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## Evaluating the Interpersonal Nature of Humor: Mapping Humor Styles Onto the Interpersonal Circumplex

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The University of Southern Mississippi

EVALUATING THE INTERPERSONAL NATURE OF HUMOR:  
MAPPING HUMOR STYLES ONTO THE INTERPERSONAL CIRCUMPLEX

by

Jessica Erin Vaughan

Abstract of a Dissertation  
Submitted to the Graduate School  
of The University of Southern Mississippi  
in Partial Fulfillment of the Requirements  
for the Degree of Doctor of Philosophy

August 2012

## ABSTRACT

### EVALUATING THE INTERPERSONAL NATURE OF HUMOR: MAPPING HUMOR STYLES ONTO THE INTERPERSONAL CIRCUMPLEX

by Jessica Erin Vaughan

August 2012

The present study examined the interpersonal content of the four humor styles outlined in the Humor Styles Questionnaire in order to gather additional information about the interpersonal content of these humor styles. This was accomplished by projecting each of the humor styles onto the interpersonal circumplex. Each of the humor styles possessed significant interpersonal content and demonstrated interpersonal cohesion such that the maladaptive humor styles were located in the Cold-Hearted region and the adaptive humor styles were located in the adjacent octants of Gregarious-Extroverted and Warm-Agreeable. These findings suggest that the adaptive humor styles and maladaptive humor styles possess similar interpersonal content when conceptualized as directed at both self and others in interpersonal contexts. In addition, the study examined whether the Humor Styles Questionnaire fit the psychometric criteria for circumplex structure. Based on where the humor styles projected on the interpersonal circumplex, the Humor Styles Questionnaire does not have circumplex structure. Implications for the measurement of humor in the interpersonal context will be discussed.

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A Dissertation  
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Approved:

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Dean of the Graduate School

August 2012

## DEDICATION

This is dedicated to Adam Wayne Brasher. I am eternally grateful for all of the love and support you gave me throughout this process. I miss you every day and even though you won't be here to see me walk across the stage, know that I could have never done this without you. In your memory.

## ACKNOWLEDGMENTS

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CHAPTER I  
INTRODUCTION  
Problem Statement

Most previous research on humor has focused primarily on the positive outcomes related to humor. These studies have regarded humor as a facilitative process and have demonstrated many adaptive correlates of humor, including more a positive self-concept as well as lower levels of depression, anxiety, and perceived stress (Abel 2002; Kuiper & Martin, 1998). However, other researchers have not found these benefits of humor, specifically when related to increased physical health (Porterfield, 1987). It is possible that these discrepancies, in part, are a result of varying definitions of humor in the research literature, including viewing humor as a coping strategy, an aesthetic response, or as a cognitive ability. In order to explain these discrepancies and create a more all-encompassing definition of humor, Martin, Puhlik-Doris, Larsen, Gray, and Weir (2003) outlined two intersecting dimensions that can be used to classify the different ways an individual may employ humor. The first dimension underlying the use of humor is whether humor is used to enhance one's self versus one's relationships with others. Enhancing one's self, an intrapsychic function of humor, is the use of humor to protect the self and includes the notions of humor as a defense mechanism or a coping strategy used to regain a sense of control over a situation. Conversely, using humor to enhance relationships with others, the interpersonal function of humor, involves using humor as a method of facilitating conversations and maintaining group cohesion while minimizing possible conflicts within the group. This serves to increase group morale and increase the bonds within the group. The second dimension underlying the use of humor whether it is used for benevolent versus injurious purposes. Injurious humor is meant to belittle others

or the self and is disparaging and denigrating. On the other hand, benevolent humor is used for facilitating relationships and enhancing positive feelings. These two dimensions lead to the classification of the following four different possible uses of humor: affiliative humor, self-enhancing-humor, aggressive humor, and self-defeating humor. Humor styles are defined according to these two dimensions based on the individual's self-report of how they typically use humor and for what purposes.

### The Present Study

There were two purposes of the current study. The first purpose was to assess the circular structure of the of humor style scores, as assessed by the Humor Styles Questionnaire (HSQ). Martin et al. (2003) outline humor styles as falling on two dimensions; however, the statistical criteria to determine whether or not scores from the measure fit a circumplex structure have not yet been applied. Therefore, when the humor styles were projected onto the interpersonal circumplex, the statistical criteria were applied to the circumplex in order to assess the circular structure of the construct. It was hypothesized that the Humor Styles Questionnaire would meet the psychometric criteria for circumplex structure. If a circumplex structure was uncovered, researchers that have previously used data involving the Humor Styles Questionnaire can reinterpret their findings in light of this discovery. If the structure of humor styles is not found to fit a circumplex, then the original simple-structure factor model of the HSQ will be evaluated with a confirmatory factor analysis.

The second purpose of this study was to examine which interpersonal styles were related to each humor style. Interpersonal styles are conceptualized as characteristic patterns of behavior that guide an individual's actions in social contexts. Therefore, it

was hypothesized that an individual's self-reported interpersonal style should be related to which humor style is most frequently employed. Specifically, individuals with an aggressive humor style were hypothesized to report an Arrogant-Calculating (BC) interpersonal style. Individuals with the Arrogant-Calculating interpersonal style regard themselves as more important and liked and also take away resources (love and status) from others. Similarly, when an individual employs the aggressive humor style, they are typically using this as a form of establishing dominance in the group and increasing their own feeling of self-worth by decreasing the worth of others. Individuals with primarily a self-defeating humor style were hypothesized to be more likely to report an Unassuming-Ingenuous (JK) interpersonal style. Individuals with this reported interpersonal style take away love and status from themselves while giving status to others in social interactions. By employing a self-defeating humor style, individuals are decreasing their status in a social situation, thereby increasing the status of the other group members. In addition, by becoming self-deprecating and degrading, the individual is removing love from the self. It was hypothesized that individuals with primarily affiliative humor use will be more likely to report a Warm-Agreeable (LM) interpersonal style. Individuals with this interpersonal style give love and status to others and feel love for themselves without feeling more important than other members of the group. Similarly, individuals with a predominately affiliative humor style use humor in order to facilitate group cohesion and unity and foster feelings of love and status within the group. Because of the favorable outcome of using this humor style, these individuals often feel liked by others without perceiving themselves as more important than others. Lastly, it was hypothesized that individuals that report high self-enhancing humor use would report a Gregarious-

Extraverted (NO) interpersonal style. Individuals with this interpersonal style report feelings of love and status for the self and do not take away love and status from others. When employing self-enhancing humor, the individual uses humor in order to increase feelings of resources for the self and is not concerned with taking resources from others.

## CHAPTER II

### REVIEW OF RELATED LITERATURE

#### Humor Styles Questionnaire

Martin et al. (2003) created the Humor Styles Questionnaire (HSQ) in order to assess the degree to which one tends to use humor for each of the four purposes described, referred to as humor styles. The HSQ is a 32-item self-report measure that assesses the frequency of use of each of the four distinct styles of humor. The items are designed to tap into the way individuals use humor in a variety of situations and for what purpose. The first type of adaptive humor is affiliative humor, which involves the use of humor in social situations as a way to bolster relationships and reduce tensions in group settings. An individual high on this dimension may use jokes to put others at ease and to increase the cohesiveness in social interactions. An example item is “I laugh and joke a lot with my friends”. The second adaptive type of humor is self-enhancing humor, in which an individual uses humor as a coping mechanism when faced with potentially stressful events. An individual that frequently uses humor in this way generally has a humorous outlook on life and can employ this mechanism to realistically assess a potentially aversive situation without allowing negative emotions to intervene. An example item is “If I am feeling depressed, I can usually cheer myself up with humor”. The first maladaptive type of humor is aggressive humor. This ridicule and teasing is meant to put others down and often alienates other individuals. People using this type of humor may have no regard for the impact of the sarcasm on others. An example is “If I don’t like someone, I often use humor or teasing to put them down”. The final type of humor is self-defeating humor, which involves negative humor at one’s own expense. An individual that frequently uses humor in this way will tend to make self-deprecating jokes

about himself in an attempt to gain approval from others. A sample item of this humor style is “I will often get carried away in putting myself down if it makes my friends or family laugh”.

Previous research has shown the scales of the HSQ to have good internal consistency (ranging from .77 to .81) (Martin et al., 2003). Each of the four dimensions is a relatively independent construct, as represented by the low intercorrelations between the four scales (Martin et al., 2003). The two adaptive humor styles (affiliative and self-enhancing) are positively correlated, as are the two maladaptive styles (aggressive and self-defeating), indicating that individuals that are high on one dimension may also engage in behavior from the associated dimension (i.e., individuals that use humor to enhance relationships may also use humor to enhance themselves). According to this theory, there are two motivation-related dimensions underlying the four humor styles, which seem to imply a circular structure of the humor styles. However, this circumplex model of humor styles has not yet been statistically examined. Therefore, the first purpose of the current study was to examine whether the relationships among the humor styles fits onto a circumplex structure. Given the interpersonal nature of the different uses of humor, the second purpose of the proposed study was to examine the associations between interpersonal style and the humor style of an individual.

Psychometric criteria exist to determine whether or not a given group of variables comprises a circumplex (Acton & Revelle, 2004). When circumplex structures are discovered in existing measures, this opens the possibility for secondary analysis of previously published data. Therefore, if a circumplex structure is uncovered, previous

studies using this measure may be able to reinterpret their findings in light of this discovery.

### Circumplex Structure

Very generally, a circumplex is a two-dimensional model that exemplifies the expected relationship among variables that are equal in complexity but differ in the content they convey (Guttman, 1954). The circumplex is a nonrestrictive correlation pattern in which a circular structure emerges following factor analysis (Gurtman, 1997). The pattern of relationships among the variables is such that they can be conceptualized as lying on a circle, with similar variables located closer together on the circle and opposing variables located directly across the circle from one other. Variables that are thought to have no relation are separated by ninety degree angles. By knowing where variables are located on the circle, an individual can infer the relationship among all of the variables. A circumplex portrayal of data is based on underlying assumptions about the nature of the constructs under examination. The circumplex model was proposed by Guttman (1954), who depicted it as a “system of variance which has a circular law of order” (p. 325). Acton and Revelle (2004) outlined several psychometric criteria for deducing circumplex structure. The variables must be interrelated, the domain is best represented by only two dimensions, and the variables do not cluster along these two axes but instead are spread out in the interstitial space. Ideally, the variables will be equally spaced along the circumference of the circle (Guttman). In order to demonstrate two-dimensionality, factor analysis may be performed. If two factors account for a sizeable portion of common variance, this criterion has been met (Wiggins, Steiger, & Gaelick, 1981). In addition, the variables have a constant radius from the center and no preferred

method of rotation. The fixed radius criterion states that all traits must have equal projections in two-factor space, meaning that they fall an equal distance from the center of the figure. In factor analysis, this criterion is referred to as equal communality (Gurtman, 1997). The alternative to the circumplex structure is simple structure. In a circumplex, items are distributed around the circle, whereas in a simple structure, items fall solely on one of the two axes. Simple structure contains items that load only on one factor and a circumplex has items that load onto more than one factor (Acton & Revelle, 2002). The interpersonal circumplex represents a nomological network that has been shown to be a useful framework for examining social constructs and the measures used to assess these constructs (Acton & Revelle, 2002). Because the Humor Styles Questionnaire conceptualizes humor styles as based upon two underlying dimensions, with a possible circular structure, one purpose of the present study was to evaluate the fit of the humor style scores in terms of the aforementioned psychometric criteria for circular structure. Statistical criteria have been developed in order to test the circumplex structure of a construct and were applied to the humor styles once they were projected onto the interpersonal circumplex in order to assess the structure of this construct.

### Humor and Interpersonal Styles

Interpersonal theory assumes that every behavior performed in a social interaction reflects an effort to achieve and maintain self-esteem and to avoid anxiety. An individual's typical actions in achieving these goals are referred to as interpersonal reflexes and personality is thought to comprise all of an individual's interpersonal reflexes (Leary, 1957). Interpersonal theory examines the effects of these interpersonal reflexes on social interactions and on the individual's well-being (Gurtman, 1992).

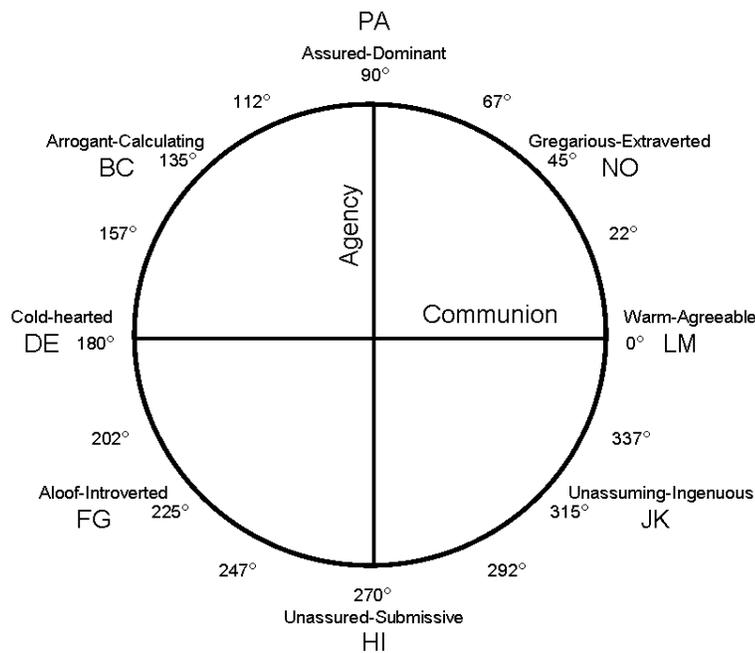
Humor is essentially a social phenomenon, occurring primarily in social contexts and employed to fulfill a variety of interpersonal functions including social control, status maintenance, group cohesion, and integration (Martin, 2007). For example, Graham (1995) found that humor decreased the social distance between two individuals when first meeting, giving individuals rated as having high humor levels a distinct social advantage over those with low humor levels. Because humor is used in a variety of social contexts for many different purposes, it was hypothesized that the humor styles would map on to similar interpersonal styles. Interpersonal styles are patterns of behavior that guide the social situations an individual seeks out and how that individual performs in these situations. Therefore, interpersonal styles should be related to which humor style is most often employed by an individual. The second purpose of the study was to examine whether the humor styles are associated with self-reported interpersonal styles. In order to understand the interpersonal similarities and differences in humor styles employed, the interpersonal circumplex (Trapnell & Wiggins, 1990) was used as the nomological network for evaluating the interpersonal styles associated with these humor styles.

Previous research on personality and humor styles has focused on Big-5 personality traits as measured by the Big Five Inventory. For example, Martin et al. (2003) found a number of noteworthy and statistically significant correlations between Big-5 personality traits and humor styles. Extraversion was most strongly related to Affiliative humor ( $r = .47$ ). It was also moderately related to Self-enhancing humor ( $r = .28$ ), but unrelated to Aggressive and Self-defeating humor ( $r = .13$  and  $.10$ , respectively). Aggressive and Self-defeating humor were negatively related to Agreeableness ( $r = -.59$  and  $-.23$ , respectively) and Conscientiousness ( $r = -.37$  and  $-.34$ , respectively), both of which

were unrelated to Affiliative and Self-enhancing humor. Aggressive and Self-defeating humor were both positively related to Neuroticism ( $r = .21$  and  $.35$ , respectively), which was also negatively related to Self-enhancing humor ( $r = -.37$ ). Openness to Experience was related to both Affiliative ( $r = .23$ ) and Self-enhancing humor ( $r = .27$ ), but not Aggressive or Self-defeating humor. No previous research has examined the relationship between humor styles and the interpersonal circumplex.

The interpersonal circumplex, originally conceptualized and described by Timothy Leary (1957), is typically organized around orthogonal axes of dominance (versus submission) and warmth (versus hostility) (alternately titled agency and communion, respectively; Horowitz, 2004). These are the two primary components that are thought to underlie the majority of dispositional consistencies in patterns of social behavior. According to interpersonal theory, individuals attempt to navigate social interactions by granting or withholding status and love to themselves and to others (Foa & Foa, 1974). This model is defined by a two-coordinate system which is represented by vertical (dominance) and horizontal (warmth) axes. Foa (1965) conducted an analysis of the facets of the interpersonal variables and concluded that each facet could be defined by a combination of a) object (self or other), b) resource (love or status) and c) directionality (giving or taking away). An individual typically behaves in social settings in a manner predicted by their personality characteristics (Wiggins & Trobst, 1997). For example, an individual who is routinely outgoing and energetic may seek situations in which they give resources (love and status) to those in need (others). This individual will perceive himself as liked by others (love) and may also feel more important than others in the helping situation (status) because they are able to provide resources. This mode of social

interaction is referred to as Gregarious-Extraverted (NO) in the interpersonal circumplex. There are seven other patterns of social behavior in this model that differ from one another in the values of the aforementioned facets (Wiggins, 1995). The other variables include Assured-Dominant (PA), Arrogant-Calculating (BC), Cold-Hearted (DE), Aloof-Introverted (FG), Unassured-Submissive (HI), Unassuming-Ingenuous (JK), and Warm-Agreeable (LM). Each variable differs from the preceding variable by only one facet. The interpersonal variables are divided into eight equal sections of 45° that are designated by letters and by descriptive titles. Letters were previously used (Freedman, Leary, Ossario, & Coffey, 1951) in order to designate 16 interpersonal variables. Current research has combined these variables into octants.



*Figure 1.* The interpersonal circumplex. This figure shows the 8 octants included in the interpersonal circumplex, as well as the two coordinates. “The Interpersonal Circumplex,” by Wiggins, Trapnell, & Phillips, 1988.

The interpersonal profile of an individual can be constructed using the Interpersonal Adjectives Scale (Wiggins, 1995) (and modified versions of this survey, such as the Big Five version). The profile's vector length and angular location are used in order to describe the characteristic interpersonal style for that individual. The angular location determines which of the styles is most characteristic of the individual, whereas the vector length determines the intensity in which this interpersonal pattern is expressed (Wiggins & Trobst, 1997).

## CHAPTER III

### METHODOLOGY

#### Participants

Participants were 360 students (76 men and 284 women) enrolled in undergraduate psychology courses who participated in return for partial fulfillment of a research participation requirement. The mean age of participants was 21.07 years ( $SD = 4.64$ ). The racial/ethnic composition was 54% White, 39% Black, 2% Asian, and 5% Other.

#### Measures

##### *Humor Style*

Humor style was assessed using the Humor Styles Questionnaire (HSQ; Martin et al., 2003). This 32-item self-report measure assesses the frequency of use of four different styles of humor, with eight items pertaining to each style. The questions are designed to assess how individuals use humor in a variety of situations and for what purpose. Two of the humor styles are adaptive and two are maladaptive and each style has either a self or other focus. The four humor styles are (1) affiliative (adaptive, other-focused) “I laugh and joke a lot with my friends”; (2) self-enhancing (adaptive, self-focused) “If I am feeling depressed, I can usually cheer myself up with humor”; (3) aggressive (maladaptive, other-focused) “If I don’t like someone, I often use humor or teasing to put them down”; and (4) self-defeating (maladaptive, self-focused) “I will often get carried away in putting myself down if it makes my family or friends laugh”. Each item is rated on a 7-point Likert scale that ranges from (1) “totally disagree” to (7) “totally agree”. Martin et al. (2003), as well as Saroglou and Scariot (2002), found that

the intercorrelations between the four humor styles were low to modest, indicating good discriminant validity. In addition, both sets of researchers found acceptable Cronbach alpha reliabilities for each of the four HSQ scales (alphas = .77 to .81). In addition, the Humor Styles Questionnaire is significantly related to other measures of humor, including the Multidimensional Sense of Humor Scale and the Humor Coping Scale of the Coping Orientations to Problems Experienced Scale (Martin et al., 2003). In the current study, the Cronbach alpha reliabilities for three of the four scales were acceptable (alphas = .77 to .80). However, the Cronbach alpha for the Aggressive humor style was .63, indicating less internal consistency for the items in this scale.

### *Interpersonal Style*

Interpersonal style was assessed by the Interpersonal Adjective Scales Revised-Big Five Version (IASR-B5; Trapnell & Wiggins, 1990). This self-report measure was developed as an extension of the Revised Interpersonal Adjective Scale (Wiggins et al., 1988) in order to include the Big Five dimensions neuroticism, conscientiousness, and openness to experience. The measure is comprised of 124 adjectives that are rated for self-accuracy on an 8-point Likert scale that ranges from (1) “extremely inaccurate” to (8) “extremely accurate”. Octant scores are derived from the participant’s ratings on 64 of the adjectives, which reflect the test-takers levels of interpersonal interaction at all possible combinations of Dominance and Warmth. These items include all possible intersections of the two primary axes (i.e., Dominance and Warmth), in order to obtain a complete understanding of an individual’s pattern of social interaction. An individual’s standing on the dominance dimension is closely related to the extraversion of the individual, whereas their standing on the warmth dimension is correlated with

agreeableness. Three additional 20-item scales measure the remaining Big-Five traits of openness to experience, conscientiousness, and neuroticism. Previous research has demonstrated the IASR-B5 octants and the Big-Five scales have strong construct validity and internal consistency. The IASR-B5 octants were correlated with the NEO-Personality Inventory and the Hogan Personality Inventory, indicating good convergent validity with other measures of personality (Trapnell & Wiggins, 1990; Wiggins & Broughton, 1991). In the present study, the eight interpersonal styles mentioned previously were used in analyses and the Big-Five variables were not used. Previous research has shown the relationship between the Big-Five variables and humor styles, as outlined above.

#### Procedure

Participants were enrolled in undergraduate psychology courses and completed the study for course credit or extra credit. Participants completed the study online using a computer of their choosing. After providing informed consent, participants were asked to complete a demographics questionnaire and the IASR-B5 and the HSQ, which in total lasted approximately thirty minutes. In return for participation in the study, participants were given either extra or required credit for their psychology courses. The present study was approved by the Institutional Review Board and a copy of this approval is located in the Appendix.

CHAPTER IV  
ANALYSIS OF DATA

Descriptive Statistics

Intercorrelations and descriptive statistics for the measures of humor style and interpersonal style are displayed in Table 1.

Table 1

*Intercorrelations and Descriptive Statistics for Measures of Humor Style and Interpersonal Style*

	1	2	3	4	5	6
1. Affiliative Humor	—					
2. Self-Enhancing Humor	0.45 <sup>***</sup>	—				
3. Aggressive Humor	-0.12 <sup>*</sup>	-0.01	—			
4. Self-Defeating Humor	-0.35 <sup>***</sup>	0.08	0.44 <sup>***</sup>	—		
5. Agency	0.16 <sup>**</sup>	0.37 <sup>***</sup>	0.06	0.08	—	
6. Communion	0.52 <sup>***</sup>	0.30 <sup>***</sup>	-0.44 <sup>***</sup>	-0.34 <sup>***</sup>	0.04	—
<i>M</i>	43.08	34.16	27.64	23.61	-0.34	-0.49
<i>SD</i>	8.22	9.25	7.45	9.00	0.70	1.19
$\alpha$	0.77	0.80	0.63	0.80		

*Note.* The internal consistencies for agency and communion were estimated from internal consistency coefficients for the constituent octant scores (Nunnally & Bernstein, 1994).

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

Affiliative humor is positively correlated with self-enhancing humor and negatively correlated with self-defeating humor and aggressive humor. Affiliative humor and self-enhancing humor are positively correlated with agency and communion. Self-defeating humor and aggressive humor are positively correlated. Self-defeating humor and aggressive humor are negatively correlated with communion and are not significantly related to agency.

### Circumplex Statistics

#### *Confirmation of the Circular Structure of the IASR-B5*

The IASR-B5 is derived from the interpersonal circumplex which implies that it should conform to the predicted circular structure. In order for the circular structure of the IASR-B5 to be confirmed the correlations between octants that are closer together on the circumplex must be greater than the correlations for those octants that are more distant. On a practical level, this leads to 288 predictions concerning order such that the correlations between octants separated by  $45^\circ$  should be greater than those separated by  $90^\circ$  (64 predictions),  $135^\circ$  (64 predictions), and  $180^\circ$  (32 predictions). The correlations for the octants separated by  $90^\circ$  should, in turn, be greater than those separated by  $135^\circ$  (64 predictions) or  $180^\circ$  (32 predictions). Finally, the correlations for octants separated by  $135^\circ$  should be greater than the correlations for octants separated by  $180^\circ$  (32 predictions).

To determine if the IASR-B5 conformed to its predicted circular structure in the present study, a correspondence index (CI) was computed as recommended by Hubert and Arabie (1987). The CI serves as an indicator of the fit between the obtained

correlations with the 288 order predictions mentioned earlier. The CI is computed using the following formula:

$$CI = \frac{\text{number of correct predictions} - \text{number of incorrect predictions}}{\text{total number of predictions}}$$

The CI can be interpreted as a Somers's statistic (Somers, 1962) that can range from +1 (all of the order predictions were met) to -1 (none of the order predictions were met). To evaluate the significance of the CI, a randomization test of hypothesized order relations was employed (Hubert & Arabie, 1987; Rounds, Tracey, & Hubert, 1992). The CI and the subsequent randomization test were computed using the statistical package RANDALL (Tracey, 1997). The results of these tests found that 284 of the 288 order predictions were met ( $CI = .98, p < .001$ ). The significance of the randomization tests suggests that the circular structure of the IASR-B5 was maintained in the present study.

#### *Circumplex Structure of the HSQ*

The Humor Styles Questionnaire was projected on to the interpersonal circumplex (as displayed in Figure 2). The two maladaptive humor styles, aggressive humor and self-defeating humor, clustered in a 5° degree arc, indicating a high degree of correlation between the two styles. In addition, the two adaptive humor styles, affiliative humor and self-enhancing humor, were located in adjacent octants on the interpersonal circumplex. Based on these projections, the Humor Styles Questionnaire does not meet the psychometric criteria for circumplex structure due to a lack of two-dimensionality and instead possesses simple structure.

#### *Confirmatory Factor Analysis of the HSQ*

Because the Humor Styles Questionnaire did not meet the psychometric criteria for circumplex structure, the original simple-structure factor model of the HSQ was

evaluated with a confirmatory factor analysis. The CFA was conducted using Mplus using the covariance matrix as the matrix of correlations that was analyzed. A hierarchical model, based on the structure reported by Martin et al. (2003), was tested, with four first-order factors. Means and intercepts were not estimated in any of the models.

As noted by Arnau, Broman-Fulks, Green, and Berman (2009), most researchers propose inspection of multiple fit indices (cf. Hoyle & Panter, 1995; Thompson & Daniel, 1996). To date, Hu and Bentler (1999) have conducted the most extensive Monte Carlo evaluation of indices of fit, and therefore their recommended cutoff values for the fit statistics are the most commonly used. Based on the recommendations outlined by Hu and Bentler, model fit was evaluated using two indices of fit including the comparative fit index (CFI), which is expected to be .95 or greater to indicate good model fit, and the RMSEA, which is expected to be close to .06 or less to demonstrate good model fit.

Based on the cutoff values recommended by Hu and Bentler (1999), the CFA of the current data did not indicate good model fit. The CFI = 0.653, well below the expected .95. In addition, the RMSEA value was well above the expected value of .06 or less (RMSEA = 0.125). Finally, the chi-square value was 3044.88 ( $p = 0.000$ ). Based on the recommended fit statistics, these values do not indicate good model fit according to the CFA.

#### Projection onto the Interpersonal Circumplex

Using the procedure outlined by Wiggins and Broughton (1991), the location of each HSQ scale score within the space defined by the interpersonal circumplex was determined by finding its association with the two principal dimensions of the circumplex

(i.e., agency and communion). These coordinates identified the location of each humor style and are described using their angular displacement and amplitude. Angular displacement refers to the location of a point on the circumplex relative to the positive horizontal axis (i.e., communion) and is calculated as:

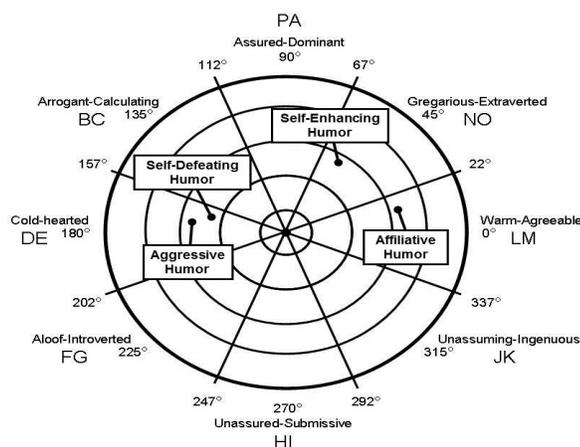
$$\text{Angular Displacement} = \arctan (\text{Agency}/\text{Communion}).$$

Amplitude (i.e., vector length) is the distance of a location from the origin and is calculated as:

$$\text{Amplitude} = (\text{Agency}^2 + \text{Communion}^2).$$

The amplitude characterizes the strength of the interpersonal nature of the construct such that a construct with strong interpersonal characteristics will have a relatively large amplitude placing it nearer the circumference of the circumplex. The common heuristic used to determine whether a construct possesses significant interpersonal content is an amplitude exceeding .30 (Gurtman, 1991).

The results for the projection of the humor styles into interpersonal circumplex space are shown in Figure 2.



*Figure 2.* Projection of the Humor Styles into Interpersonal Circumplex Space. This figure shows the location of each of the humor styles within an octant of the interpersonal circumplex.

Each humor style possessed significant interpersonal content (i.e., amplitude exceeded .30). The interpersonal similarity among the humor styles was estimated by using the proximity of their angular displacements. Cosine-difference correlations – which are equal to the cosine of the angle of separation between the measures (Gurtman, 1992, 1999) – served as the measure of interpersonal similarity. For example, if two humor styles had the same angular displacement, their cosine-difference correlation would be equal to 1 (i.e.,  $\cos[0] = 1$ ). Two styles separated by  $90^\circ$  would have a cosine-difference correlation of 0, styles separated by  $180^\circ$  would have a cosine-difference correlation of -1, etc. The cosine-difference correlations for the humor styles are presented in Table 2.

Table 2

*Cosine-Difference Correlations and Descriptive Statistics for Item-Centric Analyses*

	1	2	3	4
1. Affiliative Humor	—			
2. Self-Enhancing Humor	.82	—		
3. Aggressive Humor	-.91	-.51	—	
4. Self-Defeating Humor	-.87	-.43	.99	—
Circular mean	11.20 <sup>o</sup>	39.27 <sup>o</sup>	184.98 <sup>o</sup>	161.05 <sup>o</sup>
Octant location	LM	NO	DE	DE
Mean item amplitude	.55	.48	.45	.35
Mean item loading	.37	.32	.28	.26
Breadth of coverage				

*Note.* Each of these correlations was statistically significant ( $p < .001$ ). The shaded wedge for the breadth of coverage was defined by the instrument's circular mean  $\pm$  its circular standard deviation (i.e., arc cosine of standardized item loadings).

These analyses found a high degree of interpersonal cohesion among the humor styles such that the average cosine-difference correlation was .89. This interpersonal cohesion can be seen in the clustering of the two maladaptive humor styles (aggressive humor and self-defeating humor) within the Cold-Hearted (DE) octant (i.e., their angular displacements were between  $167.08^{\circ}$  and  $172.30^{\circ}$ ). In addition, the adaptive humor styles (affiliative humor and self-enhancing humor) clustered in adjacent octants, suggesting these humor styles possess similar interpersonal content. Specifically, the affiliative humor style was located in the Warm-Agreeable octant (LM) and the self-enhancing humor style was located in the Gregarious-Extroverted (NO) octant. Their angular displacements were between  $16.51^{\circ}$  and  $51.66^{\circ}$ .

#### *Item-Centric Analyses*

These analyses examined the location of the items constituting the Humor Styles Questionnaire on the interpersonal circumplex (Gurtman, 1997, 2009; Pincus & Gurtman, 1995). This approach allows for an understanding of three primary features of these humor styles: thematic quality, breadth of coverage, and factorial saturation (see Gurtman, 2009, for a review). The results of these item-centric analyses are presented in Table 2. *Thematic quality* refers to the interpersonal style that best characterizes the constituent items for each humor style and is represented by the circular mean. The circular mean for each scale is similar to its angular displacement which was displayed in Figure 2. The circular means ranged from  $11.20^{\circ}$  (Affiliative Humor Style) to  $184.98^{\circ}$  (Aggressive Humor Style) which is consistent with the earlier projection of these style showing that the maladaptive humor styles were located in the Cold-Hearted (DE) octant

and the adaptive humor styles were located in either the Gregarious-Extraverted (NO) or the Warm-Agreeable (LM) octants.

*Breadth of coverage* refers to the dispersion of an instrument's items around its circular mean (i.e., circular variance). Gurtman and Pincus (2003) referred to instruments that sample from a relatively narrow range of the circumplex as having "fidelity" of measurement, whereas those that sample more broadly are referred to as having greater "bandwidth" (see Cronbach, 1990, for a similar idea). The humor items were characterized by a relatively wide breadth of coverage that ranged from  $1.39^\circ$  for ("I can't usually think of witty things to say when I'm with other people") to  $177.29^\circ$  for ("I often try to make people like or accept me more by saying something funny about my own weaknesses, blunders, or faults"). This broad coverage suggests that the items assessing humor style have relatively high levels of bandwidth.

The amount of variance that an instrument shares with the interpersonal circumplex is referred to as *factorial saturation*. Basically, this refers to how much "interpersonal content" a given measure actually has in terms of the interpersonal circumplex (Gurtman, 1991). Factorial saturation is calculated as the average amplitude of the measure's items. The mean item amplitude is similar but not identical to the instrument amplitudes displayed in Figure 2. The humor styles were relatively consistent in terms of their interpersonal content with mean item amplitudes ranging from .35 (Self-Defeating Humor) to .55 (Affiliative Humor). These values are consistent with those that have been found for other interpersonal constructs such as dependency (Pincus & Gurtman, 1995).

## CHAPTER V

### SUMMARY

#### Discussion of Findings

The first purpose of the present study was to assess the circular structure of the of humor style scores, as assessed by the Humor Styles Questionnaire (HSQ). Based on the projection of the humor styles onto the interpersonal circumplex, the psychometric criteria for circumplex structure were not met. The humor styles clustered together, with the maladaptive humor styles located in the same octant and the adaptive humor styles located in adjacent octants. This can be seen in Figure 2, as well as individual item clusters which are shown in Figure 3. The HSQ did not meet the criterion of two-dimensionality, as the humor styles were not equally loading onto both dimensions (agency and communion).

In addition, a confirmatory factor analysis of the HSQ was conducted in order to evaluate the simple-structure factor model. Based on the CFA, the HSQ did not display good fit and did not meet the recommendations outlined by Hu and Bentler (1999) for good fit.

The second purpose of the present study was to empirically evaluate the interpersonal content of the four humor styles. The results of the present study provide insight into the interpersonal nature of the humor styles. Specifically, each of the humor styles was found to possess significant interpersonal content and to map onto the interpersonal circumplex in ways that are theoretically coherent. Further, the humor styles demonstrated interpersonal cohesion such that the maladaptive styles were located within a 5° arc spanning the Cold-Hearted (DE) octant and the adaptive humor styles

were located within a 35° arc spanning the Warm-Agreeable (LM) and the Gregarious-Extroverted (NO) octants. These results suggest that the adaptive humor styles and the maladaptive humor styles possess a fair degree of overlap with regard to interpersonal style. However, as demonstrated, they are located in separate octants, indicating that there is some degree of difference in interpersonal content between the two styles. In addition, examining the location of each of the humor styles on the interpersonal circumplex can give information about how they are related to each other in terms of the interpersonal content they possess. As well as the two maladaptive styles being very similar interpersonally, they are also located directly across the interpersonal circumplex from affiliative humor, indicating they are opposing variables in terms of the interpersonal content they possess. Self-enhancing humor is located at close to a 90° degree angle from the two maladaptive humor styles, indicating they have little to no relation with each other. This interpersonal consistency also emerged when the constituent items of the humor styles were projected onto the interpersonal circumplex.

Hypotheses were that the aggressive humor style would project on the Arrogant-Calculating (BC) octant and the self-defeating humor style would project on the Unassuming-Ingenuous (JK) octant. However, both of these humor styles fell within the Cold-Hearted (DE) octant, indicating that they possess much more similar interpersonal content than originally predicted. Individuals with this Cold-Hearted (DE) interpersonal style give status to themselves while taking resources (love and status) from others. They regard themselves as more important in the group dynamic, with no regard for whether they are liked by others. This interpersonal style is similar to Martin et al.'s conceptualization of aggressive humor, in which an individual asserts dominance over a

group by taking away love and status from others by ridiculing or teasing others.

However, this interpersonal style is not congruent with Martin et al.'s description of self-defeating humor. When employing self-defeating humor, an individual is attempting to take status from themselves and garner love for themselves by ridiculing themselves in hopes to gain approval from others (thus granting status to others). This is very dissimilar to what is described in the Cold-Hearted octant, in which an individual is looking for assert dominance over a group and take resources from others. Future research involving individual item analysis may be able to provide additional information about why these two styles fall within the same octant, when their intended purposes as outlined by Martin et al. are clearly very different.

The affiliative humor style was predicted to project on the Warm-Agreeable (LM) octant, and the Self-Enhancing humor style was predicted to project on the Gregarious-Extroverted octant (NO). Both of these predictions were met, indicating that affiliative humor styles are located on adjacent octants and thus possess similar interpersonal content. This is consistent with Martin et al.'s (2003) initial prediction that self-enhancing humor and affiliative humor are related because of the similar interpersonal content these styles possess. Individuals with this Gregarious-Extroverted (NO) style give love and status to others and feel love for themselves without feeling more important than other members of the group. Similarly, individuals with a predominately affiliative humor style use humor in order to facilitate group cohesion and unity and foster feelings of love and status within the group. Because of the favorable outcome of using this humor style, these individuals often feel liked by others without perceiving themselves as more important than others. Individuals with this Warm-Agreeable (LM) style report feelings of love and

status for the self and do not take away love and status from others. When employing self-enhancing humor, the individual uses humor in order to increase feelings of resources for the self and is not concerned with taking resources from others.

By mapping the humor styles on to the interpersonal circumplex, we are given additional information about the specific interpersonal content each of these styles contains. For example, affiliative humor is associated with giving love and status to others and feeling love towards themselves without feeling an increased sense of importance in the group. By adding Foa's three facets of interpersonal variables (self and other, love and status, and granting and withholding), we are able to glean additional information about why a particular humor style results in a specific outcome both for the individual that produces the humor and the intended outcome for the recipients of the humor interaction. With affiliative humor, individuals are focused on giving love and status to others without establishing themselves in a position of dominance, which likely explains the increased group cohesion and lack of power differential in the group. In addition, the individual feels love for the self, which is likely why affiliative humor is correlated high levels of global and social self-esteem (Kuiper, Grimshaw, Leite, & Kirsh, 2004). Similarly, self-enhancing humor is focused on granting love and status to self with no regard for others, which is very similar to how Martin et al. (2003) initially conceptualized this humor style (focused on self instead of others). By projecting the humor styles onto the interpersonal circumplex, we are able to glean additional information regarding the individual's intentions for self and others in regard to granting or withholding love and status. This additional information can be used to assess the styles for similarity in interpersonal content, as well as confirm Martin et al.'s

conceptualization about how each of the four humor styles operates in interpersonal settings.

### Limitations

It is important to acknowledge some of the potential limitations of the present study. First, the present study relied exclusively on self-report measures, which may have artificially inflated the associations between humor styles and interpersonal styles. Future researchers may wish to include actual observations of behavior in order to assess interpersonal style and humor style or ask an outsider rater that has a close relationship with the individual to provide additional information regarding the individual's interpersonal style and humor style.

A second potential limitation is the use of data obtained exclusively from undergraduate students. This may limit the generalizability of the present findings to other samples. In order to better understand the role of developmental changes in interpersonal style or humor style, it will be necessary for future researchers to extend the sample beyond undergraduate students.

Another limitation of this study is that it was conducted online. According to Dietz-Uhler and Sherman (2005), there are problems specific to internet-based studies. For example, there is no interaction between the experimenter and the participant. As a result, participants are unable to ask the experimenter to clarify any questions that may arise when completing the measures. To minimize this problem in the current study, the email address of the principal investigator was provided to participants so that contact was available in the event of confusion. No attempts to contact the investigator regarding clarification were made. Another potential problem with collecting data online is that the

findings may be negatively affected by the haphazard responding of unmotivated participants (Azar, 2000). However, a previous study comparing a large internet sample with a set of 510 published traditional samples found web-based studies were not negatively affected by unmotivated participants (Gosling, Vazire, Srivastava, & John, 2004). Furthermore, Gosling et al. (2004) found web-based findings to be consistent with findings from traditional methods. In the current study, results were scanned to assess for random responding and participants who were found to be haphazardly completing the questionnaires were given the opportunity to re-complete the study.

#### Future Directions

Future research should expand on current findings, in part by addressing the limitations of the current study. Previous literature has focused on relations among constructs in the general population, with limited emphasis on differences in these relations between genders and different ethnic groups. Such differences, if found, would point to the importance of evaluating how these constructs may operate differently in men and women and across ethnic groups.

Although age was not a variable of interest in the current study, it can be hypothesized that individuals in different age groups may employ humor styles in different situations and for varying purposes. Furthermore, since humor is conceptualized as a “mature defense mechanism”, their usage of humor may change and develop over time. For example, individuals may employ more sophisticated forms of humor and employ humor as a coping mechanism, as opposed to purely entertainment usage.

Though mapping the humor styles onto the interpersonal circumplex gives us additional information about the individual who is producing humor and their intended

effects for self and others, it still does not give information about the recipients' response to the humor and how this might be guided by their own interpersonal characteristics. Future research focusing on the individual receiving the humor interaction would lead to further clarification on how the humor impacts both individuals in the interpersonal interaction.

Because the maladaptive humor styles did not fall on the interpersonal circumplex as predicted, individual item analysis may be able to provide additional information. For example, how many items from each style fell within a particular octant and also which specific octant they fell into may give some additional information on why the maladaptive styles did not fall as expected on the interpersonal circumplex. When looking at the individual items for aggressive humor and self-defeating humor as they project on the interpersonal circumplex, there does not appear to be any clear distinction between the two scales on where they fall on the circumplex. Therefore, there appears to be considerable overlap in the content two scales contain and the theoretical distinction between the two is not as clearly defined in this study. In addition, the cronbach alpha for the aggressive humor style indicated that this scale contained items that were not closely related to each other. Further examination of the items that comprise this scale made lead to development of a revised scale with items that more closely resemble each other. Additionally, the item wording of both scales could be changed in order to more clearly distinguish between the content of the two scales.

Lastly, the confirmatory factor analysis of the Humor Styles Questionnaire did not indicate good fit of Martin et al.'s designated model. Therefore, an exploratory factor

analysis should be conducted in order to examine why the expected model did not fit and to gain a better understanding of the underlying factors.

## APPENDIX A

### INSTITUTIONAL REVIEW BOARD NOTICE OF COMMITTEE ACTION



#### THE UNIVERSITY OF SOUTHERN MISSISSIPPI

Institutional Review Board

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#### HUMAN SUBJECTS PROTECTION REVIEW COMMITTEE NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Human Subjects Protection Review Committee 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: 11030103

PROJECT TITLE: **Evaluation of the Circumplex Structure of the Humor Style Questionnaire**

PROPOSED PROJECT DATES: 03/01/2011 to 03/01/2012

PROJECT TYPE: **Dissertation**

PRINCIPAL INVESTIGATORS: **Jessica Vaughan**

COLLEGE/DIVISION: **College of Education & Psychology**

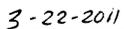
DEPARTMENT: **Clinical Psychology**

FUNDING AGENCY: **N/A**

HSPRC COMMITTEE ACTION: **Expedited Review Approval**

PERIOD OF APPROVAL: 03/21/2011 to 03/20/2012

  
\_\_\_\_\_  
Lawrence A. Hosman, Ph.D.  
HSPRC Chair

  
\_\_\_\_\_  
3-22-2011  
Date

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