study may resolve the discrepancy by using a more rigorous latent variable modeling procedure. LPA is a better choice to determine the optimal number of types given that it provides fit indices to specifically test the fit of the various models to the data, postulating different numbers of latent classes (types).

The second purpose of the proposed study was to evaluate the relationships between humor types and both the maladaptive personality traits of the CAT-PD model as well as the adaptive traits of hope and self-esteem and to determine whether humor types serve to explain variance for these constructs above and beyond that explained by the individual humor styles. It was hypothesized that the humor types would explain a significant amount of incremental variance when added as predicting variables in the second step of a hierarchical regression controlling for the individual humor style scores entered in the first step. Given the various findings of the adaptive and maladaptive aspects of different humor styles, exploring how the humor styles (and humor types) map onto a broad, comprehensive array of maladaptive and adaptive traits will help further

explicate the nomological network of the humor style constructs and help us better understand the personality traits associated with different humor styles, both individually and in various combinations.

Significance of the Present Study

Not only can the present study provide further information about how humor styles interactively relate to personality, there are clinical implications as well. Intuitively, high use of maladaptive humor styles could potentially contribute to the development of interpersonal risk factors for psychopathology, such as loss of relationships and isolation. Strong relationships with the CAT-PD-SF dimensions would provide support for this idea, as very high or low scores on the CAT-PD-SF are considered to be maladaptive and are related to psychopathology. The present study provides information about how humor styles and/or particular combinations of humor styles are related to broad maladaptive personality traits.

In a previous study, Finn and Arnau identified a humor type characterized by below average use of adaptive humor styles and above average use of maladaptive humor styles. This class correlated significantly and positively with depression, anxiety, hopelessness, and psychopathy and significantly and negatively correlated to hope, social support, self-esteem, and satisfaction with life. These correlations support the notion that an individual with a humor profile characterized by high levels of maladaptive humor use coupled with low levels of adaptive humor use is at a higher risk for the development of psychopathology. Clinically, behavioral techniques may target maladaptive humor usage in an attempt to help these individuals use humor in a more adaptive manner.

The present study also has the potential to contribute significantly to the current understanding of how humor styles interactively relate to mental health. Previous studies have identified distinct and measurable combinations of humor style usage, though have disagreed on the number of types present (Galloway, 2010; Leist & Muller, 2012). Through the use of LPA, Finn and Arnau (2013) identified four distinct humor types, as well as how these humor types correlated with a number of mental health outcomes. Replication of these humor types in the proposed study would provide confidence in utilizing a four-class humor class model for future studies of humor types.

CHAPTER II

METHOD

Participants

The sample consisted of 267 undergraduate students at the University of Southern Mississippi. Participants participated either in order to fulfill research obligations for undergraduate psychology courses, or as extra credit for various other psychology courses. Participants completed a number of self-report measures in an online format using the Qualtrics survey service. Participants ranged in age from 18 to 58 ($M = 21.77$, $SD = 6.6$) and were primarily Caucasian (63.2%) and female (78.5%). Other ethnicities included within the sample are African Americans (28.4%), Asian Americans (1.9%), Native Americans (1.5%), and those who identify as multi-racial (3.4%).

Measures

Humor Styles Questionnaire (HSQ; Martin et al., 2003). The HSQ is a self-report measure that yields scores on four scales corresponding to different styles of using humor. This measure contains 32 items rated on a seven-point scale (1 = “totally disagree” - 2 = “totally agree”), with each of the four scales measured by 8 items. Cronbach’s alphas for the scores from the HSQ scales have consistently been found to be between .77 and .81 (Hampes, 2005; Martin et al., 2003). Reliability scores for the current sample were similar to those found in previous studies, ranging from .746 (Aggressiveness) to .843 (Self-Enhancing).

During the development of the measure, the HSQ was correlated with other measures of humor use. The significant correlations were primarily with the Affiliative and Self-Enhancing humor styles, and ranged from .27 to .65 (Martin et al., 2003).

Theoretically, this is what was expected, as previous measures of humor use failed to account for maladaptive humor. In an evaluation of inter-rater reliability, couples were asked to rate their partner's tendency to use humor in each of the four different styles. Each individual was then administered the HSQ. The results showed that partners' assessments of an individual's use of a humor style was significantly correlated with their own endorsement of that particular style on the HSQ. Partners' assessments of a given humor style were not correlated with each individual's endorsement of the three other humor styles measured by the HSQ. For example, if an individual self-reported high use of the Affiliative style and low use of the Aggressive style, their partner's assessment would likely match this report (Martin et al., 2003). This provides evidence for inter-rater reliability of scores from the HSQ scales as well as convergent and discriminant validity. Exploratory and confirmatory factor analyses support the four-factor structure of the HSQ (Martin et al., 2003).

CAT-PD-SF (Simms et al., 2011). The CAT-PD is a broad, self-report measure of personality currently in development. The authors have released a Static Form of the measure (CAT-PD-SF) consisting of 216 questions on a 5-point Likert scale, ranging from "very untrue of me" to "very true of me." The CAT-PD is hierarchical in nature and measures five broad, higher-order factors comprised of 33 lower-order personality constructs relevant to the assessment of personality disorders (Simms et al., 2011). The five broad, higher order factors are Negative Emotionality, Positive Emotionality, (Dis)constraint, Antagonism, and Oddity (Simms, 2013). The CAT-PD-SF does not provide scores for the five higher order factors, but reliability of the lower-order constructs has been demonstrated to be good, with all alphas greater than 0.80 (Simms,

2013). Reliability for the current sample was good, with Cronbach's alphas ranging from .738 (Exhibitionism) to .891 (Self-Harm).

The CAT-PD was developed utilizing the trait-dimensional approach, in which traits underlying personality disorders are measured. Simms (2013) enumerates a number of reasons a trait-dimensional approach is superior to a categorical approach in the assessment of personality disorders. First, dimensional scales are more homogenous and comprehensive than categorical models and demonstrate better alphas and temporal stability. Perhaps most importantly, trait-dimensional models do not make assumptions about categories (Simms, 2013). This has been a problem with the previous categorical method of assessment for personality disorders and has led to excessive comorbidity of diagnoses, within-diagnosis heterogeneity, low stability of categorical personality disorder diagnoses, and poor convergent validity across measures (Simms, 2013).

Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995). The DASS-21 assesses severity of symptoms of anxiety, depression, and stress over the previous week. The Anxiety scale assesses autonomic arousal, situational anxiety, and the subjective experience of anxious affect. The Depression scale assesses dysphoria, anhedonia, and hopelessness. The Stress scale measures levels of chronic arousal (Henry & Crawford, 2005). While the measure is a shortened version of the DASS-42, research has demonstrated similar factor structures and reliability coefficients between the two versions. The DASS-21 contains 21 items on a four-point rating scale (did not apply to me at all-applied to me very much or most of the time), with each of the three scales measured by seven items. Previous studies have reported alpha reliability scores for the DASS-21 ranging from .87 and .94 (Antony et al., 1998). Reliability for the DASS-21 in

the present sample was excellent, with alphas of .899 for Depression, .850 for Anxiety, and .824 for Stress.

Snyder Hope Scale (Snyder et al., 1996). The Snyder Hope Scale was utilized to assess participants' overall level of hope as well as two facets of hope: agency and pathways. Agency refers to "a sense of successful determination in meeting goals in the past, present, and future" (Snyder et al., 1991, p. 570). Pathways refers to "a sense of being able to generate successful plans to meet goals" (Snyder et al., 1991, p. 570). The Snyder Hope Scale contains 12 items on an eight-point rating scale (definitely false-definitely true), with four items measuring agency, four items measuring pathways, and the remaining four items serving as fillers. Previous studies have reported alpha reliabilities for the total score ranging from .74 to .84, with alphas for agency ranging from .71-.76 and alphas for pathways ranging from .63-.80 (Snyder et al., 1991). Reliability for the Snyder Hope Scale in the present sample was excellent, with an alpha score of .856. The alpha scores for the subscales were .858 for Agency and .707 for Pathways.

Rosenberg Self-Esteem Scale (Rosenberg, 1965). The Rosenberg Self-Esteem Scale was utilized in order to assess participants' levels of self-esteem. The measure consists of ten items on a four-point rating scale (strongly disagree-strongly agree). Previous studies have reported alpha reliability scores ranging from .72 to .88 (Robins, Hendin, & Trzesniewski, 2001). Reliability for the present sample was excellent, with an alpha score of .876.

Data Analysis

Latent Profile Analysis. Latent profile analysis (LPA; Geiser, 2013; Nylund, Asparouhov, & Muthen, 2007) was conducted with the MPlus (Muthen & Muthen, 1998-2011) software to determine the optimal number and composition of latent classes representing distinct combinations of humor styles. LPA yields fit statistics that are used, in combination with theoretical and substantive considerations of the resulting classes, in the determination of the optimal number of classes required to account for differences in the observed response patterns of participants. A series of models were tested, each postulating a different number of latent classes, ranging from two classes to six classes. LPA assumes that each participant belongs to one and only one class; the model classifies individuals into the class with the highest group membership probability.

Determining Number of Classes

The information criteria (IC) statistics are model fit statistics that take into account both goodness of fit and model parsimony (Geiser, 2013). Although there are no cut-offs for IC statistics as indicative of good fit, smaller values indicate better fit of the model, and thus the IC statistics can be used to compare the fit of different models relative to each other. There are a number of IC statistics generated by Mplus when conducting an LPA. These include the Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and Sample Size Adjusted Bayesian Information Criterion (SSA-BIC). A Monte Carlo study found that the BIC statistic demonstrated the most efficacy in determining the optimal number of classes to retain for an LPA (Nylund et al., 2007) and therefore the BIC was most heavily relied upon in the current study, as recommended by Geiser (2013). The Lo-Mendell-Rubin (LMR) also be utilized to inform

the decision about the optimal number of latent classes. Using this procedure, a solution with N latent classes is compared against a model with $N - 1$ latent classes (Geiser, 2013). Differences in the likelihood ratios of these models are then compared and a p -value is estimated for the LR difference for each model. A significant p -value indicates that the fit of the model with N classes is statistically significantly better than the model with $N - 1$ classes. A non-significant p -value indicates that the more parsimonious model is preferred (Geiser, 2013; Nylund et al., 2007). A final statistic utilized to determine the best model is the number of classes for each model that contains less than 5% or less than 1% of the total sample. A class containing so few participants may be indicative of an anomaly rather than a class that is substantively noteworthy and replicable.

Relationships between Humor Classes and CAT-PD-SF Traits. In order to examine the relationships between humor classes and the CAT-PD-SF traits, class membership probabilities were correlated with each of the CAT-PD-SF traits and assessed for significance. As one purpose of the proposed study was to examine whether class membership predicts the CAT-PD-SF traits better than the individual humor style scores, hierarchical regressions were conducted for each CAT-PD-SF trait, using individual humor styles as predictors in the first model, then adding a dummy-coded variable indicating humor type (i.e., latent class membership as determined by the LPA), into the second model and assessing whether adding the humor types led to a statistically significant increase in the amount of variance explained. Given that the conditional membership probabilities generated by the LPA sum to 1.00 across all of the latent classes, problems with extreme multicollinearity arose when attempting to use the humor type conditional probabilities in the regression analyses. Therefore, instead of using

conditional probabilities, three humor type dummy-coded variables were generated to represent humor type membership, using the first class as a reference group. For example, “Class 2” was calculated by giving those who had a higher likelihood of belonging to Class 2 than the other classes a value of 1, and all other dummy variables were assigned a value of 0. This was repeated for Classes 2 and 3, thus yielding a set of three dummy variables representing which of the four humor types to which each participant was classified.

Canonical Correlation. A canonical correlation analysis (Sherry & Henson, 2005) was conducted in order to determine the ability of the humor styles to predict different patterns of combinations of the 33 personality constructs measured by the CAT-PD-SF. There are a number of advantages to utilizing a canonical correlation analysis over other possible methods. First, canonical correlation allows for simultaneous comparisons among variables rather than being forced to run a number of analyses. Thus, canonical correlation analyses reduce the rate of Type 1 errors (Sherry & Henson, 2005). A second advantage of utilizing canonical correlation analysis is that it allows for the possibility of multiple causes of multiple outcomes, thus maintaining the complexity of human behavior (Sherry & Henson, 2005). Canonical correlation analyses are best utilized when the relationship between two separate sets of variables are being evaluated. The present study used the four humor styles as predictors of the 33 CAT-PD-SF personality traits to evaluate the multivariate shared relationship between the two variable sets.

CHAPTER III

RESULTS

Latent Profile Analysis

A number of LPA models were estimated, with specifications of the number of latent classes ranging from two to six, using scale scores for the humor styles from the HSQ. Fit indices were utilized in order to determine the appropriate number of latent classes. The number of classes within each model that were composed of less than 1% and 5% of the sample were identified. Each model was then evaluated in terms of its theoretical interpretability in order to inform the final decision about the optimal number of classes.

Fit indices and other statistics for each model are presented in Table 2. The *AIC* and *SSA-BIC* values continued to decrease as the number of latent classes increased, indicating improvement of model fit. The *BIC* decreased until the addition of a fifth class, where it increased slightly, indicating a slight reduction in model fit for the five-class model over the four-class model. The six-class model had the lowest *AIC* and *SSA-BIC* statistics, whereas the only groups with significant *pLMR* values were the two-class ($p < .000$) and three-class ($p = .0044$) models. No model resulted in a group with less than 1% of the cases whereas one group from both the five- and six-class models contained less than 5% of the cases.

LMR values were only significant for the two-class and three-class models ($p < .01$). Values for the *AIC*, *BIC*, and *SSA-BIC* statistics generally decreased with each additional class, indicating improvement of fit as the number of classes increased. Although *p* values provided by LMR for models after the three-class model were not

statistically significant, the four-class model had the next lowest *pLMR*, thus demonstrating improvement for four-class versus the three-class models. The *p* value provided by *LMR* increased significantly after the four-class model.

Table 2

LPA Fit Statistics

No. Grps.	AIC	BIC	SSA-BIC	LMR-VAL	LMR-Pval	LT1%	LT5%
1	7355.65	7383.95	7358.59			0	0
2	7257.74	7303.72	7262.51	104.153	0.0000	0	0
3	7212.53	7276.21	7219.14	53.279	0.0044	0	0
4	7203.66	7285.02	7212.10	18.217	0.3158	0	0
5	7189.85	7288.90	7200.13	22.978	0.5584	0	1
6	7180.76	7297.49	7192.88	18.425	0.5460	0	1

Note. AIC = Akaike's information criterion; BIC = Bayesian information criterion; *pLMR* = *p* Low Mendel Rubin; SSA-BIC = sample-size adjusted Bayesian Information Criteria; LT = Number of groups with less than 1% and 5% of cases.

The information indexes and test of statistical significance were inconsistent across models, and thus models were also evaluated in terms of their practical significance and theoretical coherence in order to inform the decision about the optimal number of classes. The four-class model contained relatively equal proportions of participants in each class (Class 1 = 21.13%; Class 2 = 28.71%; Class 3 = 28.76%, and Class 4 = 21.40%). Both the *AIC* and *SSA-BIC* statistics improved with the addition of a fourth class. The five- and six-class models both contained one class representing less than 5% of the sample, which may indicate that these additional classes represent anomalies rather than substantive and noteworthy classes. Though the fit indices appear

to favor a three-class model, theoretical interpretation of the models and a-priori hypotheses based upon results of previous studies favor the four-class solution. Figures 1 and 2 depict the mean humor style scale z-scores by class for the three- and four-class models, respectively.

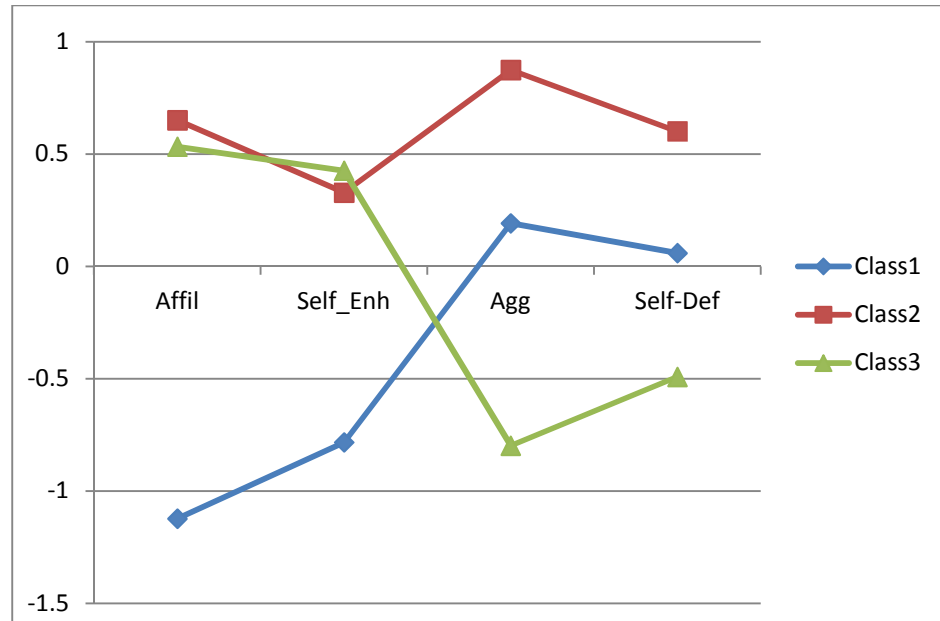


Figure 1. Three-class model.

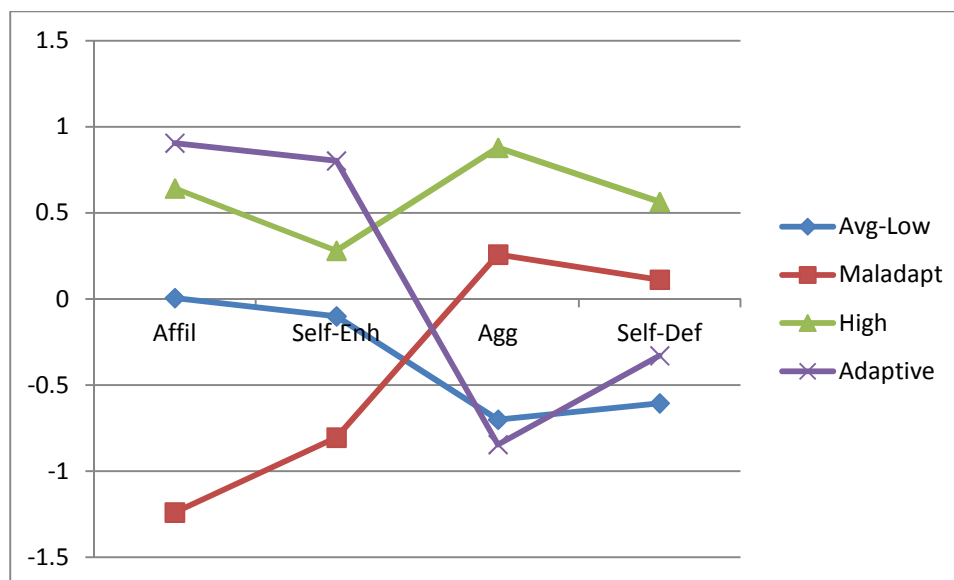


Figure 2. Four-class model.

Examining the three- and four-class models, both contain one class characterized by above average use of adaptive humor (Affiliative and Self-Enhancing) and below average use of maladaptive humor (Aggressive and Self-Defeating) and one class characterized by above average use of maladaptive humor and below average use of adaptive humor. These are consistent with classes previously reported by Galloway (2010), Leist and Muller (2012), and Finn and Arnau (2014). The significant difference between the two models is that the addition of a fourth class introduces a class with relatively average use of the adaptive humor styles and below average use of the maladaptive humor styles. Not only does the addition of this class increase the discrepancy between the use of adaptive and maladaptive humor in the fourth class, it also allows the comparison of two classes comprised of individuals who tend to use below average levels of maladaptive humor but differ in their use of adaptive humor. This allows for examination as to whether above average levels of adaptive humor provide benefits above and beyond those related to low levels of use of maladaptive

humor and thus helped inform the decision to retain the four-class solution as the model that best fit the data and provides the most utility for researching the benefits of utilizing adaptive humor and detriments of utilizing maladaptive humor.

Substantive Interpretation of the Four-Class Model. Once the four-class model was chosen as the model which best represented the data, the resulting classes were further explicated in terms of mean humor style scores for each class. Humor style scale scores were converted into z-scores in order to facilitate interpretability. As mentioned previously, these scores are presented graphically in Figure 2. The first class is characterized by average use of Affiliative ($z = 0.006$) and Self-Enhancing ($z = -0.100$) humor and below average use of Aggressive ($z = -0.700$) and Self-Defeating ($z = -0.605$) humor, and was thus labeled the “Average-Low” class. The second class was characterized by below average use of Affiliative ($z = -1.239$) and Self-Enhancing ($z = -0.804$) humor, slightly above average use of Aggressive ($z = 0.258$) humor, and relatively average use of Self-Defeating ($z = 0.112$) humor, and was thus labeled the “Maladaptive” class. The third class was characterized by above average use of Affiliative ($z = 0.642$) humor, slightly above average use of Self-Enhancing ($z = 0.281$) humor, and above average use of Aggressive ($z = 0.878$) and Self-Defeating ($z = 0.564$) humor, and was thus labeled the “High-humor” class. Finally, the fourth model was characterized by above average use of Affiliative ($z = 0.905$) and Self-Enhancing ($z = 0.802$) humor and below average use of Aggressive ($z = -0.845$) and Self-Defeating ($z = -0.329$) humor, and was thus labeled the “Adaptive” class.

Humor and Personality

Given the previous findings on the adaptive and maladaptive aspects of different styles of humor, relationships between the humor styles, both individually and in combination, and a broad, comprehensive set of personality constructs were examined in order to help expand knowledge on the nature of the humor style constructs, as well as to further explicate the humor types through an evaluation of external correlates of class membership.

Humor Styles Correlations with CAT-PD-SF Personality Traits. Table 3 presents zero-order correlations between the four humor styles and the personality constructs measured by the CAT-PD-SF. In summary, the Affiliative humor style was significantly inversely correlated with 27 of the 33 CAT-PD-SF constructs, with six of these correlations exceeding $r = .350$ and one correlation exceeding $r = .400$. Affiliative humor was most strongly related to Grandiosity ($r = -.412$), Anhedonia ($r = -.395$), Irresponsibility ($r = -.387$), Callousness ($r = -.386$), Unusual Experiences ($r = -.384$), and Unusual Beliefs ($r = -.357$).

Table 3

Humor Styles Correlations with CAT-PD-SF Personality Traits

CAT-PD-SF	Self-			
	Affiliative	Enhancing	Aggressive	Self-Defeating
Affective Lability	-.200**	-.352**	.294**	.253**
Anger	-.157*	-.251**	.385**	.198**
Anhedonia	-.395**	-.344**	.215**	.245**
Anxiousness	-.141*	-.234**	.138*	.333**
Callousness	-.386**	-.203**	.383**	.192**
Cognitive Problems	-.216**	-.210**	.326**	.468**
Depressiveness	-.210**	-.427**	.258**	.298**
Emotional Detach.	-.171**	-.105	.178**	.232**
Domineering	-.239**	-.156*	.350**	.234**
Exhibitionism	.014	-.050	.288**	.176**

Fantasy Proneness	-.056	.055	.239**	.352**
Grandiosity	-.412**	-.223**	.318**	.214**
Health Anxiety	-.242**	-.208**	.176**	.284**
Hostile Aggression	-.347**	-.147*	.423**	.316**
Irresponsibility	-.387**	-.320**	.286**	.314**
Manipulativeness	-.349**	-.206**	.429**	.318**
Mistrust	-.232**	-.215**	.306**	.376**
Non-Perseverance	-.168**	-.163**	.270**	.456**
Non-Planfulness	-.122	-.191**	.394**	.332**
Norm Violations	-.201**	-.175**	.370**	.182**
Peculiarity	-.063	-.033	.342**	.446**
Perfectionism	-.003	.039	.095	.109
Relationship				
Insecurity	-.273**	-.296**	.334**	.354**
Rigidity	-.310**	-.153*	.363**	.313**
Risk-Taking	-.128*	-.090	.384**	.280**
Romantic Disinterest	-.271**	-.147*	.035	.110

Table 3 (continued).

CAT-PD-SF	Affiliative	Self-Enhancing	Aggressive	Self-Defeating
Self-Harm	-.270**	-.228**	.196**	.306**
Social Withdrawal	-.290**	-.194**	.142*	.294**
Submissiveness	-.185**	-.192**	.175**	.461**
Unusual Beliefs	-.357**	-.054	.171**	.158*
Unusual Experiences	-.384**	-.157*	.233**	.241**
Workaholism	-.016	.087	-.071	.198**

Correlation is significant at the 0.01 level. *Correlation is significant at the 0.05 level. **Bold indicates that correlation exceeded $r = .350$.

Self-Enhancing humor was significantly inversely correlated with 24 of the 33 CAT-PD-SF constructs, with two of these correlations exceeding $r = .350$ and one exceeding $r = .400$. Self-Enhancing humor was most strongly related to Depression ($r = -.427$), Affective Lability ($r = -.352$), Anhedonia ($r = -.344$), Irresponsibility ($r = -.320$), and Relationship Insecurity ($r = -.296$).

Aggressive humor was significantly and positively correlated with 30 of the 33 CAT-PD-SF constructs, with ten of these correlations exceeding $r = .350$, three exceeding

$r = .400$, and one exceeding $r = .550$. The Aggressive humor style was most strongly related to Rudeness ($r = .567$), Manipulativeness ($r = .429$), Hostile Aggression ($r = .423$), Non-Planfulness ($r = .394$), Anger ($r = .385$), Risk-Taking ($r = .384$), Callousness ($r = .383$), Norm Violation ($r = .370$), Rigidity ($r = .363$), and Domineering ($r = .350$).

Self-Defeating humor was significantly and positively correlated with 31 of the 33 CAT-PD-SF constructs, with eight of these correlations exceeding $r = .350$ and four exceeding $.400$. The Self-Defeating humor style was most strongly related to Cognitive Problems ($r = .468$), Submissiveness ($r = .461$), Non-Perseverance ($r = .456$), Peculiarity ($r = .446$), Mistrust ($r = .376$), Rudeness ($r = .357$), Relationship Insecurity ($r = .354$), and Fantasy Proneness ($r = .352$).

Humor Styles Correlations with Mood, Hope, and Self-Esteem. Zero-order correlations were examined between the individual humor styles and Anxiety, Depression, and Stress as measured by the DASS-21, overall Hope, Agency, and Pathways as measured by the Snyder Hope Scale, and Self-Esteem as measured by the Rosenberg Self-Esteem Scale. The Affiliative humor style was significantly inversely correlated with Depression ($r = -.246$), Anxiety ($r = -.242$), and Stress ($r = -.201$) and significantly positively correlated with Agency ($r = .391$), Pathways ($r = .346$), Hope ($r = .410$), and Self-Esteem ($r = .262$). The Self-Enhancing humor style was significantly inversely correlated with Depression ($r = -.372$), Anxiety ($r = -.275$), and Stress ($r = -.201$) and significantly positively correlated with Agency ($r = .407$), Pathways ($r = .392$), Hope ($r = .444$), and Self-Esteem ($r = .357$). The Aggressive humor style was significantly positively correlated with Depression ($r = .197$) and Stress ($r = .205$) and significantly inversely correlated with Agency ($r = -.205$), Hope ($r = -.188$), and Self-

Esteem ($r = -.272$). The Self-Defeating humor style was significantly positively correlated with Depression ($r = .261$), Anxiety ($r = .212$), and Stress ($r = .225$) and significantly inversely correlated with Agency ($r = -.250$), Hope ($r = -.172$), and Self-Esteem ($r = -.380$). All correlations were significant at $p < .01$.

CAT-PD-SF Personality Trait Correlates of Humor Type Class Membership.

Table 4 presents the zero-order correlations between humor class membership probabilities and the CAT-PD-SF traits. As seen Table 4, membership in the “Average-Low” humor class, comprised of individuals who tend to utilize relatively average levels of the adaptive humor styles and below average levels of the maladaptive humor styles, was significantly negatively correlated with Anhedonia ($r = -.180$), Callousness ($r = -.187$), Cognitive Problems ($r = -.189$), Domineering ($r = -.303$), Exhibitionism ($r = -.258$), Grandiosity ($r = -.261$), Health Anxiety ($r = -.190$), Hostile Aggression ($r = -.345$), Irresponsibility ($r = -.256$), Manipulativeness ($r = -.315$), Mistrust ($r = -.183$), Non-Perseverance ($r = -.201$), Non-Planfulness ($r = -.252$), Norm-Violation ($r = -.192$), Peculiarity ($r = -.227$), Relationship Insecurity ($r = -.214$), Rigidity ($r = -.280$), Risk-Taking ($r = -.297$), Rudeness ($r = -.381$), Self-Harm ($r = -.248$), Unusual Beliefs ($r = -.214$), and Unusual Experiences ($r = -.248$). The “Average-Low” class was not significantly positively correlated with any of the CAT-PD-SF constructs.

Table 4

CAT-PD-SF Personality Trait Correlates of Humor Type Class Membership

CAT-PD-SF	Avg.-Low	Maladaptive	High-Humor	Adaptive
Affective Lability	-.048	.268**	.062	-.381**
Anger	-.128*	.216**	.156*	-.354**
Anhedonia	-.180**	.481**	-.122	-.316**
Anxiousness	-.070	.187**	.064	-.257**
Callousness	-.187**	.398**	.004	-.352**

Cognitive_Problems	-.189**	.273**	.145*	-.357**
Depressiveness	-.117	.299**	.035	-.327**
Emotional Detach.	-.048	.151*	.053	-.218**
Domineering	-.303**	.325**	.101	-.268**
Exhibitionism	-.258**	.056	.205**	-.084
Fantasy Proneness	-.159*	.042	.198**	-.149*
Grandiosity	-.261**	.458**	-.020	-.335**
Health Anxiety	-.190**	.327**	-.026	-.218**
Hostile Aggression	-.345**	.468**	.054	-.358**
Irresponsibility	-.256**	.500**	-.031	-.379**
Manipulativeness	-.315**	.437**	.084	-.381**
Mistrust	-.183**	.311**	.062	-.311**
Non-Perseverance	-.201**	.207**	.155*	-.272**
Non-Planfulness	-.252**	.239**	.170**	-.286**
Norm Violations	-.192**	.279**	.102	-.308**
Peculiarity	-.227**	.111	.225**	-.210**
Perfectionism	-.106	.006	.090	-.021
Relationship Insec.	-.214**	.350**	.087	-.362**

Table 4 (continued).

CAT-PD-SF	Affiliative	Self-Enhancing	Aggressive	Self-Defeating
Risk-Taking	-.297**	.243**	.132*	-.204**
Romantic Disinterest	-.010	.261**	-.091	-.222**
Rudeness	-.381**	.294**	.260**	-.346**
Self-Harm	-.248**	.399**	-.054	-.229**
Social Withdrawal	-.090	.275**	-.028	-.239**
Submissiveness	-.130*	.238**	.077	-.283**
Unusual Beliefs	-.214**	.433**	-.134*	-.205**
Unusual Experiences	-.248**	.493**	-.120	-.270**
Workaholism	-.044	.050	-.061	.050

Correlation is significant at the 0.01 level. *Correlation is significant at the 0.05 level. **Bold indicates that correlation exceeded $r = .350$.

Membership in the “Maladaptive” class, comprised of individuals who tend to utilize below average levels of the adaptive humor styles, above average levels of the Aggressive humor style, and relatively average levels of the Self-Defeating humor style, was significantly positively correlated with Affective Lability ($r = .268$), Anger ($r =$

.216), Anhedonia ($r = .481$), Anxiousness ($r = .187$), Callousness ($r = .398$), Cognitive Problems ($r = .273$), Depressiveness ($r = .299$), Domineering ($r = .325$), Grandiosity ($r = .458$), Health Anxiety ($r = .327$), Hostile Aggression ($r = .468$), Irresponsibility ($r = .500$), Manipulativeness ($r = .437$), Mistrust ($r = .311$), Non-Perseverance ($r = .207$), Non-Planfulness ($r = .239$), Norm Violation ($r = .279$), Relationship Insecurity ($r = .350$), Rigidity ($r = .378$), Risk-Taking ($r = .243$), Romantic Disinterest ($r = .261$), Rudeness ($r = .294$), Self-Harm ($r = .399$), Social Withdrawal ($r = .275$), Submissiveness ($r = .238$), Unusual Beliefs ($r = .433$), and Unusual Experiences ($r = .493$). The “Maladaptive” humor class was not significantly negatively correlated with any of the CAT-PD-SF constructs.

Membership in the “High-Humor” class, comprised of participants who tend to utilize above average levels of all four humor styles, was significantly positively correlated with the CAT-PD-SF constructs of Exhibitionism ($r = .205$), Fantasy Proneness ($r = .198$), Non-Planfulness ($r = .170$), Peculiarity ($r = .225$), and Rudeness ($r = .260$). It was not significantly negatively correlated with any of the CAT-PD-SF constructs. Finally, membership in the “Adaptive” class, comprised of participants who tend to utilize above average levels of the adaptive humor styles and below average levels of the maladaptive humor styles, was significantly negatively correlated with the CAT-PD-SF constructs of Affective Lability ($r = -.381$), Anger ($r = -.354$), Anhedonia ($r = -.316$), Anxiousness ($r = -.257$), Callousness ($r = -.352$), Cognitive Problems ($r = -.357$), Depressiveness ($r = -.327$), Emotional Detachment ($r = -.218$), Domineering ($r = -.268$), Grandiosity ($r = -.335$), Health Anxiety ($r = -.218$), Hostile Aggression ($r = -.358$), Irresponsibility ($r = -.379$), Manipulativeness ($r = -.381$), Mistrust ($r = -.311$), Non-

Perseverance ($r = -.272$), Non-Planfulness ($r = -.286$), Norm Violation ($r = -.308$), Peculiarity ($r = -.210$), Relationship Insecurity ($r = -.362$), Rigidity ($r = -.333$), Risk-Taking ($r = -.204$), Romantic Disinterest ($r = -.222$), Rudeness ($r = -.346$), Self-Harm ($r = -.229$), Social Withdrawal ($r = -.239$), Submissiveness ($r = -.283$), Unusual Beliefs ($r = -.205$), and Unusual Experiences ($r = -.270$). The “Adaptive” humor class was not significantly positively correlated with any of the CAT-PD-SF constructs.

Tables 5 and 6 present the relationships between humor use and the personality constructs of Anhedonia and Irresponsibility broken down by levels of maladaptive vs. adaptive humor use to demonstrate the general pattern that was revealed between the humor types and the CAT-PD-SF traits. Examining Anhedonia, the probability of belonging to the “Maladaptive” humor type was significantly and positively correlated with Anhedonia ($r = .481$). However, membership in the “High-Humor” type, comprised of high levels of adaptive humor combined with high levels of maladaptive humor use, is not significantly correlated with Anhedonia ($r = -.122$). Furthermore, when average levels of adaptive humor use are combined with *low* levels of maladaptive humor use (as reflected in the “Average-Low” humor type), there was a significant *inverse* relationship with Anhedonia ($r = -.180$). Finally, when high levels of adaptive humor use are combined with low levels of maladaptive humor use (the “Adaptive” humor type), there was an even stronger inverse relationship with Anhedonia ($r = -.316$).

Table 5

Humor Types and Anhedonia

	Low Adapt	Avg Adapt	High Adapt
Low Mal		-.180	-.316
Avg Mal			
High Mal	.481		-.122

Similar patterns emerge when examining the relationships between the humor types and Irresponsibility (see Table 6). The “Maladaptive” humor type demonstrated a significant positive relationship with Irresponsibility ($r = .500$). However, there was no significant relationship between membership in the “High-Humor” type and Irresponsibility ($r = -.031$). Membership in the “Average-Low” humor type exhibited a significant inverse relationship with Irresponsibility ($r = -.256$). Finally, membership in the “Adaptive” humor type showed an even stronger inverse relationship with Irresponsibility ($r = -.379$). The implications of this general pattern are examined in the Discussion section.

Table 6

Humor Types and Irresponsibility

	Low Adapt	Avg Adapt	High Adapt
Low Mal		-0.256	-0.379
Avg Mal			
High Mal	0.500		-0.031

Humor Types Correlations with Mood, Hope, and Self-Esteem. In order to provide additional information with regard to external validity of the humor types, class membership probabilities for each of the four types were correlated with Anxiety, Depression, and Stress as measured by the DASS-21, overall Hope, Agency, and Pathways as measured by the Snyder Hope Scale, and Self-Esteem as measured by the Rosenberg Self-Esteem Scale. Probability of membership in the “Average-Low” humor type was significantly inversely related to Depression ($r = -.203$; $p = .001$) and Stress ($r = -.125$; $p = .047$), and significantly positively related to Self-Esteem ($r = .157$; $p = .012$).

Probability of membership in the “Maladaptive” humor type was significantly positively correlated with Depression ($r = .336; p < .001$), Anxiety ($r = .305; p < .001$), Stress ($r = .237, p < .001$), and significantly inversely related to Agency ($r = -.418; p < .001$), Pathways ($r = -.341; p < .001$), Hope ($r = -.423; p < .001$), and Self-Esteem ($r = -.345; p < .001$).

Probability of membership in the “High-Humor” humor type was not significantly correlated with any of the measured variables. Probability of membership in the “Adaptive” humor type was significantly inversely related to Depression ($r = -.233; p < .001$), Anxiety ($r = -.209; p = .001$) and Stress ($r = -.232; p < .001$) and significantly positively related to Agency ($r = .367; p < .001$), Pathways ($r = .309; p < .001$), Hope ($r = .377; p < .001$), and Self-Esteem ($r = .359; p < .001$).

Incremental Validity of the Humor Types in Predicting CAT-PD-SF Traits

Affective Lability

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Affective Lability (Table 7) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 247] = 17.94; p < .001$) and accounted for 22.5% of the variance in Affective Lability. The most significant predictor of Affective Lability in the first model was the Self-Enhancing humor style ($t = -4.882; p < .001$). Other significant predictors in the first model were the Self-Defeating humor style ($t = 3.701; p < .001$) and the Aggressive humor style ($t = 2.767; p = .006$).

Introducing the humor types explained an additional 3.8% of variance in Affective Lability and this change in R^2 was significant ($F \text{ change } [3, 244] = 5.28; p = .002$). The most significant predictor of Affective Lability in the second model was the Self-

Defeating humor style ($t = 4.372$; $p < .001$). Other significant predictors in the second model were membership in the “High-Humor” humor type ($t = -3.799$; $p < .001$), the Self-Enhancing humor style ($t = -3.730$; $p < .001$), the Aggressive humor style ($t = 3.711$; $p < .001$), and membership in the “Adaptive” humor type ($t = -2.652$; $p < .001$).

Table 7

Summary of Hierarchical Regression for Variables Predicting Affective Lability

Variable	β	t	p	R^2	F change	p
Step 1				0.225	17.94	0.000
Affiliative	-0.02	-0.331	0.741			
Self-Enhancing	-0.33	-4.882	0.000			
Aggressive	0.167	2.767	0.006			

Table 7 (continued).

Variable	β	t	p	R^2	F change	p
Self-Defeating	0.221	3.701	0.000			
Step 2				0.272	5.28	0.002
Affiliative	0.199	1.772	0.078			
-	-	-	-			
Self-Enhancing	0.268	-3.730	0.000			
Aggressive	0.317	3.711	0.000			
Self-Defeating	0.268	4.372	0.000			
-	-	-	-			
Class2	0.052	-0.479	0.632			
-	-	-	-			
Class3	0.413	-3.799	0.000			
-	-	-	-			
Class4	0.245	-2.652	0.000			

Affective Lability

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Anger (Table 8) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 247] = 15.15$; $p < .001$) and accounted for 19.7% of the variance in Anger. The most significant predictor of Anger in the first

model was the Aggressive humor style ($t = 5.157$; $p < .001$). The Self-Enhancing humor style was also a significant predictor of Anger in the first model ($t = -2.729$; $p = .007$). Introducing the humor types explained an additional 1.3% of variance in Anger and this change in R^2 was non-significant (F change [3, 244] = 1.35; $p = .257$).

Table 8

Summary of Hierarchical Regression for Variables Predicting Anger

Variable	β	t	p	R^2	F change	p
Step 1				0.197	15.15	0.000
Affiliative	-0.040	-0.596	0.552			
Self-Enhancing	-0.187	-2.728	0.007			
Table 8 (continued).						
Variable	β	t	p	R^2	F change	p
Aggressive	0.317	5.157	0.000			
Self-Defeating	0.108	1.774	0.077			

Anhedonia

The hierarchical multiple regression predicting Anhedonia (Table 9) revealed that at step one, the humor styles contributed significantly to the regression model (F [4, 247] = 21.75; $p < .001$) and accounted for 26% of the variance in Anhedonia. The most significant predictor of Anhedonia in the first model was the Affiliative humor style ($t = -4.63$; $p < .001$). Other significant predictors of Anhedonia in the first model were the Self-Defeating humor style ($t = 4.15$; $p < .001$) and the Self-Enhancing humor style ($t = -2.85$; $p = .005$). Introducing the humor types explained an additional 3.9% of variance in Anhedonia and this change in R^2 was significant (F change [3, 244] = 4.46; $p = .004$). The most significant predictor of Anhedonia in the second model was the Self-Defeating humor style ($t = 3.97$; $p < .001$). Other significant predictors of Anhedonia in the second

model were membership in the Maladaptive humor type ($t = 2.41$; $p = .017$) and the Self-Enhancing humor style ($t = -2.17$; $p = .031$).

Table 9

Summary of Hierarchical Regression for Variables Predicting Anhedonia

Variable	B	<i>t</i>	<i>p</i>	R2	F change	<i>p</i>
Step 1				.260	21.75	.000
Affiliative	-.300	-4.630	.000			
Self-Enhancing	-.187	-2.849	.005			
Aggressive	.085	1.437	.152			
Self-Defeating	.242	4.145	.000			
Step 2				.299	4.46	0.004

Table 9 (continued).

Variable	β	<i>t</i>	<i>p</i>	R2	F change	<i>p</i>
Affiliative	-.076	-0.689	.492			
Self-Enhancing	-.153	-2.170	.031			
Aggressive	.132	1.580	.115			
Self-Defeating	.239	3.968	.000			
Class2	.257	2.408	.017			
Class3	-.105	-0.986	.325			
Class4	.018	0.203	.839			

Anxiousness

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Anxiousness (Table 10) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 246] = 13.37$; $p < .001$) and accounted for 17.9% of the variance in Anxiousness. The most significant predictor of Anxiousness in the first model was the Self-Defeating humor style ($t = 5.82$; $p < .001$). The Self-Enhancing humor style was also a significant predictor of Anxiousness in the first model ($t = -3.60$; $p < .001$). Introducing the humor types explained an additional

1.4% of variance in Anhedonia, and this change in R^2 was non-significant (F change [3, 243] = 1.40; $p = .243$).

Table 10

Summary of Hierarchical Regression for Variables Predicting Anxiousness

Variable	B	<i>t</i>	<i>p</i>	R2	F change	<i>p</i>
Step 1				.179	13.366	.000
Affiliative	-.023	-0.340	.734			
Self-Enhancing	-.250	-3.602	.000			
Aggressive	-.021	-0.332	.740			
Self-Defeating	.359	5.815	.000			

Callousness

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Callousness (Table 11) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 246] = 24.88$; $p < .001$) and accounted for 28.8% of the variance in Callousness. The most significant predictor of Callousness in the first model was the Affiliative humor style ($t = -6.23$; $p < .001$). The Aggressive humor style was also a significant predictor of Callousness in the first model ($t = 5.726$; $p < .001$). Introducing the humor types explained an additional 2.2% of the variance in Callousness, and this change in R^2 was non-significant (F change [3, 243] = 2.54; $p = .057$).

Table 11

Summary of Hierarchical Regression for Variables Predicting Callousness

Variable	β	<i>t</i>	<i>p</i>	R2	F change	<i>p</i>
Step 1				.288	24.88	.000
Affiliative	-.396	-6.231	.000			

Self-Enhancing	.052	0.811	.418
Aggressive	.332	5.726	.000
Self-Defeating	.098	1.697	.091

Cognitive Problems

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Cognitive Problems (Table 12) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 246] = 28.17; p < .001$) and accounted for 31.4% of the variance in Cognitive Problems. The most significant predictor of Cognitive Problems in the first model was the Self-Defeating humor style ($t = 7.70; p < .001$). Other significant predictors of Cognitive Problems in the first model were the Aggressive humor style ($t = 2.66; p = .008$), the Affiliative humor style ($t = -2.45; p = .015$), and the Self-Enhancing humor style ($t = -2.14; p = .034$). Introducing the humor types explained an additional 1.7% of the variance in Cognitive Problems, and this change in R^2 was non-significant ($F \text{ change } [3, 243] = 2.11; p = .100$).

Table 12

Summary of Hierarchical Regression for Variables Predicting Cognitive Problems

Variable	β	t	p	R^2	F change	p
Step 1				.314	28.167	.000
Affiliative	-.153	-2.446	.015			
Self-Enhancing	-.136	-2.137	.034			
Aggressive	.152	2.661	.008			
Self-Defeating	.434	7.701	.000			

Depressiveness

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Depressiveness (Table 13) revealed that at step one, the humor styles

contributed significantly to the regression model ($F [4, 247] = 26.17; p < .001$) and accounted for 29.8% of the variance in Depressiveness. The most significant predictor of Depressiveness in the first model was the Self-Enhancing humor style ($t = -6.94; p < .001$). The Self-Defeating humor style was also a significant predictor of Depressiveness in the first model ($t = 5.23; p < .001$). Introducing the humor types explained an additional 1.6% of the variance in Depressiveness, and this change in R^2 was non-significant ($F \text{ change } [3, 244] = 1.924; p = .126$).

Table 13

Summary of Hierarchical Regression for Variables Predicting Depressiveness

Variable	β	t	p	R^2	F change	p
Step 1				.298	26.173	.000
Affiliative	-.021	0.332	.740			
Self-Enhancing	-.444	-6.935	.000			
Aggressive	.091	1.576	.116			
Self-Defeating	.298	5.231	.000			

Emotional Detachment

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Emotional Detachment (Table 14) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 246] = 6.477; p < .001$) and accounted for 9.5% of the variance in Emotional Detachment. The most significant predictor of Emotional Detachment in the first model was the Self-Defeating humor style ($t = 3.23; p = .001$). The Affiliative humor style was also a significant predictor of

Emotional Detachment ($t = -2.29$; $p = .023$). Introducing the humor types explained an additional 0.7% of the variance in Emotional Detachment, and this change in R^2 was non-significant (F change [3, 243] = 0.68; $p = .568$).

Table 14

Summary of Hierarchical Regression for Variables Predicting Emotional Detachment

Variable	β	t	p	R^2	F change	p
Step 1				.095	6.477	.000
Affiliative	-.164	-2.285	.023			
Self-Enhancing	-.018	-0.242	.809			
Aggressive	.094	1.441	.151			
Self-Defeating	.209	3.231	.001			

Domineering

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Domineering (Table 15) revealed that at step one, the humor styles contributed significantly to the regression model (F [4, 246] = 14.35; $p < .001$) and accounted for 18.9% of the variance in Domineering. The most significant predictor of Domineering in the first model was the Aggressive humor style ($t = 4.60$; $p < .001$). Other significant predictors of Domineering in the first model were the Affiliative humor style ($t = -3.33$; $p = .001$) and the Self-Defeating humor style ($t = 2.46$; $p = .015$). Introducing the humor types explained an additional 2.2% of the variance in Domineering, and this change in R^2 was non-significant (F change [3, 243] = 2.296; $p = .078$).

Table 15

Summary of Hierarchical Regression for Variables Predicting Domineering

Variable	β	t	p	R^2	F change	p
Step 1				.189	14.346	.000
Affiliative	-.226	-3.330	.001			
Self-Enhancing	-.001	-0.012	.990			
Aggressive	.285	4.602	.000			
Self-Defeating	.151	2.455	.015			

Exhibitionism

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Exhibitionism (Table 16) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 246] = 6.24; p < .001$) and accounted for 9.2% of the variance in Exhibitionism. The most significant predictor of Exhibitionism in the first model was the Aggressive humor style ($t = 3.87; p < .001$). Introducing the humor types explained an additional 1.4% of the variance in Exhibitionism, and this change in R^2 was non-significant ($F \text{ change } [3, 243] = 1.28; p = .282$).

Table 16

Exhibitionism

Variable	β	t	p	R^2	F change	p
Step 1				.092	6.242	.000
Affiliative	.050	0.690	.491			
Self-Enhancing	-.043	-0.583	.561			
Aggressive	.254	3.869	.000			
Self-Defeating	.093	1.435	.153			

Fantasy Proneness

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Fantasy Proneness (Table 17) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 247] = 11.34; p < .001$) and

accounted for 15.5% of the variance in Fantasy Proneness. The most significant predictor of Fantasy Proneness in the first model was the Self-Defeating humor style ($t = 4.77$; $p < .001$). The Aggressive humor style was also a significant predictor of Fantasy Proneness in the first model ($t = 2.41$; $p = .017$). Introducing the humor types explained an additional 1.6% of the variance in Fantasy Proneness, and this change in R^2 was non-significant (F change [3, 244] = 1.538; $p = .205$).

Table 17

Summary of Hierarchical Regression for Variables Predicting Fantasy Proneness

Variable	β	t	p	R^2	F change	p
Step 1				.155	11.336	.000
Affiliative	-.124	-1.792	.074			
Self-Enhancing	.125	1.779	.076			
Aggressive	.152	2.410	.017			
Self-Defeating	.298	4.772	.000			

Grandiosity

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Grandiosity (Table 18) revealed that at step one, the humor styles contributed significantly to the regression model (F [4, 245] = 23.43; $p < .001$) and accounted for 27.7% of the variance in Grandiosity. The most significant predictor of Grandiosity in the first model was the Affiliative humor style ($t = -6.51$; $p < .001$). Other significant predictors of Grandiosity in the first model were the Aggressive humor style ($t = 4.21$; p

<.001) and the Self-Defeating humor style ($t = 2.61$; $p = .01$). Introducing the humor types explained an additional 1.9% of the variance in Grandiosity, and this change in R^2 was non-significant (F change [3, 242] = 2.235; $p = .085$).

Table 18

Summary of Hierarchical Regression for Variables Predicting Grandiosity

Variable	β	t	p	R^2	F change	p
Step 1				.277	23.429	.000
Affiliative	-.418	-6.507	.001			
Self-Enhancing	.028	0.425	.671			
Aggressive	.247	4.210	.000			
Self-Defeating	.151	2.605	.010			

Health Anxiety

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Health Anxiety (Table 19) revealed that at step one, the humor styles contributed significantly to the regression model (F [4, 245] = 11.72; $p < .001$) and accounted for 16.1% of the variance in Health Anxiety. The most significant predictor of Health Anxiety in the first model was the Self-Defeating humor style ($t = 4.558$; $p < .001$). The Affiliative humor style was also a significant predictor of Health Anxiety in the first model ($t = -2.74$; $p = .007$). Introducing the humor types explained an additional 2.2% of the variance in Health Anxiety, and this change in R^2 was non-significant (F change [3, 242] = 2.202; $p = .088$).

Table 19

Summary of Hierarchical Regression for Variables Predicting Health Anxiety

Variable	β	t	p	R^2	F change	p
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Step 1				.161	11.723	.000
Affiliative	-.190	-2.738	.007			
Self-Enhancing	-.118	-1.680	.094			
Aggressive	.052	0.821	.413			
Self-Defeating	.285	4.558	.000			

Hostile Aggression

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Hostile Aggression (Table 20) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 246] = 30.58; p < .001$) and accounted for 33.2% of the variance in Hostile Aggression. The most significant predictor of Hostile Aggression in the first model was the Affiliative humor style ($t = -6.26; p < .001$). The Aggressive ($t = 6.09; p < .001$) and Self-Defeating ($t = 3.84; p < .001$) humor styles were also significant predictors of Hostile Aggression in the first model. Introducing the humor types explained an additional 4.3% of variance in Hostile Aggression and this change in R^2 was significant ($F \text{ change } [3, 243] = 5.575; p = .001$). The most significant predictor of Hostile Aggression in the second model was the Aggressive humor style ($t = 4.125; p < .001$). Other significant predictors of Hostile Aggression in the second model were membership in the Maladaptive humor type ($t = 3.45; p = .001$), the Self-Defeating humor style ($t = 3.35; p = .001$), and the Self-Enhancing humor style ($t = 2.22; p = .028$).

Table 20

Summary of Hierarchical Regression for Variables Predicting Hostile Aggression

Variable	β	t	p	R^2	F change	p
Step 1				.332	30.584	.000
Affiliative	-.386	-6.260	.000			
Self-Enhancing	.097	1.550	.123			

Aggressive	.342	6.089	.000			
Self-Defeating	.214	3.842	.000			
Step 2				.375	5.575	.001
Affiliative	-.126	-1.211	.227			
Self-Enhancing	.148	2.217	.028			
Aggressive	.327	4.125	.000			
Self-Defeating	.191	3.351	.001			
Class2	.346	3.448	.001			
Class3	-.025	-0.244	.807			
Class4	-.002	-0.025	.980			

Irresponsibility

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Irresponsibility (Table 21) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 246] = 26.47; p < .001$) and accounted for 30.1% of the variance in Irresponsibility. The most significant predictor of Irresponsibility in the first model was the Self-Defeating humor style ($t = 5.10; p < .001$). Other significant predictors of Irresponsibility in the first model were the Affiliative humor style ($t = -4.89; p < .001$), the Aggressive humor style ($t = 2.54; p = .012$), and the Self-Enhancing humor style ($t = -2.38; p = .018$). Introducing the humor types explained an additional 4.4% of variance in Irresponsibility and this change in R^2 was significant (F change $[3, 243] = 5.44; p = .001$). The most significant predictor of Irresponsibility in the second model was the Self-Defeating humor style ($t = 4.67; p < .001$). Other significant predictors of Irresponsibility in the second model were membership in the Maladaptive humor type ($t = 3.26; p = .001$) and the Aggressive humor style ($t = 1.756; p = .08$).

Table 21

Irresponsibility

Variable	β	t	p	R^2	F change	p
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Step 1				.301	26.474	.000
Affiliative	-.308	-4.894	.000			
Self-Enhancing	-.153	-2.383	.018			
Aggressive	.146	2.540	.012			
Self-Defeating	.290	5.096	.000			
Step 2				.345	5.442	.001
Affiliative	-.008	-0.075	.940			
Self-Enhancing	-.086	-1.261	.208			
Aggressive	.142	1.756	.080			
Self-Defeating	.273	4.674	.000			
Class2	.336	3.265	.001			
Class3	-.087	-0.847	.398			
Class4	-.067	-0.766	.444			

Manipulativeness.

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Manipulativeness (Table 22) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 246] = 30.55; p < .001$) and accounted for 33.2% of the variance in Manipulativeness. The most significant predictor of Manipulativeness in the first model was the Aggressive humor style ($t = 5.97; p < .001$). Other significant predictors of Manipulativeness in the first model were the Affiliative humor style ($t = -5.59; p < .001$) and the Self-Defeating humor style ($t = 3.99; p < .001$). Introducing the humor types explained an additional 2.3% of variance in Manipulativeness and this change in R^2 was significant ($F \text{ change } [3, 243] = 2.94; p = .034$). The most significant predictor of Manipulativeness in the second model was the Aggressive humor style ($t = 4.83; p < .001$). The Self-Defeating humor style was also a significant predictor of Manipulativeness in the second model ($t = 3.91; p < .001$).

Table 22

Summary of Hierarchical Regression for Variables Predicting Manipulativeness

Variable	β	t	p	R^2	F change	p
Step 1				.332	30.549	.000
Affiliative	-.344	-5.586	.000			
Self-Enhancing	.015	0.235	.815			
Aggressive	.336	5.967	.000			
Self-Defeating	.222	3.992	.000			
Step 2				.355	2.940	.034
Affiliative	-.154	-1.459	.146			
Self-Enhancing	.048	0.713	.477			
Aggressive	.389	4.834	.000			
Self-Defeating	.226	3.910	.000			
Class2	.176	1.727	.085			
Class3	-.132	-1.285	.200			
Class4	-.023	-0.261	.794			

Mistrust

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Mistrust (Table 23) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 246] = 19.80; p < .001$) and accounted for 24.4% of the variance in Mistrust. The most significant predictor of Mistrust in the first model was the Self-Defeating humor style ($t = 5.71; p < .001$). The Aggressive ($t = 2.75; p = .006$) and Affiliative ($t = -2.62, p = .009$) humor styles were also significant predictors of Mistrust in the first model. Introducing the humor types explained an additional 2.3% of the variance in Mistrust, and this change in R^2 was non-significant (F change [3, 243] = 2.54; $p = .057$).

Table 23

Summary of Hierarchical Regression for Variables Predicting Mistrust

Variable	β	t	p	R^2	F change	p
Step 1				.244	19.797	.000
Affiliative	-.171	-2.615	.009			
Self-Enhancing	-.122	-1.827	.069			

Aggressive	.164	2.749	.006
Self-Defeating	.338	5.707	.000

Non-Perseverance

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Non-Perseverance (Table 24) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 245] = 22.16; p < .001$) and accounted for 26.6% of the variance in Non-Perseverance. The only significant predictor of Non-Perseverance in the first model was the Self-Defeating humor style ($t = 7.48; p < .001$). Introducing the humor types explained an additional 0.5% of the variance in Non-Perseverance, and this change in R^2 was non-significant ($F \text{ change } [3, 242] = 0.56; p = .644$).

Table 24

Summary of Hierarchical Regression for Variables Predicting Non-Perseverance

Variable	β	t	p	R^2	F change	p
Step 1				.266	22.156	.000
Affiliative	-.124	-1.918	.056			
Self-Enhancing	-.111	-1.683	.094			
Aggressive	.100	1.699	.091			
Self-Defeating	.437	7.483	.000			

Non-Planfulness

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Non-Planfulness (Table 25) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 246] = 18.11; p < .001$) and

accounted for 22.7% of the variance in Non-Planfulness. The most significant predictor of Non-Planfulness in the first model was the Aggressive humor style ($t = 4.74$; $p < .001$). The Self-Defeating ($t = 4.17$; $p < .001$) and Self-Enhancing ($t = -2.13$; $p = .034$) humor styles were also significant predictors of Non-Planfulness in the first model. Introducing the humor types explained an additional 3.0% of variance in Non-Planfulness and this change in R^2 was significant (F change [3, 243] = 3.239; $p = .023$). The most significant predictor of Non-Planfulness in the second model was the Aggressive humor style ($t = 4.26$; $p < .001$). The Self-Defeating humor style was also a significant predictor of Non-Planfulness in the second model ($t = 4.23$; $p < .001$).

Table 25

Summary of Hierarchical Regression for Variables Predicting Non-Planfulness

Variable	β	t	p	R^2	F change	p
Step 1				.227	18.111	.000
Affiliative	-.038	-0.573	.568			
Self-Enhancing	-.143	-2.126	.034			
Aggressive	.286	4.735	.000			
Self-Defeating	.250	4.169	.000			
Step 2				.257	3.239	.023
Affiliative	.184	1.622	.106			
Self-Enhancing	-.100	-1.377	.170			
Aggressive	.368	4.255	.000			
Self-Defeating	.263	4.230	.000			
Class2	.157	1.436	.152			
Class3	-.206	-1.870	.063			
Class4	-.066	-0.710	.478			

Norm Violation

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Norm Violation (Table 26) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 245] = 13.01; p < .001$) and accounted for 17.5% of the variance in Norm Violation. The most significant predictor of Norm Violation in the first model was the Aggressive humor style ($t = 5.17; p < .001$). The Affiliative humor style was also a significant predictor of Norm Violation ($t = -2.33; p = .020$). Introducing the humor types explained an additional 0.8% of the variance in Norm Violation, and this change in R^2 was non-significant ($F \text{ change } [3, 242] = 0.80; p = .497$).

Table 26

Summary of Hierarchical Regression for Variables Predicting Norm Violation

Variable	β	t	p	R^2	F change	p
Step 1				.175	13.013	.000
Affiliative	-.160	-2.333	.020			
Self-Enhancing	-.044	-0.630	.529			
Aggressive	.324	5.171	.000			
Self-Defeating	.087	1.400	.163			

Peculiarity

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Peculiarity (Table 27) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 246] = 20.03; p < .001$) and accounted for

24.6% of the variance in Peculiarity. The most significant predictor of Peculiarity in the first model was the Self-Defeating humor style ($t = 6.38$; $p < .001$). The Aggressive humor style was also a significant predictor of Peculiarity in the first model ($t = 3.59$; $p < .001$). Introducing the humor types explained an additional 0.9% of the variance in Peculiarity and this change in R^2 was non-significant (F change $[3, 243] = 0.93$; $p = .428$).

Table 27

Summary of Hierarchical Regression for Variables Predicting Peculiarity

Variable	β	t	p	R^2	F change	p
Step 1				.246	20.034	.000
Affiliative	-.072	-1.105	.270			
Self-Enhancing	.013	0.190	.850			
Aggressive	.214	3.588	.000			
Self-Defeating	.378	6.384	.000			

Perfectionism

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Perfectionism revealed that at step one, the humor styles failed to contribute significantly to the regression model ($F [4, 246] = 1.173$; $p = .323$) and accounted for 1.9% of the variance in Non-Perseverance. Introducing the humor types explained an additional 0.8% of the variance in Perfectionism, but this change in R^2 was non-significant (F change $[3, 242] = 0.663$; $p = .576$).

Relationship Insecurity

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Relationship Insecurity (Table 28) revealed that at step one, the humor styles

contributed significantly to the regression model ($F [4, 245] = 23.76; p < .001$) and accounted for 28.0% of the variance in Relationship Insecurity. The most significant predictor of Relationship Insecurity in the first model was the Self-Defeating humor style ($t = 5.44; p < .001$). Other significant predictors of Relationship Insecurity in the first model were the Aggressive humor style ($t = 3.22; p = .001$), the Self-Enhancing humor style ($t = -3.01; p = .003$), and the Affiliative humor style ($t = -2.67; p = .008$). Introducing the humor types explained an additional 0.8% of the variance in Relationship Insecurity, but this change in R^2 was non-significant ($F \text{ change } [3, 242] = 0.94; p = .420$).

Table 28

Summary of Hierarchical Regression for Variables Predicting Relationship Insecurity

Variable	β	t	p	R^2	F change	p
Step 1				.280	23.764	.000
Affiliative	-.171	-2.667	.008			
Self-Enhancing	-.197	-3.011	.003			
Aggressive	.188	3.221	.001			
Self-Defeating	.315	5.440	.000			

Rigidity

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Rigidity (Table 29) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 245] = 22.35; p < .001$) and accounted for 26.7% of the variance in Rigidity. The most significant predictor of Rigidity in the first model was the Affiliative humor style ($t = -5.11; p < .001$). The Aggressive ($t = 4.60; p < .001$) and Self-Defeating ($t = 4.06; p < .001$) humor styles were also significant predictors of Rigidity in the first model. Introducing the humor types explained an additional 1.6% of the variance in Rigidity, and this change in R^2 was non-significant ($F \text{ change } [3, 242] = 1.805; p = .147$).

Table 29

Summary of Hierarchical Regression for Variables Predicting Rigidity

Variable	B	t	p	R2	F change	p
Step 1				.267	22.348	.000
Affiliative	-.331	-5.112	.000			
Self-Enhancing	.051	0.770	.442			
Aggressive	.271	4.600	.000			
Self-Defeating	.237	4.058	.000			

Risk-Taking

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Risk-Taking (Table 30) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 246] = 14.17; p < .001$) and accounted for 18.7% of the variance in Risk-Taking. The most significant predictor of Risk-Taking in the first model was the Aggressive humor style ($t = 5.14; p < .001$). The Self-Defeating humor style was also a significant predictor of Risk-Taking in the first model ($t = 2.93; p = .004$). Introducing the humor types explained an additional 3.2% of variance in Risk-Taking and this change in R^2 was significant (F change $[3, 243] = 3.28; p = .022$). The most significant predictor of Risk-Taking in the second model was the Aggressive humor style ($t = 4.34; p < .001$). The Self-Defeating humor style was also a significant predictor of Risk-Taking in the second model ($t = 2.86; p = .005$).

Table 30

Summary of Hierarchical Regression for Variables Predicting Risk-Taking

Variable	β	t	p	R2	F change	p
Step 1				.187	14.173	.000
Affiliative	-.121	-1.776	.077			
Self-Enhancing	.012	0.173	.863			
Aggressive	.319	5.142	.000			

Self-Defeating	.180	2.929	.004			
Step 2				.219	3.281	.022
Affiliative	-.021	-0.183	.855			
Self-Enhancing	.006	0.081	.935			
Aggressive	.384	4.336	.000			
Self-Defeating	.183	2.864	.005			
Class2	.171	1.527	.128			
Class3	-.048	-0.422	.673			
Class4	.129	1.350	.178			

Romantic Disinterest

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Romantic Disinterest (Table 31) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 245] = 5.97; p < .001$) and accounted for 8.9% of the variance in Romantic Disinterest. The most significant predictor of Romantic Disinterest in the first model was the Affiliative humor style ($t = -3.73; p < .001$). The Self-Defeating humor style was also a significant predictor of Romantic Disinterest in the first model ($t = 2.03; p = .043$). Introducing the humor types explained an additional 1.0% of the variance in Romantic Disinterest, and this change in R^2 was non-significant ($F \text{ change } [3, 242] = 0.89; p = .446$).

Table 31

Summary of Hierarchical Regression for Variables Predicting Romantic Disinterest

Variable	β	t	p	R^2	F change	p
Step 1				.089	5.973	.000
Affiliative	-.269	-3.728	.000			
Self-Enhancing	-.018	-0.240	.810			
Aggressive	-.029	-0.448	.654			
Self-Defeating	.132	2.032	.043			

Rudeness

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Rudeness (Table 32) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 245] = 38.30; p < .001$) and accounted for 38.5% of the variance in Rudeness. The most significant predictor of Rudeness in the first model was the Aggressive humor style ($t = 9.33; p < .001$). The Self-Defeating ($t = 3.66; p < .001$) and Affiliative ($t = -3.45; p < .01$) humor styles were also significant predictors of Rudeness in the first model. Introducing the humor types explained an additional 2.6% of variance in Rudeness and this change in R^2 was significant ($F \text{ change } [3, 242] = 3.548; p = .015$). The most significant predictor of Rudeness in the second model was the Aggressive humor style ($t = 7.44; p < .001$). The Self-Defeating humor style was also a significant predictor of Rudeness in the second model ($t = 3.68; p < .001$).

Table 32

Summary of Hierarchical Regression for Variables Predicting Rudeness

Variable	β	t	p	R^2	F change	p
Step 1				.385	38.298	.000
Affiliative	-.205	-3.445	.001			
Self-Enhancing	.092	1.525	.129			
Aggressive	.504	9.325	.000			
Self-Defeating	.196	3.659	.000			
Step 2				.411	3.548	.015
Affiliative	-.032	-0.321	.748			
Self-Enhancing	.117	1.802	.073			
Aggressive	.573	7.436	.000			
Self-Defeating	.204	3.678	.000			
Class2	.166	1.706	.089			
Class3	-.135	-1.380	.169			

Class4	.009	0.103	.918
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Self-Harm

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Self-Harm (Table 33) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 247] = 14.54; p < .001$) and accounted for 19.1% of the variance in Self-Harm. The most significant predictor of Self-Harm in the first model was the Self-Defeating humor style ($t = 4.95; p < .001$). The Affiliative humor style was also a significant predictor of Self-Harm in the first model ($t = -3.11; p = .002$). Introducing the humor types explained an additional 4.8% of variance in Self-Harm and this change in R^2 was significant ($F \text{ change } [3, 244] = 5.11; p = .002$). The most significant predictor of Risk-Taking in the second model was the Self-Defeating humor style ($t = 4.78; p < .001$). Membership in the Maladaptive humor type was also a significant predictor of Self-Harm in the second model ($t = 2.57; p = .011$).

Table 33

Summary of Hierarchical Regression for Variables Predicting Self-Harm

Variable	β	t	p	R^2	F change	p
Step 1				.191	14.539	.000
Affiliative	-.211	-3.114	.002			
Self-Enhancing	-.127	-1.841	.067			
Aggressive	.062	1.001	.318			
Self-Defeating	.303	4.952	.000			
Step 2				.238	5.109	.002
Affiliative	.044	0.382	.703			
Self-Enhancing	-.086	-1.173	.242			
Aggressive	.116	1.330	.185			
Self-Defeating	.300	4.776	.000			
Class2	.285	2.565	.011			

Class3	-.126	-1.129	.260
Class4	.011	0.121	.904

Social Withdrawal

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Social Withdrawal (Table 34) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 244] = 13.69; p < .001$) and accounted for 18.3% of the variance in Social Withdrawal. The most significant predictor of Social Withdrawal in the first model was the Self-Defeating humor style ($t = 4.99; p < .001$). The Affiliative humor style was also a significant predictor of Social Withdrawal in the first model ($t = -3.87; p < .001$). Introducing the humor types explained an additional 0.3% of the variance in Social Withdrawal, and this change in R^2 was non-significant (F change $[3, 241] = 0.27; p = .845$).

Table 34

Summary of Hierarchical Regression for Variables Predicting Social Withdrawal

Variable	β	t	p	R^2	F change	p
Step 1				.183	13.688	.000
Affiliative	-.266	-3.870	.000			
Self-Enhancing	-.070	-1.008	.315			
Aggressive	.012	0.193	.847			
Self-Defeating	.308	4.985	.000			

Submissiveness

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Submissiveness (Table 35) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 246] = 23.12; p < .001$) and accounted for 27.3% of the variance in Submissiveness. The most significant predictor of Submissiveness in the first model was the Self-Defeating humor style ($t = 8.33; p < .001$). The Self-Enhancing humor style was also a significant predictor of Submissiveness in the first model ($t = -2.52; p = .012$). Introducing the humor types explained an additional 0.9% of the variance in Submissiveness, and this change in R^2 was non-significant (F change $[3, 243] = 1.01; p = .388$).

Table 35

Summary of Hierarchical Regression for Variables Predicting Submissiveness

Variable	β	t	p	R^2	F change	p
Step 1				.273	23.123	.000
Affiliative	-.120	-1.866	.063			
Self-Enhancing	-.165	-2.523	.012			
Aggressive	-.018	-0.305	.760			
Self-Defeating	.483	8.325	.000			

Unusual Beliefs

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Unusual Beliefs (Table 36) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 246] = 14.92; p < .001$) and accounted for 19.5% of the variance in Unusual Beliefs. The most significant predictor of Unusual Beliefs in the first model was the Affiliative humor style ($t = -6.83; p < .001$). Other significant predictors of Unusual Beliefs in the first model were the Self-Enhancing

humor style ($t=2.97$; $p=.003$), the Aggressive humor style ($t = 2.14$; $p=.033$), and the Self-Defeating humor style ($t = 1.98$; $p=.049$). Introducing the humor types explained an additional 4.5% of variance in Unusual Beliefs and this change in R^2 was significant (F change [3, 243] = 4.743; $p = .003$). The most significant predictor of Unusual Beliefs in the second model was the Self-Enhancing humor style ($t = 3.53$; $p<.001$). The Self-Defeating humor style was also a significant predictor of Unusual Beliefs in the second model ($t = 3.41$; $p=.001$).

Table 36

Summary of Hierarchical Regression for Variables Predicting Unusual Beliefs

Variable	β	t	p	R^2	F change	p
Step 1				.195	14.916	.000
Affiliative	-.462	-6.830	.000			
Self-Enhancing	.204	2.970	.003			
Aggressive	.132	2.142	.033			
Self-Defeating	.121	1.977	.049			
Step 2				.238	4.743	.003
Affiliative	-.197	-1.719	.087			
Self-Enhancing	.259	3.526	.001			
Aggressive	.086	0.984	.326			
Self-Defeating	.089	1.411	.159			
Class2	.378	3.413	.001			
Class3	.021	0.185	.853			

Table 36 (continued).

Variable	β	t	p	R^2	F change	p
Class4	-.006	-0.061	.952			

Unusual Experiences

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Unusual Experiences (Table 37) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 246] = 18.94$; $p < .001$) and

accounted for 23.5% of the variance in Unusual Experiences. The most significant predictor of Unusual Experiences in the first model was the Affiliative humor style ($t = -6.45$; $p < .001$). The Self-Defeating ($t = 3.46$; $p = .001$) and Aggressive ($t = 2.47$; $p = .014$) humor styles were also significant predictors of Unusual Experiences in the first model. Introducing the humor types explained an additional 7.0% of variance in Unusual Experiences and this change in R^2 was significant (F change [3, 243] = 8.14; $p < .001$). The most significant predictor of Unusual Beliefs in the second model was membership in the Maladaptive humor type ($t = 3.52$; $p = .001$). Other significant predictors of Unusual Experiences in the second model were the Self-Defeating humor style ($t = 3.28$; $p = .001$), the Aggressive humor style ($t = 2.29$; $p = .023$), and the Self-Enhancing humor style ($t = 2.05$; $p = .042$).

Table 37

Summary of Hierarchical Regression for Variables Predicting Unusual Experiences

Variable	β	t	p	R^2	F change	p
Step 1				.235	18.940	.000
Affiliative	-.425	-6.454	.000			
Self-Enhancing	.078	1.167	.244			
Aggressive	.148	2.468	.014			
Table 37 (continued).						
Variable	β	t	p	R^2	F change	p
Self-Defeating	.206	3.460	.001			
Step 2				.305	8.139	.000
Affiliative	-.081	-0.740	.460			
Self-Enhancing	.144	2.048	.042			
Aggressive	.191	2.288	.023			
Self-Defeating	.197	3.280	.001			
Class2	.373	3.523	.001			
Class3	-.151	-1.422	.156			
Class4	-.037	-0.411	.681			

Workaholism

The hierarchical multiple regression for variables predicting the CAT-PD-SF construct of Workaholism (Table 38) revealed that at step one, the humor styles contributed significantly to the regression model ($F [4, 246] = 4.45; p = .002$) and accounted for 6.7% of the variance in Workaholism. The most significant predictor of Workaholism in the first model was the Self-Defeating humor style ($t = 3.68; p < .001$). The Aggressive humor style was also a significant predictor of Workaholism in the first model ($t = -2.22; p = .034$). Introducing the humor types explained an additional 0.5% of the variance in Workaholism, and this change in R^2 was non-significant ($F \text{ change } [3, 243] = 0.43; p = .731$).

Table 38

Summary of Hierarchical Regression for Variables Predicting Workaholism

Variable	β	t	p	R^2	F change	p
Step 1				.067	4.446	.002
Affiliative	-.086	-1.180	.239			
Self-Enhancing	.094	1.264	.207			
Aggressive	-.141	-2.218	.034			
Self-Defeating	.242	3.679	.000			

Canonical Correlation Analysis

A canonical correlation analysis was conducted using the four humor styles as predictors of the 33 CAT-PD-SF personality to evaluate the patterns of multivariate shared relationships between the two variable sets. The canonical correlation analysis was conducted utilizing the template/format for presenting results recommended by Sherry and Henson (2005). The analysis yielded four functions with squared canonical correlations of .549, .381, .349, and .331 for each successive function (Table 39).

Collectively, the full model across all functions was statistically significant [Wilks's $\lambda =$

.122, $F(132, 826.41) = 4.371, p < .001$]. Given that Wilks's λ represents the variance unexplained by the model, $1 - \lambda$ yields the full model effect size in an r^2 metric. Thus, for the set of four canonical functions, the r^2 type effect size was .878, which indicates that the full model explained a substantial portion, 87.8%, of the variance shared between the variable sets.

Table 39

Eigenvalues and Canonical Correlation Coefficients

Root No.	Eigenvalue	%	Cum. %	Canonical Correlation	Squared Correlation
1	1.217	42.48	42.48	0.741	0.549
2	0.616	21.52	64.00	0.618	0.381
3	0.536	18.73	82.73	0.591	0.349
4	0.495	17.27	100.00	0.575	0.331

Given the squared canonical correlation effects for each function, all four canonical functions were considered noteworthy in the context of this study (54.9%, 38.1%, 34.9%, and 33.1%, respectively, of the remaining variance in the variable sets after the extraction of the prior functions). Table 40 presents the standardized canonical function coefficients and structure coefficients for all four functions. The squared structure coefficients are also given as well as the communalities (h^2) across the functions for each variable. Variables were considered to make a primary contribution to the function when they had a structure coefficient above .400 and a secondary contribution when they had a structure coefficient between .300 and .399. Looking at the Function 1 coefficients, there were a large number of relevant criterion variables. Primary contributions were made by Rudeness, Manipulativeness, Hostile Aggression, Cognitive Problems, Rigidity, Irresponsibility, Relationship Insecurity, Non-Perseverance,

Callousness, Grandiosity, Mistrust, Peculiarity, Non-Planfulness, Submissiveness, Domineering, Unusual Experiences, Anhedonia, Risk-Taking, Norm-Violation, Depressiveness, Affective Lability, Anger, Self-Harm, Social Withdrawal, Fantasy Proneness, Health Anxiety, Unusual Beliefs, Anxiousness, and Emotional Detachment. A secondary contribution was made by Exhibitionism. All of the contributing variables exhibited structure coefficients with the same sign, indicating that they were all positively related.

Regarding the predictor variable set in Function 1, the Aggressive, Self-Defeating, and Affiliative humor styles were the primary contributors to the predictor synthetic variable. The Aggressive and Self-Defeating humor styles exhibited positive structure coefficients, indicating that they were positively related to all of the contributing personality constructs in Function 1. The Affiliative and Self-Enhancing humor styles exhibited negative structure coefficients, indicating that they were negatively related to both the contributing personality constructs and the Aggressive and Self-Defeating humor styles. These results were generally supportive of the theoretically expected relationships between adaptive and maladaptive humor styles and personality constructs. Function 1 was labeled as “humor and egocentricity” (for rationale, see Discussion section).

Table 40

Canonical Solution for Humor Styles Predicting Personality for Function 1

Variable	Coef	rs	rs ² (%)
Affective Lability	-0.168	<u>.516</u>	26.62
Anger	-0.109	<u>.516</u>	26.62
Anhedonia	-0.065	<u>.557</u>	31.02
Anxiousness	0.004	.424	17.98
Callousness	0.052	<u>.643</u>	41.34
Cognitive Problems	0.356	<u>.717</u>	51.41
Depressiveness	-0.005	<u>.526</u>	27.67

Emotional Detachment	-0.003	<u>.402</u>	16.16
Domineering	-0.048	<u>.578</u>	33.41
Exhibitionism	0.005	<u>.337</u>	11.36
Fantasy Proneness	-0.153	<u>.475</u>	22.56
Grandiosity	-0.004	<u>.634</u>	40.20
Health Anxiety	-0.009	<u>.471</u>	22.18
Hostile Aggression	0.189	<u>.749</u>	56.10
Irresponsibility	0.272	<u>.671</u>	45.02
Manipulativeness	0.218	<u>.762</u>	58.06
Mistrust	0.021	<u>.633</u>	40.07
Non-Perseverance	0.037	<u>.648</u>	41.99
Non-Planfulness	-0.045	<u>.606</u>	36.72
Norm Violation	-0.081	<u>.528</u>	27.88
Peculiarity	0.204	<u>.631</u>	39.82
Perfectionism	0.027	<u>.141</u>	1.99
Relationship Insecurity	0.118	<u>.661</u>	43.69
Rigidity	0.117	<u>.684</u>	46.79
Risk-Taking	0.149	<u>.556</u>	30.91
Romantic Disinterest	0.098	<u>.253</u>	6.40
Rudeness	0.348	<u>.781</u>	61.00
Self-harm	-0.160	<u>.514</u>	26.42
Social Withdrawal	0.027	<u>.494</u>	24.40
Submissiveness	0.055	<u>.581</u>	33.76
Unusual Beliefs	-0.187	<u>.456</u>	20.79
Unusual Experiences	-0.005	<u>.564</u>	31.81

Table 40 (continued).

Variable	Coef	rs	rs ² (%)
Workaholism	-0.022	.125	1.56
R2C			54.90
Affiliative	-0.444	<u>-.440</u>	19.36
Enhancing	0.007	<u>-.269</u>	7.24
Aggressive	0.541	<u>.748</u>	55.95
Defeating	0.563	<u>.715</u>	51.12

Note. Coefficients for primary contributors to the function are underlined

Examining the Function 2 coefficients (Table 41), the only criterion variable making a primary contribution to the function was Unusual Beliefs. Grandiosity, Unusual

Experiences, and Callousness made smaller, secondary contributions. Structure coefficients for all of these personality constructs were negative, indicating that they are all positively related to each other. The Affiliative and Self-Defeating humor styles were the dominant predictors of Function 2. This function appears to be describing individuals who are experiencing possible breaks from reality in conjunction with feelings of superiority and cold-heartedness. These individuals are less likely to utilize the Affiliative or Self-Defeating humor styles. Thus, Function 2 was labeled “Schizotypal Grandiosity.”

Table 41

Canonical Solution for Humor Styles Predicting Personality for Function 2

Variable	Coef	r_s	r_s^2 (%)	h^2 (%)
Affective Lability	-0.448	.137	1.88	28.50
Anger	0.112	.102	1.04	27.66
Anhedonia	-0.465	-.183	3.35	34.37
Anxiousness	0.136	.203	4.12	22.10
Callousness	-0.120	-.333	11.09	<u>52.43</u>
Cognitive Problems	0.087	.144	2.07	<u>53.48</u>
Depressiveness	0.706	.234	5.48	33.15
Emotional Detachment	-0.065	-.035	0.12	16.28
Domineering	0.032	-.105	1.10	34.51

Table 41 (continued).

Variable	Coef	r_s	r_s^2 (%)	h^2 (%)
Exhibitionism	0.282	.158	2.50	13.86
Fantasy Proneness	-0.127	.088	0.77	23.33
Grandiosity	-0.668	-.359	12.89	<u>53.09</u>
Health Anxiety	0.183	-.033	0.11	22.29
Hostile Aggression	-0.253	-.240	5.76	<u>61.86</u>
Irresponsibility	-0.078	-.191	3.65	<u>48.67</u>
Manipulativeness	0.183	-.206	4.24	<u>62.30</u>
Mistrust	0.035	.051	0.26	40.33
Non-Perseverance	0.078	.162	2.62	44.61
Non-Planfulness	0.333	.183	3.35	40.07
Norm Violation	0.121	-.056	0.31	28.19
Peculiarity	0.266	.241	5.81	<u>45.63</u>
Perfectionism	0.084	.057	0.33	2.32

Relationship Insecurity	-0.159	.034	0.12	43.81
Rigidity	0.013	-.169	2.86	<u>49.65</u>
Risk-Taking	0.231	.061	0.37	31.28
Romantic Disinterest	-0.047	-.243	5.91	12.31
Rudeness	0.054	.041	0.17	<u>61.17</u>
Self-harm	0.088	-.031	0.10	26.52
Social Withdrawal	-0.079	-.125	1.56	25.96
Submissiveness	0.181	.153	2.34	36.10
Unusual Beliefs	-0.283	<u>-.466</u>	21.72	42.51
Unusual Experiences	-0.258	-.347	12.04	43.85
Workaholism	0.108	.029	0.08	1.64
R2C			38.13	
Affiliative	1.067	<u>.787</u>	61.94	<u>81.30</u>
Enhancing	-0.556	.049	0.24	7.48
Aggressive	0.032	.190	3.61	<u>59.56</u>
Defeating	0.415	<u>.438</u>	19.18	<u>70.30</u>

Note. Coefficients for primary contributors to the function are underlined

Function 3, which explained 34.9% of the variance between variable sets, received primary contributions from Workaholism, with a secondary contribution from Anger. The structure coefficient for Anger was positive, indicating that Anger was positively related to the function. The structure coefficient for Workaholism was negative, indicating that Workaholism was positively related to the function, but inversely related to Anger in the function. The Self-Enhancing, Self-Defeating, and Aggressive humor styles were the primary contributors to the synthetic predictor variable. Structure coefficients for the Self-Enhancing and Self-Defeating humor styles were negative, indicating that these humor styles were positively related to Workaholism and inversely related to Anger. The structure coefficient for the Aggressive humor style was positive, indicating a reverse relationship from the Self-Defeating and Self-Enhancing humor styles.

Function 3 was labeled “humor and negative temperament.” It appears to be describing individuals who exhibit high levels of anger and depression, with frequent

changes in mood. These individuals tend to utilize the Aggressive humor style, which they may use in an attempt to inflate their sense of self to the detriment of their relationships with others. They tend to use below average levels of both Self-Defeating and Self-Enhancing humor.

Table 42

Canonical Solution for Humor Styles Predicting Personality for Function 3

Variable	Coef	r_s	r_s^2 (%)	h^2 (%)
Affective Lability	0.274	.288	8.29	36.79
Anger	0.294	.360	12.96	40.62
Anhedonia	0.123	.106	1.12	35.49
Anxiousness	-0.032	-.077	0.59	22.69
Callousness	0.152	.200	4.00	<u>56.43</u>
Cognitive Problems	-0.089	-.101	1.02	<u>54.50</u>
Depressiveness	0.518	.263	6.92	40.07
Emotional Detachment	-0.005	-.068	0.46	16.74
Domineering	-0.010	.133	1.77	36.28
Exhibitionism	0.074	.153	2.34	16.20
Fantasy Proneness	-0.198	-.269	7.24	30.57
Grandiosity	0.124	.120	1.44	<u>54.53</u>
Health Anxiety	-0.074	-.054	0.29	22.58
Hostile Aggression	-0.427	.044	0.19	<u>62.05</u>

Table 42 (continued).

Variable	Coef	r_s	r_s^2 (%)	h^2 (%)
Irresponsibility	-0.031	.084	0.71	<u>49.38</u>
Manipulativeness	0.261	.109	1.19	<u>63.49</u>
Mistrust	-0.361	-.009	0.01	40.34
Non-Perseverance	-0.476	-.172	2.96	<u>47.57</u>
Non-Planfulness	0.149	.162	2.62	42.69
Norm Violation	0.248	.262	6.86	35.05
Peculiarity	-0.155	-.177	3.13	<u>48.76</u>
Perfectionism	0.157	-.074	0.55	2.87
Relationship Insecurity	0.127	.104	1.08	44.89
Rigidity	0.057	.017	0.03	<u>49.68</u>
Risk-Taking	-0.059	.099	0.98	32.26
Romantic Disinterest	0.028	-.068	0.46	12.77
Rudeness	0.213	.167	2.79	<u>63.96</u>

Self-harm	-0.155	-.058	0.34	26.86
Social Withdrawal	-0.050	-.132	1.74	27.70
Submissiveness	-0.314	-.267	7.13	43.23
Unusual Beliefs	-0.300	-.122	1.49	44.00
Unusual Experiences	0.221	-.060	0.36	44.21
Workaholism	-0.418	-.432	18.66	20.30
R2C			34.91	
Affiliative	0.279	-.127	1.61	<u>82.91</u>
Enhancing	-0.617	<u>-.617</u>	38.07	<u>45.55</u>
Aggressive	0.609	<u>.462</u>	21.34	<u>80.90</u>
Defeating	-0.698	<u>-.536</u>	28.73	<u>99.03</u>

Note. Coefficients for primary contributors to the function are underlined

Examining the Function 4 coefficients (Table 43), the relevant criterion variables were Depressiveness, Anhedonia and Anxiousness, with Submissiveness, Affective Lability, Social Withdrawal, Rudeness, Self-Harm, Irresponsibility, and Health Anxiety making secondary contributions. The structure coefficients for these personality constructs were all negative, with the exception of Rudeness, indicating that they are positively related to each other. The Self-Enhancing, Aggressive, and Affiliative humor styles were the dominant predicting variables. These humor styles were inversely related to the relevant criterion variables and these results were generally consistent with the theoretically expected relationships between adaptive and maladaptive humor use and personality. Function 4 was labeled as “humor and depressive symptoms.”

Table 43

Canonical Solution for Humor Styles Predicting Personality for Function 4

Variable	Coef	r_s	r_s^2 (%)	h^2 (%)
Affective Lability	-0.103	-.334	11.16	<u>47.95</u>
Anger	-0.080	-.039	0.15	40.77
Anhedonia	-0.188	-.442	19.54	<u>55.03</u>
Anxiousness	-0.004	-.426	18.15	40.84
Callousness	0.088	.029	0.08	<u>56.51</u>
Cognitive Problems	0.008	-.241	5.81	<u>60.31</u>

Depressiveness	-0.357	-.546	29.81	<u>69.88</u>
Emotional Detachment	0.030	-.113	1.28	18.02
Domineering	-0.065	.024	0.06	36.34
Exhibitionism	-0.003	.196	3.84	20.04
Fantasy Proneness	0.168	.143	2.05	32.62
Grandiosity	-0.463	-.099	0.98	<u>55.51</u>
Health Anxiety	-0.260	-.304	9.24	31.82
Hostile Aggression	0.124	.072	0.52	<u>62.57</u>
Irresponsibility	-0.082	-.330	10.89	<u>60.27</u>
Manipulativeness	0.055	-.002	<0.00	<u>63.49</u>
Mistrust	-0.024	-.208	4.33	44.67
Non-Perseverance	0.023	-.216	4.67	<u>52.24</u>
Non-Planfulness	-0.007	-.010	0.01	42.70
Norm Violation	-0.068	.073	0.53	35.58
Peculiarity	0.107	.047	0.22	<u>48.98</u>
Perfectionism	0.066	.091	0.83	3.67
Relationship Insecurity	-0.035	-.284	8.07	<u>52.16</u>
Rigidity	0.354	-.010	0.01	<u>49.69</u>
Risk-Taking	0.071	.149	2.22	34.48
Romantic Disinterest	-0.136	-.276	7.62	20.39
Rudeness	0.716	.327	10.69	<u>74.65</u>
Self-harm	-0.186	-.321	10.30	36.96
Social Withdrawal	-0.126	-.333	11.09	38.79
Submissiveness	-0.221	-.395	15.60	<u>58.83</u>
Unusual Beliefs	0.163	.014	0.02	44.02
Unusual Experiences	0.045	-.121	1.46	<u>45.67</u>

Table 43 (continued).

Variable	Coef	rs	rs ² (%)	
Workaholism	-0.215	-.111	1.23	21.53
R ² C			33.09	
Affiliative	0.001	.413	17.06	<u>99.97</u>
Enhancing	0.880	<u>.738</u>	54.46	<u>100.00</u>
Aggressive	0.705	<u>.438</u>	19.18	<u>100.00</u>
Defeating	-0.405	<u>-.105</u>	1.10	<u>100.00</u>

Note. Coefficients for primary contributors to the function are underlined

CHAPTER IV

DISCUSSION

The primary purpose of the current study was to assess whether the qualitatively distinct clusters of humor style usage, or, humor types, identified by Finn and Arnau (2014) could be replicated in a sample of undergraduate students and to examine the relationships between use of the humor styles, both individually and in combination, and a broad array of maladaptive and personality traits as well as the adaptive traits of hope and self-esteem. Utilization of humor styles was evaluated using the Humor Styles

Questionnaire, and the latent personality classes were derived via latent profile analysis (LPA).

Humor Types

Based upon statistical, theoretical, and practical considerations of the LPA results, the model specifying four latent classes was deemed to be optimal. The “Average Low” class is comprised of individuals who tend to use average levels of Affiliative and Self-Enhancing humor and below average levels of Aggressive and Self-Defeating humor. The “Maladaptive” class is comprised of individuals who tend to use below average levels of Affiliative and Self-Enhancing humor, and slightly above average use of Aggressive and Self-Defeating humor. The “High Humor” class was comprised of individuals who tend to use above average levels of Affiliative humor, slightly above average levels of Self-Enhancing humor, and also above average levels of both Aggressive and Self-Defeating humor. The “Adaptive” class was comprised of individuals who tend to use above average levels of Affiliative and Self-Defeating humor and below average levels of Aggressive and Self-Defeating humor.

Following identification of these relationships between individual humor styles and personality traits, the next step was to explore the meaning and external validity of the humor types. To accomplish this, class membership probabilities for each of the humor types were correlated with the CAT-PD-SF personality traits.

Humor and Personality

The second purpose of the present study was twofold. First, relationships between the humor styles, both individually and in combination, and a broad range of maladaptive personality constructs measured by the CAT-PD-SF, as well as anxiety and depression

and adaptive traits of hope and self-esteem. For the humor styles individually, a consistent pattern emerged, with the maladaptive humor styles positively related to maladaptive personality traits and inversely related to adaptive personality traits. The adaptive humor styles demonstrated the opposite pattern, being positively related to adaptive personality traits and inversely related to maladaptive personality. Given previous findings (e.g., Martin et al., 2003; Leist & Muller, 2012), these results were as expected and lend further support to the adaptive versus maladaptive conceptualization of the humor styles. Further, many of these relationships were of noteworthy magnitude, with thirty-five of the correlations exceeding $r = .350$, thirteen exceeding $r = .400$, and one exceeding $r = .500$, indicating strong relationships between humor styles and personality traits.

The Average-Low class exhibited inverse relationships with 22 of the 33 personality constructs measured by the CAT-PD-SF. The most noteworthy trait correlates of this class were *negative* correlations with Rudeness, Hostile Aggression, Manipulativeness, Domineering, and Risk-Taking. The Maladaptive class was positively related to 27 of the 33 personality constructs measured by the CAT-PD-SF, with 11 of these correlations exceeding $r = .350$ and 7 exceeding $r = .400$. This class was most highly correlated with Irresponsibility, Unusual Experiences, Anhedonia, Hostile Aggression, Grandiosity, Manipulativeness, and Unusual Beliefs.

The High-Humor class was positively but weakly related to 5 of the 33 personality constructs measured by the CAT-PD-SF. These relationships were with Rudeness, Peculiarity, Exhibitionism, Fantasy Proneness, and Non-Planfulness. The Adaptive class was inversely correlated with 29 of the 33 personality constructs measured

by the CAT-PD-SF, with 8 of these correlations exceeding $r = .350$. The Adaptive class was most highly correlated with Affective Lability, Manipulativeness, Irresponsibility, Relationship Insecurity, and Hostile Aggression.

The different patterns of relationships between each of the humor classes and the CAT-PD-SF constructs further support the conceptualization of some of the humor styles as adaptive versus maladaptive. Tables 5 and 6 used the relationships between the humor types and the Anhedonia and Irresponsibility traits to illustrate this. Looking at Anhedonia (a difficulty experiencing positive emotions, a lack of interest in engaging in activities, and psychomotor slowness), the “Maladaptive” humor type (high maladaptive humor use, low adaptive humor use) was significantly and positively correlated with Anhedonia. When high levels of adaptive humor use are combined with high levels of maladaptive humor use (the “High-Humor” humor type), there was no significant relationship with Anhedonia. When average levels of adaptive humor use are combined with low levels of maladaptive humor use (the “Average-Low” humor type), there was a significant inverse relationship with Anhedonia. Finally, when high levels of adaptive humor use are combined with low levels of maladaptive humor use (the “Adaptive” humor type), there was an even stronger inverse relationship with Anhedonia.

Similarly, when examining relationships between the humor types and Irresponsibility (failure to fulfill responsibilities in relationships and life roles; Table 42), the “Maladaptive” humor type demonstrated a significant positive relationship with Irresponsibility. However, there was no significant relationship between the “High-Humor” type and Irresponsibility. Furthermore, the “Average-Low” (average adaptive humor styles, low maladaptive humor styles) type was inversely related to

Irresponsibility, and the “Adaptive” humor type (with high levels of adaptive humor styles) was even more strongly inversely related to Irresponsibility.

This same general pattern was evident for a majority of the personality constructs measured by the CAT-PD-SF. Above average levels of maladaptive humor use combined with below average levels of adaptive humor use (i.e., the “Maladaptive” humor type) was strongly and positively related to 27 of the 33 personality constructs. However, when high levels of maladaptive humor use were combined with high levels of adaptive humor use (i.e., the “High-Humor type), most of the correlations with the maladaptive personality constructs were non-significant, suggesting that high use of adaptive humor seems to cancel out much of the maladaptive effect of the Aggressive and Self-Defeating humor styles, at least in terms of the constructs measured in the present study (i.e., maladaptive personality traits that are thought to form the basis for personality disorders). Average levels of adaptive humor use combined with below average levels of maladaptive humor use led to significant inverse relationships with 22 of the 33 personality constructs. Above average levels of adaptive humor use combined with below average levels of maladaptive humor use led to significant inverse relationships with 29 of the 33 personality constructs. Further, the relationships between the Adaptive humor type and the personality constructs were generally higher than those between the Average-Low humor type and the personality constructs.

The above results indicate that maladaptive humor use is strongly related to a broad array of generally maladaptive personality traits and that these relationships seem to be attenuated in the presence of adaptive humor usage. When both types of humor are used in above average levels, the detrimental effects of maladaptive humor use and the

beneficial effects of adaptive humor use appeared to cancel each other out. Low levels of maladaptive humor use combined with average levels of adaptive humor use appeared to provide some benefit, as this type of humor use was inversely related to 22 of the 33 personality constructs measured by the CAT-PD-SF. The most benefit, however, appeared to result from above average levels of adaptive humor use combined with below average levels of maladaptive humor use, as this combination of humor use was significantly inversely related to 29 of the 33 personality constructs measured by the CAT-PD-SF. This indicates that increased levels of adaptive humor use provide benefits above and beyond those that result from below average use of maladaptive humor.

Relationships between the humor type membership and depression, anxiety, stress, hope, and self-esteem were also explored. Maladaptive humor use was positively related to symptoms of depression, anxiety, and stress and inversely related to the adaptive constructs of hope and self-esteem, whereas adaptive humor use demonstrated the opposite pattern. These relationships further strengthen the conceptualization of the humor styles as adaptive versus maladaptive. In addition, these relationships were similar in nature to those identified between the humor types and the CAT-PD-SF constructs in that above average use of maladaptive humor in conjunction with below-average use of adaptive humor was positively related to symptoms of anxiety and depression and inversely related to measures of hope and self-esteem. The addition of above-average levels of adaptive humor use appears to cancel out the negative impact of maladaptive humor use, in terms of their relationships with psychological symptoms and the negative relationships with at least two adaptive constructs (hope and self-esteem). Average levels of adaptive humor use in conjunction with below average levels of maladaptive humor

use was negatively related to symptoms of depression and anxiety and positively related to measures of hope and self-esteem; however, as seen in the relationships between the humor types and the CAT-PD-SF traits, increasing levels of adaptive humor use combined with below-average levels of maladaptive humor use appear to have the most benefit to the user. Given that these relationships were similar to those seen with the CAT-PD-SF traits, this is evidence that the impact of both maladaptive and adaptive humor use generalizes to other aspects of mental health than just maladaptive personality traits. A further area of future research would be to examine correlations between humor types and a broad array of adaptive constructs related to positive mental health, such as character strengths (Peterson & Seligman, 2004) and Keyes' continuum of complete mental health (i.e., languishing, floundering, struggling, and flourishing; Keyes & Lopez, 2002).

Similar to the relationships identified between these personality traits and the individual humor styles, the relationships between the humor types and the personality traits were quantifiably strong in nature, with twenty-five of these correlations exceeding $r = .350$, nine exceeding $r = .400$, and one exceeding $.500$. Further, all but one of these strong relationships were between the Adaptive and Maladaptive humor types and the personality traits, indicating that these two types are most strongly related to adaptive and maladaptive personality constructs. The larger the discrepancy between an individual's use of adaptive and maladaptive humor, the stronger the relationship with adaptive and maladaptive personality traits, the direction of which is determined by which type of humor an individual tends to utilize. This also suggests an interactive effect. Although the current study approached this question by categorizing people based on different

combinations of humor styles, future research could also address this by directly testing for interactions using hierarchical moderated regression models.

Incremental Validity of the Humor Types

Given that one of the aims of the current study was to assess whether humor types are able to explain a significant amount of variance above and beyond that explained by the individual humor styles, a two-stage hierarchical multiple regression was conducted for each of the 33 constructs assessed by the CAT-PD-SF, with the personality construct as the dependent variable.

Hierarchical regression analyses provided evidence that the humor types predict a statistically significant amount of additional variance in 11 of the 33 personality traits, thus providing evidence of the ability of the humor types to explain a small, but noteworthy amount of variance above and beyond that explained by the individual humor styles in Unusual Experiences, Affective Lability, Self-Harm, Irresponsibility, Hostile Aggression, Unusual Beliefs, Anhedonia, Risk-Taking, Non-Planfulness, Rudeness, and Manipulativeness. Though the improvement in variance explained was relatively small for these 11 traits, it is noteworthy given the nature of these traits. These traits are particularly pathological in nature and have the potential to have an extremely negative impact on the individual's life. Any additional information that can be provided for personality traits such as self-harm has the potential ability to identify additional areas for intervention and the possibility of ameliorating negative outcomes.

The present study provides further evidence of the connection between the types of humor an individual uses and personality. Given that the humor types were able to explain incremental variance beyond that explained by the individual humor styles,

combined with the relationships demonstrated between the humor types and a broad array of adaptive and maladaptive personality traits, the present study provides evidence that the combination with which an individual uses the humor styles is important in predicting an individual's level on these personality traits, at least for some of the outcomes.

Canonical Correlation Analyses

A canonical correlation analysis demonstrated strong relationships among patterns of humor styles and the CAT-PD-SF personality traits. Function 1 was labeled "Humor and Egocentricity" given that, with the exception of Cognitive Problems, the primary contributing criterion variables are all personality traits in which the individual's personal needs are prioritized to a maladaptive extent. The combination of these personality traits is indicative of an individual who experiences difficulty taking another's perspective, feelings, or needs into account. The relationship between the humor styles and this function suggest that such individuals are more likely to use Aggressive and Self-Defeating humor and less likely to use Affiliative or Self-Enhancing humor.

The "Schizotypal Grandiosity" function appears to be describing individuals who are experiencing possible breaks from reality in conjunction with feelings of superiority and cold-heartedness. These individuals are less likely to utilize the Affiliative or Self-Defeating humor styles. An aggrandized sense of self would explain low utilization of the Self-Defeating humor given that someone who feels a sense of superiority is unlikely to make use of self-deprecating humor. A sense of superiority combined with callousness would likely explain the low levels of Affiliative humor, as increasing group cohesion is not likely to be a top priority for this type of individual.

The “Humor and Negative Temperament.” function appears to be describing individuals who exhibit high levels of anger and depression, with frequent changes in mood. These individuals tend to utilize the Aggressive humor style, which they may use in an attempt to inflate their sense of self to the detriment of their relationships with others. They tend to use below average levels of both Self-Defeating and Self-Enhancing humor.

The “Humor and Depressive Symptoms.” function describes individuals experiencing severe problems with depression and anhedonia combined with anxiousness, mood lability, and withdrawal. Such individuals may be at risk for engaging in suicidal behavior. Given these depressive symptoms, it is not surprising that these individuals tend to use below average levels of Self-Enhancing humor, as low use of Self-Enhancing humor has been demonstrated to be positively related to depression. Given the high levels of submissiveness and social withdrawal, it is not surprising that these individuals do not tend to use Aggressive or Affiliative humor.

Overall Implications

To date, few studies have examined relationships between the combination with which Martin’s humor styles are used and various aspects of mental health. The present study examined the relationships between the humor styles, both individually and in combination, and the CAT-PD-SF personality traits, as well as their relationship with symptoms of depression and anxiety, and measures of hope and self-esteem. The results provided further support for the conceptualization of the Affiliative and Self-Enhancing humor styles as adaptive and the Aggressive and Self-Defeating humor styles as

maladaptive. The ability of increasing levels of either adaptive or maladaptive humor use to cancel out the impact of the opposing type of humor was demonstrated (Tables 5 and 6). This ability was seen in the relationships between the humor types and the CAT-PD-SF personality traits as well as between the humor types and symptoms of anxiety and depression and measures of hope and self-esteem. Thus, it is noteworthy that the current study results suggest that the active effects of the maladaptive humor styles may be attenuated if one also uses Affiliative and Self-Enhancing humor.

The ability of the adaptive humor styles to cancel out the negative impact of the maladaptive humor styles suggests that an intervention which trains individuals to increase their use adaptive humor and decrease their use of maladaptive humor may have a positive impact on their mental health. Though the current study does not assess causality, and, if a hypothesis were made, it would be that personality has a larger effect on humor style use rather than vice versa, there are situations where humor use alone likely has a significant impact on the user's life. For example, an individual who tends to use high levels of the Aggressive humor style in conjunction with low levels of Affiliative humor is likely to demean and alienate those around them and thus reduce their social support. If the same individual continues to use these high levels of the Aggressive humor style but also uses similar levels of the Affiliative humor style, the results of the current study suggest that the negative impact of the Affiliative humor style and the positive impact of the Affiliative humor style may cancel out. Finally, if this individual reduces the amount of the Aggressive humor style they use in combination with high levels of Affiliative humor use, they may increase cohesion in their social network. Similar arguments can be made for other combinations of humor style use.

A number of the current personality disorders, based upon the categorical model, are risk factors for engaging in dangerous behaviors, such as non-suicidal and suicidal self-injury. As research, assessment, and intervention for personality disorders moves toward a dimensional, trait-based approach, an increase in knowledge about these personality traits, including information on validity, potential negative outcomes, and relationships with other aspects of mental health, is required in order to determine how best to implement interventions for individuals suffering from personality disorders. The current study provides information on the relationship between humor use and a number of maladaptive personality traits that are likely candidates for the new dimensional description of personality disorders. Further, a majority of personality disorders within the current diagnostic system lack optimal interventions at this point. An intervention involving the modification of humor use may prove to be a helpful adjunct to current interventions. Along these lines, it is important to note that the use of Self-Enhancing humor has been shown to be an effective coping strategy, as it buffers the relationship between life stressors and measures of maladjustment (Martin & Lefcourt, 1983).

Limitations of the Current Study

There are a number of limitations to the current study. First, the study was conducted online utilizing a sample of undergraduate students. Though a number of measures were put into place to optimize the validity and reliability of the study, the motivation of participants in the current study may have been low, leading to inattentive responding. However, validity questions were included in the questionnaire in order to assess for inattentive responding, and results were not included for individuals who failed to answer three of the five validity questions correctly.

A second possible limitation of the current study is the utilization of a measure of personality still in development. Though the developers released the static form of the measure that was used in the current study, the full measure is still in development, and thus there is little research regarding its validity at this time. However, the developers are putting the measure through a rigorous development process and the measure may very well become a gold-standard for the trait-based assessment of personality disorders. Therefore, the use of this measure is both a limitation and possible strength.

A third limitation of the current study is the sample size. Nylund et al. (2007) suggested a sample size of approximately 300 for LPA. However, due to time constraints, the sample used for the current study contained 263 participants; therefore, results need to be replicated in a larger sample.

Future Directions

The current study provides the foundation for a number of future studies. As mentioned previously, the results of the current study need to be replicated in a larger sample, with a large age range of participants. The current study assessed relationships between humor use and personality traits. As the trait-based approach to assessment of personality disorders is developed, a future study may examine relationships between humor styles and certain combinations or profiles of these personality traits. This would provide information on the types of humor utilized by certain problematic personality profiles.

Other future areas of research include examining correlations between the humor types and a broad array of adaptive constructs, such as character strengths (Peterson & Seligman, 2004). The current study provided evidence that the type of humor an

individual utilizes is related to adaptive as well as maladaptive outcomes. The current study examined relationships between the humor types and two adaptive constructs (self-esteem and hope). Examining relationships with other adaptive constructs would serve to expound upon the evidence of relationships between humor use and adaptive outcomes. In addition, longitudinal studies would be especially useful for evaluating outcomes associated with certain humor types over time, in terms of predicting future levels of symptoms (such as anxiety and depression) as well as positive outcomes, such as happiness, flourishing, and life satisfaction.

The current study examined how interactions of humor styles are related to a broad array of maladaptive personality traits as well as a limited number of adaptive constructs through the use of hierarchical multiple regression analyses and zero-order correlations. This question could be addressed from a different perspective utilizing interaction regression models. Addressing this question with a separate statistical analysis would provide evidence that the results of the current study are not an artifact of the statistical analyses utilized, and would provide a method for researchers to make predictions without having to sort research participants into groups. ▸

The results of the current study provide evidence that humor styles, both individually and in combination, are significantly related to a broad array of maladaptive personality traits as well as the positive constructs of hope and self-esteem. Further, accounting for the combinations with which the humor styles are used provided incremental validity in predicting relationships with this broad array of personality traits. One noteworthy finding in the current study was that the negative effects of maladaptive humor use may be canceled out by similar levels of adaptive humor use. Future studies

may further examine the relationships between humor use and a broad array of adaptive constructs, such as character strengths.

APPENDIX A

INSTITUTIONAL REVIEW BOARD NOTICE OF COMMITTEE ACTION

**INSTITUTIONAL REVIEW BOARD**

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NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 14070204

PROJECT TITLE: Humor Types and the Computerized Adaptive Test of Personality Informed Consent Form

PROJECT TYPE: New Project

RESEARCHER(S): Joseph Finn

COLLEGE/DIVISION: College of Education and Psychology

DEPARTMENT: Psychology

FUNDING AGENCY/SPONSOR: USM Clinical Psychology

IRB COMMITTEE ACTION: Exempt Review Approval

PERIOD OF APPROVAL: 07/17/2014 to 07/16/2015

Lawrence A. Hosman, Ph.D.
Institutional Review Board

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