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# The Five Factor Forgiveness Inventory: A Measure of Forgiveness from the Perspective of the Five Factor Model

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THE FIVE FACTOR FORGIVENESS INVENTORY: A MEASURE OF  
FORGIVENESS FROM THE PERSPECTIVE OF THE FIVE FACTOR MODEL

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DISSERTATION

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A dissertation submitted in partial fulfillment of the  
requirements for the degree of Doctor of Philosophy  
in the College of Arts and Sciences at the University of Kentucky

By  
Natalie Gail Glover

Lexington, Kentucky

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Lexington, Kentucky

2015

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## ABSTRACT OF DISSERTATION

### THE FIVE FACTOR FORGIVENESS INVENTORY: A MEASURE OF FORGIVENESS FROM THE PERSPECTIVE OF THE FIVE FACTOR MODEL

The purpose of this study was to develop and validate a five factor model (FFM) measure of forgiveness. Participants were 545 undergraduates currently enrolled in introductory and experimental psychology courses at the University of Kentucky (272 used for item construction, 273 for scale validation). Items were selected on the basis of convergent validity with five-factor model personality scales and forgiveness scales. Participants in the validation stage were administered the resulting Five Factor Forgiveness Inventory (FFFI), as well as the International Personality Item Pool-NEO (IPIP-NEO) and seven other existing forgiveness measures. Significant convergent validity was obtained for the vast majority of the seven FFFI subscales with their corresponding IPIP-NEO facet scales. Discriminant validity was good to excellent for all subscales, as well. FFFI subscales were all significantly correlated with the seven existing forgiveness measures, and the FFFI total score obtained significant incremental validity over all seven other forgiveness scales. Finally, multiple regression analyses revealed that FFFI scales accounted for additional variance in predicting results on existing forgiveness measures. The initial construction and validation of this measure provides a foundation for assessing forgiveness from the perspective of the FFM, thus providing a more comprehensive, nuanced understanding of the disposition to forgive.

Keywords: five factor model, forgiveness, personality, inventory, measure

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July 26, 2015

THE FIVE FACTOR FORGIVENESS INVENTORY: A MEASURE OF FORGIVENESS  
FROM THE PERSPECTIVE OF THE FIVE FACTOR MODEL

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This dissertation is dedicated to three individuals. The first is Tom Widiger, whose guidance, instruction, and patience served as the foundation for my growth as a psychologist-in-training, beginning when I was an undergraduate and persisting today. To him, I owe much of my appreciation for scientific rigor, as well as my capacity for sound research. The second is Bill Meegan, for his wisdom, support, and expertise as a clinical supervisor. To him, I owe much of my growth as a skilled and dedicated clinician. The third is Pat Sylvers, for his clinical training, mentorship, and inspiration. To him, I owe much of my professional development, most notably self-confidence in my prior knowledge, current competence, and potential for the future.

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## **Chapter One: Introduction**

The purpose of this study was to develop and validate a five factor model (FFM) measure of forgiveness. This report will present the rationale and process for the creation of an FFM measure of forgiveness. Specifically, it will begin with an introduction exploring the existing forgiveness literature, with an emphasis on the assessment of forgiveness, and the FFM itself. It will discuss the personological aspects of forgiveness with respect to the FFM, providing the rationale for the potential usefulness of a measure of forgiveness from the perspective of the FFM. It will also describe the method with which FFM facets were selected for the assessment of FFM forgiveness, as well as the method with which the Five Factor Forgiveness Inventory (FFFI) was developed. The study itself has obtained data for item selection, as well as the initial validation of the respective scales.

Existing research on the subject of forgiveness and personality, including a meta-analytic review (Glover, 2013), has shown that a significant component of forgiveness is secondary to personality traits. As a continuation of this research, it was thought useful to then develop a measure to assess forgiveness from this perspective, one which reflects the findings of the meta-analysis, as well as of other research involving the five factor model and forgiveness (e.g., Brose et al., 2005; Ross et al., 2004; Symington et al., 2002).

The body of forgiveness literature is widespread, intricate, and at times, difficult to integrate. Among the many different aspects of the construct that researchers discuss is its definition, as there is no current consensus on this matter. While this fact is generally recognized in the literature (Strelan & Covic, 2006; McCullough, Pargament, & Thoreson, 2000), most agree that it is characterized as an active response to a transgression,

which may include cognitive, emotional, and at times, behavioral reactions (Enright et al., 1996; Gordon & Baucom, 1998). While some note that the victim forgoes the right to be angry and resentful toward the transgressor (e.g., Enright, Freedman, & Rique, 1998; Fincham, 2000) and decides against revenge (Pingleton, 1989), others describe it as the victim's prosocial motivational change (McCullough, 2001). Others still differentiate between decisional forgiveness, which entails behavioral intentions to respond to the transgressor in a forgiving manner, and emotional forgiveness, which entails replacing negative emotions towards the transgressor with positive ones (Worthington et al., 2007). It is important to note that forgiveness need not necessitate the excusing, condoning, or forgetting of interpersonal transgressions (Rye et al., 2001), nor is reconciliation a requirement (though many consider it the ideal outcome; Enright & North, 1998). For the purpose of this study, forgiveness may be more precisely defined as a reaction to a transgression in which the victim is compassionately motivated to relinquish negative feelings against the transgressor and decides not to seek revenge. The FFFI assesses forgiveness as a dispositional tendency, focusing on the various traits that would dispose a person to be forgiving or unforgiving over time and across different situations.

There are a number of theoretical models from which forgiveness may be approached. Current models differ largely with respect to theoretical basis, explanatory vs. descriptive nature, and applications for research and practice (Kaminer, 2000). Types of models include, but are not limited to, typological (Veenstra, 1992), cognitive (Droll, 1984), psychoanalytic (Brandsma, 1982; Lapsley, 1966), Jungian (Todd, 1985), family systems (Hargrave, 1994), existential (Pattison, 1965), and object relations (Gartner, 1988; Pingleton, 1997; Vitz & Mango, 1997). While perspectives tend to differ on the

specific characteristics and chronology of forgiveness stages, as well as the criteria for forgiveness (Kaminer, 2000), similar themes across models include the presence (or absence) of anger and the time (usually months or years) it takes to forgive (Sells & Hargrave, 1998). There are more than two dozen process models of forgiveness (Strelan & Covic, 2006), but most are based upon philosophical and theological texts and/or the clinical and counseling experiences of the authors (Walker & Gorsuch, 2004). There is a need for more empirical validation and theory-driven development of process models (Strelan & Covic, 2006).

There is a considerable body of research on the importance of forgiveness for psychological functioning. The failure to forgive has been associated with depression and anxiety, as well as poor social support and coping ability (Maltby et al., 2001), while forgiving attitudes tend to precede decreased anxiety and depression (Spiers, 2004). Other factors studied in relation to forgiveness include aggression (Wilkowski et al., 2010), the transgressor's apology/repentance (Eaton & Struthers, 2006), empathy and attributions of blame (Tsang & Stanford, 2007), values (Berry et al., 2005), trauma (Al-Mabuk & Downs, 1996; Walton, 2005), marital quality (Fincham & Beach, 2007) extramarital involvement (Gordon et al., 2009), eating disorders (Watson et al., 2012), post-traumatic stress disorder (Snyder & Heinze, 2005), alcoholism (Ianni et al., 2010; Scherer et al., 2011; Webb & Toussaint, 2011), stress (Green et al., 2012), and a variety of physiological and medical issues (Lawler et al., 2005, Witvliet et al., 2001). Research also indicates that forgiveness may lead to decreased rumination and increased life satisfaction (Chi et al., 2011), as well as to greater general psychological well-being.

## The Assessment of Forgiveness

There are over a dozen inventories designed to measure forgiveness that researchers have developed over the past three decades (McCullough, Hoyt, & Rachal, 2000). Table 1 provides a list of 13 illustrative measures. There are several different approaches with which to assess forgiveness. McCullough et al. (2000) identified three dimensions along which existent measures of forgiveness may be distinguished. The first is the level of specificity with which forgiveness is measured. Measures may be (1) situational/offense-specific (pertaining to a specific transgressor for a specific transgression; e.g., Transgression-Related Interpersonal Motivations Inventory; McCullough et al., 1998), (2) dispositional (assessing for a generally forgiving disposition; e.g., Mauger Forgiveness Scales; Mauger, 1992), or (3) present hypothetical vignettes asking the participant how likely he/or she would be to forgive in a respective situation (e.g., The Forgiveness Likelihood Scale; Rye et al., 2001).

The second dimension is the direction of measurement. Scales could be focused on either the provision of forgiveness, or the receiving of forgiveness. Most forgiveness inventories measure the granting, as opposed to the receiving, of forgiveness. An additional distinction is whether the instrument focuses on forgiving, or not forgiving. “Current theoretical accounts of the process of forgiveness,” state Cairns and colleagues in Worthington’s 1998 *Handbook of Forgiveness*, “indicated that the concepts of revenge and forgiveness are, implicitly or explicitly, placed at the opposite poles of a single dimension (see Enright et al., 1998; McCullough, Worthington, & Rachal, 1997)” (p. 471). Being revengeful is clearly not being forgiving. Therefore, some researchers have considered items assessing revenge to be interpretable as reverse-keyed items for

assessing an individual's propensity to forgive (Sastre et al., 2005). However, Cairns et al. do not themselves support this position. Being revengeful is not being forgiving but not being revengeful is not necessarily being forgiving. It is of note that the proposed Hardhearted Blame scale of the FFFI is comparable to a revenge instrument.

The third basis for distinguishing among measures is the method of measurement, such as self versus informant reports (McCullough et al., 2000). With regard to situational forgiveness, for example, the wronged individual could report the extent to which he/she has forgiven the transgressor, or an outside observer could assess the extent to which the individual had done so. Other forgiveness-related measures include those that place more of an emphasis on the relationship between the transgressor and the victim (e.g., Interpersonal Relationship Resolution Scale; Hargrave & Sells, 1997), as well as those that assess an individual's beliefs about the nature of forgiveness, as opposed to his/her actual tendencies toward forgiveness (e.g., Conceptualizations of Forgiveness Questionnaire; Mullet et al., 2004).

The most popular type of forgiveness measure does appear to be the self-report measure of situational, interpersonal forgiveness (McCullough, Hoyt & Rachal 2000). McCullough et al. also point out that "there are currently few measures for assessing other dimensions of forgiveness" (p. 49), such as the dispositional, dyadic, or purely behavioral levels.

The current study included seven alternative measures of forgiveness. Those chosen for inclusion in this study were mostly those that assess dispositional, or trait forgiveness, but there are a few that assessed situational forgiveness or beliefs about the nature of forgiveness. These inventories were selected with respect to their popularity

within the literature, as well as their relative emphasis on a dispositional-trait approach to the conceptualization and assessment of forgiveness (McCullough et al., 2000). All of the instruments are relatively brief, ranging in item length from 4 to 33.

### **The Five Factor Model of Personality**

The FFM (Costa & McCrae, 1990) is a comprehensive, robust model of personality traits that was developed originally from a lexical perspective. The relative importance of a trait can be determined by the number of terms within a language that characterize that trait, and the manner in which the trait terms covary can provide a potential structure of personality. The five FFM domains consist of neuroticism (negative affectivity or emotional instability), extraversion (positive affectivity or surgency), openness (unconventionality or intellect), agreeableness (the opposite of antagonism), and conscientiousness (or constraint).

While the FFM was originally developed from the English language, subsequent lexical studies have been performed on various other languages (e.g., Czech, Dutch, Filipino, German, Hebrew, Hungarian, Italian, Korean, Polish, Russian, Spanish, & Turkish), and this research has served to establish a firm basis for the existence of the five FFM domains across cultures (John, Naumann, & Soto, 2008). To further differentiate the five domains, Costa and McCrae (1995) ascribed six underlying facets to each one via their development of and research with the NEO Personality Inventory-Revised (NEO PI-R; Costa & McCrae, 1992). For example, the facets of neuroticism are anxiousness, angry-hostility, depressiveness, self-consciousness, impulsivity, and vulnerability.

There is substantial empirical support for the construct validity of the FFM, including childhood antecedents (Caspi, Roberts, & Shiner, 2005; Mervielde et al., 2005), temporal stability across the life span (Roberts & Del Vecchio, 2000), multivariate behavior genetics (Yamagata et al., 2006), and both emic (John et al., 2008) and etic (Allik, 2005; McCrae et al., 2005) cross-cultural support. The FFM has also been useful in predicting a number of important positive and negative life outcomes, such as social acceptance, relationship conflict, criminality, unemployment, physical health, occupational satisfaction, mortality, and subjective well-being (John et al., 2008; Lahey, 2009; Ozer & Benet-Martinez, 2006).

“Personality psychology has been long beset by a chaotic plethora of personality constructs that sometimes differ in label while measuring nearly the same thing, and sometimes have the same label while measuring very different things” (Funder, 2001, p. 2000). This issue perhaps also rings true for the personality constructs examined within the forgiveness literature. Both scientific and clinical domains would benefit from a more concise characterization of forgiveness, given the various models, constructs, and definitional nuances associated with it. There is ample support that the FFM is an ideal tool with which to integrate trait literature, as “it can capture, at a broad level of abstraction, the commonalities among most of the existing systems of personality traits, thus providing an integrative, descriptive model” (John et al., 2008, p. 139.) Research has shown that it can reasonably capture the personality trait constructs included within alternative models of personality, both normal and abnormal (Clark, 2007). O’Connor (2002) conducted interbattery factor analyses with previously published correlations among FFM variables and 28 existing normal and abnormal personality measures. He



concluded that the data derived from these correlations with the FFM were very similar to the factor structures in the existing inventories, and stated that “the basic dimensions that exist in other personality inventories can thus be considered ‘well captured’ by the FFM” (p. 198). Goldberg (1993) and Ozer and Reise (1994), in fact, described the FFM as analogous to a Cartesian map of the world—each domain and its respective facets may, like coordinates, pinpoint the precise location of trait constructs within a single, common hierarchical model. Indeed, researchers have often utilized the FFM to organize and structure diverse sets of personality trait research. Some examples include Feingold (1994) with respect to gender differences and personality, Roberts and Del Vecchio (2000) for the research concerning the stability of personality over time, Shiner and Caspi (2003) reviewing research concerning temperament, Segerstrom (2000) for research on personality and health psychology, and Weinstein, Capitano, and Gosling (2008) for research concerning intra- and inter- species animal behavior.

There are a few studies that pertain explicitly to forgiveness and FFM traits. Some of these (e.g., Brose et al., 2005; Butzen et al., 2008; Ross et al., 2004) utilized the NEO PI-R and existing forgiveness measures in order to identify which personality traits were most commonly-associated with forgiveness. Brose et al. (2005) and Butzen et al. (2008) both found these traits to be mainly located within the domains of neuroticism and agreeableness. Ross et al. (2004) similarly reported strong correlations with agreeableness facets, as well as the angry hostility facet of neuroticism. Other studies (e.g., Ashton et al., 1998; Symington et al., 2002; Walker & Gorsuch, 2002) used similar methods with the International Personality Item Pool (Goldberg, 1999) and/or Saucier’s Big Five Mini-Markers, and also found the most significant correlations within the

domains of neuroticism (Ashton et al., 1998; Walker & Gorsuch, 2002) and agreeableness (Symington et al., 2002).

Mullet, Neto, and Riviere (2005) conducted a qualitative review of the personality trait and forgiveness research from the perspective of the FFM. They went beyond simply the studies that used explicitly a measure of the FFM (e.g., NEO PI-R or IPIP) by classifying other trait scales in terms of the FFM, consistent with the recommendations of Goldberg (1993) and Ozer and Reise (1994), and in comparable reviews by John et al. (2008) and Roberts and Del Vecchio (2000). This allowed them to integrate a much broader set of trait research, reviewing data from 27 different studies. They concluded that the primary domains of importance were agreeableness and neuroticism, as they displayed the strongest correlations with forgiveness of others (positive and negative, respectively).

However, a potential limitation of the review by Mullet et al. (2005) was that they did not conduct a quantitative meta-analytic integration of the research findings. In addition, some of their scale assignments were perhaps questionable. For example, measures of psychoticism (including schizophrenia) from two studies (Mauger et al., 1992; Maltby et al., 2001), were categorized by Mullet and colleagues under neuroticism, and schizophrenia is clearly not considered to be an FFM personality trait (Costa & McCrae, 1992).

Glover (2013) replicated and extended the meta-analysis of Mullet et al. (2005). Glover (2013) similarly identified existing personality constructs that correlate with forgiveness, and classified these constructs in terms of FFM domains and facets. The meta-analysis included 12 studies in common with Mullet et al., as well as 31 additional

studies not included by Mullet et al. (24 published during 2005 or since, and seven published prior to 2005). The results of this meta-analysis suggested that the primary traits were indeed from neuroticism and agreeableness; more specifically, angry hostility, anxiousness, depressiveness, and vulnerability from the domain of neuroticism, and altruism, straightforwardness, and tender-mindedness from the domain of agreeableness.

These findings are perhaps readily understood. Persons high in neuroticism are characterized by their “susceptibility to psychological distress” (Costa & McCrae, 1992, p. 14), typically through a demonstration of negative affect. It is perhaps understandable how an individual who is disposed to feelings of angry hostility, anxiousness, depressiveness, and vulnerability might maintain negative feelings about slights and transgressions from others, worrying and grudge-holding more so than the average individual. Persons who are characteristically angry and hostile will naturally be prone to be unforgiving. It is within their disposition to remain bitter and resentful (Costa & McCrae, 1992). Persons who are characteristically anxious will ruminate, worry, or fret about a transgression. Persons who are characteristically depressive will have difficulty overcoming their feelings of despondency, hurt, and sadness in response to the transgression. For persons who feel characteristically vulnerable and exposed, it would follow that such individuals would have difficulty “letting go” after being wronged.

The agreeable individual is characterized as “fundamentally altruistic...sympathetic to others and eager to help them, and believes that others will be equally helpful in return” (Costa & McCrae, 1992, p. 15). Conversely, a person low in agreeableness is said to be egocentric, oppositional, accusatory, and mistrustful of the intentions of others. Agreeableness is then, understandably, the other FFM domain with

the strongest relationship to forgiveness. Agreeable persons are prone to see the good in others, to value getting along, and to avoid conflict (Graziano & Tobin, 2009). Tender-minded persons would be naturally quicker to forgive, being disposed to feelings of empathy, even to a transgressor. Such a disposition would be comparable in persons high in altruism, willing to take the perspective of the other person, sacrificing their own needs and perhaps even safety for the sake of the relationship. In contrast, antagonistic persons will be naturally unforgiving. They will even initiate conflict, and will certainly be among the last to turn the other cheek. Tough-minded persons would likely maintain a hard-hearted coldness toward the transgressor, finding it very difficult to forgive a transgression.

### **Development of a Five Factor Forgiveness Inventory**

The purpose of the current study was to develop and provide initial validation for an FFM measure of forgiveness. To the extent that the disposition to forgive, or not to forgive, can be understood, at least in part, as an expression of an FFM personality trait, it would naturally follow that it might be useful to develop a measure of forgiveness from the perspective of the FFM. One advantage of this approach is that the assessment of forgiveness would be more readily understood from the perspective of the FFM, thereby bringing into the forgiveness literature all that is known about the etiology, course, and correlates of FFM personality traits. In addition, one might be able to develop forgiveness scales that are relatively specific to particular FFM facets, such as angry hostility, altruism, and/or tough-mindedness, thereby providing a more specific, nuanced understanding of the disposition to forgive.

The FFM facets selected on the basis of the Glover (2013) meta-analysis were: anxiousness, depressiveness, angry hostility, and vulnerability (from neuroticism), and altruism, tender-mindedness, and tough-mindedness (from agreeableness). Separate scales for tender-mindedness and tough-mindedness were developed in order to be able to better understand whether the disposition reflects primarily a tender-minded willingness to forgive or, conversely, a tough-minded disinclination to forgive. With separate scales, one can consider the complementary dispositions independently. For the Glover (2013) results regarding FFM facets and the forgiveness of others, see Table 2.

**Transgression Anxiousness (NEO PI-R Anxiousness).** This subscale represents the extent to which the victim ruminates, worries, or feels anxious about a transgression against him or her. This anxiety makes it difficult for the individual to “let go” of the slight or perceived slight and forgive the offender.

**Transgression Depressiveness (NEO PI-R Depressiveness).** This subscale assesses the victim’s tendency to feel sad, despondent, and/or hopeless with respect to a transgression. This depressiveness also makes it difficult for the individual to move on past the offense and may also give him/her a more negative outlook on the status of the relationship, further hindering forgiveness.

**Hostile Resentment (NEO PI-R Angry Hostility).** This subscale represents the victim’s level of anger, hostility, or rage toward the transgressor, hindering forgiveness and possibly (but not necessarily) leading to the victim to seek revenge.

**Transgression Sensitivity (NEO PI-R Vulnerability).** This subscale represents the victim’s sensitivity to the actions of others, that is, his or her tendency to have hurt feelings or to interpret the actions of others as slights or attacks. This may also represent

the victim's difficulty in regulating negative emotions with regard to the transgression. This vulnerability makes it difficult to forgive.

**Reactive Compassion (NEO PI-R Altruism).** This subscale assesses the victim's level of compassion toward the offender, which entails concern for the transgressor's well-being, with an emphasis on behavioral responses that indicate forgiveness, and possibly reconciliation.

**Softhearted Mercy (NEO PI-R Tender-Mindedness).** This subscale assesses the victim's level of sympathy or empathy for the transgressor, with an emphasis on merciful emotions that facilitate a cognitive or decisional form of forgiveness.

**Hardhearted Blame (Tough-Mindedness, or NEO PI-R low Tendermindedness).** This subscale, while assessing the opposite of softhearted mercy, will not necessarily yield mutually exclusive data. It represents the extent to which the victim feels a resolute sense of callousness or lack of empathy toward the transgressor, making it difficult or impossible to forgive.

Thirty potential items were written for each respective FFFI scale. The initial item pool for the FFFI therefore consisted of 210 items, answered on a 5-point scale ranging from *strongly disagree* (rated 1) to *strongly agree* (rated 5). Items were written using a rational approach for item construction (Clark & Watson, 1995), informed in part by inspection of the items from existing forgiveness scales. For example, a proposed item for the FFFI's Transgression Anxiety subscale was "When I feel hurt by someone, I am consumed with thoughts of how unfair it was." A similar item from an existing forgiveness scale is "I can't stop thinking about how I was wronged by this person." (The Forgiveness Scale; Rye et al., 2001). An item proposed for the FFFI's Resentment

subscale was “When someone offends me, I am angry about it for a long time.” A similar item from an existing scale is “I have a tendency to harbor grudges.” (Tendency to Forgive Scale; Brown, 2003). An item proposed for the FFFI’s Hardhearted Blame subscale was “It gives me pleasure to see someone hurt after they have hurt me.” A similar item is “I wish that something bad would happen to him/her.” (Transgression-Related Interpersonal Motivations Inventory; McCullough et al., 1998). An item proposed for the FFFI’s Reactive Compassion subscale was “I try to be forgiving because everyone deserves a second chance,” similar to “I have compassion for the person who wronged me.” (The Forgiveness Scale; Rye et al., 2001).

Data from the first half of the participant sample was used to correlate each potential FFFI item with its respective NEO PI-R facet scale and the seven measures of forgiveness. A criterion-keying approach was used for the final item selection and scale construction (Clark & Watson, 1995; Garb, Woods, & Fiedler, 2011). Ten items were selected for the final version of each scale on the basis of obtaining the relatively highest correlations across all measures, yet also avoiding explicitly redundant items.

## **Hypotheses**

When the seven FFFI scales have been constructed, the second half of the data collection was used to test their validity.

It was hypothesized that each of the seven FFFI scales would obtain good internal consistency (Cronbach’s alpha values at or above .75; Smith, McCarthy, & Anderson, 2000). It was further predicted that each would correlate with its respective NEO PI-R facet scale, as well as with existing forgiveness measures. For example, the Transgression Anxiety scale was expected to correlate with NEO PI-R Anxiousness and negatively with

all seven measures of forgiveness. The FFFI neuroticism-based scales were also expected to correlate with other facet scales from the domain of neuroticism, but not as highly as they did with their “parent” or complementary neuroticism facet scale. It was also expected that they would correlate, on average, weakly with NEO PI-R facet scales from other domains. Comparable results were expected for the FFFI agreeableness-based scales.

It was expected that each of the traditional forgiveness scales would correlate with NEO PI-R Neuroticism and Agreeableness facet scales, consistent with the meta-analysis of Glover (2013) and prior research (Brose et al., 2005; Butzen et al., 2008; Ross et al., 2004). However, it was predicted that each of the FFFI subscales will correlate more highly with a respective NEO PI-R facet scale than would any one of the respective traditional forgiveness scales. For example, it was predicted that FFFI Transgression Anxiousness would correlate more highly with NEO PI-R Anxiousness than would any one of the traditional forgiveness measures. The Forgiveness Likelihood Scale (Rye et al., 2001) is associated with NEO PI-R anxiousness (Brose et al., 2005; 2008; Ross et al., 2004) but it was predicted that FFFI Transgression Anxiousness would correlate more highly because it would provide a more homogeneous, pure measure of anxiousness-based forgiveness.

There was no expectation that the FFFI subscales or even the sum of the seven subscales would obtain incremental validity over an existing measure of forgiveness. The decision to forgive persons may not be solely or totally the result of a trait disposition, and it is not suggested that all of the variance attributed to forgiveness can be explained in terms of FFM traits.



## **Chapter Two: Methods**

### **Participants**

Participants were 650 undergraduates currently enrolled in introductory and experimental psychology courses at the University of Kentucky. The results for 52 participants were excluded due to failing to complete a substantial portion of the items. Estimated values were obtained for blank items scattered throughout the dataset. Fifty-three participants were also excluded due to elevated responses on the validity scale, leaving a final sample of 545 participants, which was then split in half (272 for item construction, 273 for scale validation).

The cross-validation sample of 273 undergraduates was 70% female and 30% male with a mean age of 19.4 (SD=2.96). Ninety-eight percent were single. Missing data were computed using the expectation maximization (EM) procedure, which has been shown to produce more accurate estimates of population parameters than other methods, such as mean substitution or deletion of missing cases (Enders, 2006).

### **Measures**

**Demographic Questionnaire.** The demographic questionnaire asked participants about their gender, age, and whether they have received mental health treatment.

**International Personality Item Pool-NEO (IPIP-NEO;** Goldberg et al., 2006). The IPIP-NEO is a self-report personality inventory modeled after and coordinated with the NEO-PI R (Costa & McCrae, 1992). The IPIP-NEO consists of 300 items (e.g., “Complete tasks successfully” for conscientiousness) that can be completed in 45 minutes. Participants are asked to rate how accurate the items are for describing

themselves as they are now and in comparison to others their age. Items are rated on a 5-point Likert-type scale, with response options of 1 = *strongly disagree*, 2 = *disagree*, 3 = *neutral*, 4 = *agree*, and 5 = *strongly agree*. Previous research has demonstrated good internal consistency and convergent validity (Goldberg et al., 2006). For Sample 1, Cronbach's alpha for neuroticism = .92, extraversion = .88, openness = .87, agreeableness = .88, and conscientiousness = .91.

**Five Factor Forgiveness Inventory (FFNI; Glover, 2013).** The initial administration of this measure served, for half of the sample, to identify items that performed best out of the initial pool of 180 draft items (six subscales, 30 items per subscale). The remaining half of the sample was used to validate said items, all assessing forgiveness from the perspective of the five factor model. The FFFI used a five-point Likert scale (ranging from “strongly disagree,” to “strongly agree”).

**The Forgiving Personality Scale (FP; Kamat et al., 2006).** This scale consists of 33 items assessing dispositional forgiveness. It uses a five-point Likert scale (ranging from “strongly disagree” to “strongly agree”). A sample item from this measure is “I have genuinely forgiven people who have wronged me in the past.” The FP has yielded substantial concurrent validity with alternative measures of trait forgiveness and to related constructs.

**The Forgiveness Scale (FS; Rye et al., 2001).** This scale consists of fifteen items measuring forgiveness of others. It uses a five-point Likert scale (ranging from “strongly agree” to “strongly disagree”). A sample item from this scale is “I have been able to let go of my anger toward the person who wronged me.” Test-retest reliability has been reported at .80, with a Cronbach's alpha of .87 (Rye et al., 2001). Of note, this scale

includes two subscales, Absence of Negative and Presence of Positive, with regard to the victim's emotions toward the offender. For the purposes of this project, however, no differentiation was made between these two subscales in data analysis.

**The Forgiveness Likelihood Scale** (Rye et al., 1998). This scale consists of ten items measuring the likelihood of forgiving another person in a given situation. It uses a five-point Likert scale (ranging from “extremely likely” to “not at all likely”). A sample item from this scale is “One of your friends starts a nasty rumor about you that is not true. As a result, people begin treating you worse than they have in the past. What is the likelihood that you would choose to forgive your friend?” Test-retest reliability has been reported at .81, with a Cronbach's alpha of .85 (Rye et al., 2001).

**Heartland Forgiveness Scale** (HFS; Edwards et al., 2002). This scale consists of three 6-item subscales, measuring other, self, and “situational forgiveness.” For this study, only the subscale for forgiveness of self was used. The scale uses a seven-point Likert scale (ranging from “almost always false for me” to “almost always true for me”). A sample item for other-forgiveness is, “When someone disappoints me, I can eventually move past it.” Test-retest reliability has shown to be .82, with Cronbach's alphas ranging between .84 and .87 for the total scale score (Edwards et al., 2002).

**Mauger Forgiveness Scale** (Mauger, 1992). This scale contains two 15-item, true-false subscales, for other and self-forgiveness. For this scale, only the former will be used. A sample item from the Forgiveness of Others subscale (FOO) is “I am able to make up pretty easily with friends who have hurt me in some way.” Test-retest reliability has been reported at .94, with a Cronbach's alpha of .79 (Mauger et al., 1992). The

Forgiveness of Others subscale has a reported Cronbach's alpha of .78 (Leach & Lark, 2004).

**Trait Forgivingness Scale (TFS;** Berry, Worthington, O'Connor, Parrott, Wade, 2005). This scale is a 10-item measure of trait forgiveness, using a five-point Likert scale (ranging from "strongly disagree" to "strongly agree"). A sample item from the TFS is "If someone treats me badly, I treat him or her the same." Cronbach's alphas have ranged from .74 to .80 (Berry, et al., 2005; Hodgson & Wortheim, 2007).

**Tendency to Forgive Scale (TTF;** Brown, 2003). This four-item scale assesses individual differences in the tendency to forgive others. It uses a seven-point Likert scale (ranging from "strongly disagree" to "strongly agree"), and a sample item is "When people wrong me, my approach is just to forgive and forget." Cronbach's alphas for this measure have ranged from .70 to .79 (Allemand et al., 2008; Brown, 2003; Brown & Phillips, 2005; Hill & Allemand, 2010; Steiner et al., 2012; Ysseldyk et al., 2006).

**Validity Scale.** Data collection also included a validity scale to detect careless and random responding. The scale consisted of five items: 1) I have used a computer in the past two years (reverse keyed), 2) I have never attended college, 3) I do not own more than one book, 4) I have never made anything above a failing grade in any of my courses, and 5) I am currently in the Guinness Book of World Records. Validity items were answered on the same 5-point Likert scale as the other items, and participants with less than perfect scores were excluded from the dataset.

## **Procedure**

The students received research credit for their participation. All measures were administered via SurveyMonkey, a secure online questionnaire-building service. Given

the online format, individuals indicated their informed consent by choosing the *agree* option; individuals who, given the informed consent document, chose the *disagree* option were automatically exited from the study. Upon completion they received a printable debriefing document. The order in which the materials were administered was the same for all participants. Completion of all materials required two to three hours if completed at one sitting. However, an advantage of the on-line participation was that participants were free to take as much time as they wished to complete the materials and, equally important, to temporarily stop participation at any time in which they felt fatigued or distracted, resuming the completion of the materials at a later date.

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## Chapter Three: Results

Table 1 provides descriptive statistics for the scales completed in this study. Cronbach's alpha was acceptable to good for all scales. Among the highest Cronbach's alpha values were those of the FFFI subscales of Transgression Sensitivity, Hostile Resentment, and Hardhearted Blame, as well as IPIP-NEO Anger and Depression, the Trait Forgiveness Scale, and the Forgiveness Likelihood Scale.

Table 1. Means, standard deviations, and Cronbach's Alphas for all study scales.

| Scale                             | Mean   | SD    | Cronbach's alpha |
|-----------------------------------|--------|-------|------------------|
| FFFI Transgression Anxiety        | 23.00  | 5.34  | .76              |
| FFFI Transgression Depressiveness | 21.00  | 5.97  | .83              |
| FFFI Hostile Resentment           | 20.18  | 6.58  | .88              |
| FFFI Transgression Sensitivity    | 20.33  | 5.92  | .85              |
| FFFI Reactive Compassion          | 29.13  | 5.35  | .84              |
| FFFI Softhearted Mercy            | 26.75  | 5.40  | .83              |
| FFFI Hardhearted Blame            | 18.63  | 6.45  | .90              |
| IPIP Anxiety                      | 30.99  | 6.16  | .78              |
| IPIP Anger                        | 28.23  | 6.66  | .85              |
| IPIP Depression                   | 25.21  | 6.88  | .86              |
| IPIP Vulnerability                | 28.34  | 6.22  | .81              |
| IPIP Altruism                     | 38.58  | 5.47  | .84              |
| IPIP Sympathy                     | 34.52  | 4.95  | .69              |
| Mauger                            | 22.96  | 2.58  | .58              |
| TFS                               | 34.82  | 6.97  | .85              |
| TTF                               | 16.93  | 4.51  | .67              |
| FP                                | 121.33 | 21.09 | .95              |
| FS                                | 50.39  | 8.67  | .85              |
| FLS                               | 27.88  | 8.01  | .89              |
| HFS                               | 33.90  | 6.89  | .84              |

Note: FFFI= Five-Factor Forgiveness Inventory; IPIP= International Personality Item Pool (Goldberg, 1999); Mauger= Mauger Forgiveness Scales: Forgiveness of Others (Mauger, 1992); TFS= Trait Forgiveness Scale (Berry et al., 2005); TTF= Tendency to Forgive Scale (Brown, 2003); FP= The Forgiving Personality Scale (Kamat et al., 2006); FS= The Forgiveness Scale (Rye et al., 2001); FLS= The Forgiveness Likelihood Scale (Rye et al., 2001); HFS= Heartland Forgiveness Scale (Thompson et al., 2005).

### **Convergent and Discriminant Validity of FFFI Subscales**

Table 2 provides correlations of the FFFI subscales with each other. It is to be expected that there would be weak to nonexistent correlations across different domains of

the FFM, whereas correlations would be high for scales within the same domain. Significant convergent validity was obtained for the vast majority of FFFI subscales, ranging from -.21 for Transgression Anxiety and Softhearted Mercy to .78 for Transgression Anxiety and Transgression Depressiveness. The two nonsignificant correlations were between Transgression Depressiveness and Softhearted Mercy, as well as Transgression Sensitivity and Softhearted Mercy. Though most correlations were statistically significant, relatively weaker correlations were found between pairs of subscales in which one was from the neuroticism domain and the other was from the domain of agreeableness.

Table 2. *Convergent and discriminant validity of FFFI subscales.*

FFFI Ssubscales

|    | Transgression Anxiety | Hostile Resentment | Transgression Depressiveness | Transgression Sensitivity | Reactive Compassion | Softhearted Mercy |
|----|-----------------------|--------------------|------------------------------|---------------------------|---------------------|-------------------|
| HR | .60**                 |                    |                              |                           |                     |                   |
| TD | .78**                 | .57**              |                              |                           |                     |                   |
| TS | .66**                 | .54**              | .73**                        |                           |                     |                   |
| RC | -.23**                | -.48**             | -.17**                       | -.15*                     |                     |                   |
| SM | -.21**                | -.42**             | -.09                         | -.03                      | .74**               |                   |
| HB | .34**                 | .61**              | .31**                        | .39**                     | -.48**              | -.46**            |

\*p <.05. \*\*p <.01.

Note: FFFI= Five-Factor Forgiveness Inventory; HR=Hostile Resentment; TD=Transgression Depressiveness; TS=Transgression Sensitivity; RC= Reactive Compassion; SM= Softhearted Mercy; HB= Hardhearted Blame

### Convergent and Discriminant Validity with IPIP-NEO Facet Scales

Table 3 provides correlations of the FFFI subscales with their corresponding IPIP-NEO facet scales (e.g., FFFI Transgression Anxiety correlated with IPIP-NEO Anxiety). Significant convergent validity was obtained for all seven FFFI subscales with their respective IPIP-NEO facet scales, ranging in value from .45 for Transgression Anxiety

with IPIP-NEO Anxiousness to .54 for Hostile Resentment with IPIP-NEO Anger and .54 for Reactive Compassion with IPIP-NEO Altruism.

The second row provides both convergent and discriminant validity results for the relationship of the seven FFFI subscales with the other IPIP-NEO facet scales within the same domain. Scales are expected to correlate with other facets within the same domain but not as highly as with the parent facet. For example, the FFFI subscale Reactive Compassion correlated on average only .33 with the other five facet scales within the neuroticism domain, which was considerably lower than its correlation of .54 with IPIP-NEO Altruism. The third row provides the averaged correlations with the 24 IPIP-NEO facet scales outside of the domain (absolute values were used for these averages). No significant correlations should be obtained with the facets outside of the domain. Consistent with expectations, these correlations were quite low, and were consistently lower than the averaged correlation within each domain. In sum, it is evident from Table 2 that good to excellent discriminant (as well as convergent) validity was obtained for all of the FFFI subscales.

Table 3. *Convergent and discriminant validity of the FFFI<sup>a</sup> scales with a measure of general personality.*

|                         | FFFI <sup>a</sup> Subscales             |                         |                               |                                |                          |                        |                        |
|-------------------------|---|-------------------------|-------------------------------|--------------------------------|--------------------------|------------------------|------------------------|
|                         | Transgression Anxiety (N1) <sup>b</sup> | Hostile Resentment (N2) | Transgression Depression (N3) | Transgression Sensitivity (N6) | Reactive Compassion (A3) | Softhearted Mercy (A6) | Hardhearted Blame (A6) |
| IPIP facet              | .45**                                   | .54**                   | .51**                         | .49**                          | .54**                    | .51**                  | -.50**                 |
| Disc Same <sup>c</sup>  | .40                                     | .23                     | .38                           | .36                            | .33                      | .25                    | -.30                   |
| Disc Other <sup>d</sup> | .11                                     | .16                     | .13                           | .14                            | .16                      | .12                    | .19                    |

\*\*p <.01 \*p <.05

Note: <sup>a</sup>Five Factor Forgiveness Inventory; <sup>b</sup>Corresponding IPIP facet for each FFFI subscale; N1= Anxiety, N2= Anger, N3= Depression, N6=Vulnerability, A3= Altruism, A6= Sympathy; <sup>c</sup>Discriminant validity for an FFFI subscale: the average correlation of non-corresponding IPIP facets within the same domain; <sup>d</sup>Discriminant validity for an FFFI subscale: the absolute value of the average correlation of non-corresponding IPIP facets among other domains.



### Convergent Validity Among Forgiveness Measures

provides the correlations of the seven forgiveness measures with each other. All of them correlated significantly with one another, the strongest among them being the correlations of the Trait Forgiveness Scale with the Forgiving Personality Scale (.81), as well as the Heartland Forgiveness Scale with the Forgiving Personality Scale (.78). Though all correlations were statistically significant, markedly weaker correlations were found between the Forgiveness Likelihood Scale and the Mauger Forgiveness of Others Scale (only .26), as well as between the Heartland Forgiveness Scale and the Mauger Forgiveness of Others Scale (only .34).

Table 4. *Convergent validity of measures of forgiveness.*

| Forgiveness Measures | Mauger | TFS   | TTF   | FP    | FS    | FLS   |
|----------------------|--------|-------|-------|-------|-------|-------|
| TFS                  | .48**  |       |       |       |       |       |
| TTF                  | .40**  | .70** |       |       |       |       |
| FP                   | .42**  | .81** | .59** |       |       |       |
| FS                   | .37**  | .68** | .57** | .72** |       |       |
| FLS                  | .26**  | .59** | .44** | .49** | .48** |       |
| HFS                  | .34**  | .68** | .50** | .78** | .72** | .49** |

\*\*p <.01

Note: Mauger= Mauger Forgiveness Scales: Forgiveness of Others (Mauger, 1992); TFS= Trait Forgiveness Scale (Berry et al., 2005); TTF= Tendency to Forgive Scale (Brown, 2003); FP= The Forgiving Personality Scale (Kamat et al., 2006); FS= The Forgiveness Scale (Rye et al., 2001); FLS= The Forgiveness Likelihood Scale (Rye et al., 2001); HFS= Heartland Forgiveness Scale (Thompson et al., 2005).

### Convergent and Discriminant Validity with Forgiveness Subscales

Table 5 provides the correlations of the seven FFFI subscales with the seven forgiveness scales (as well as with the total FFFI score). Consistent with the generally strong convergent validity coefficients among the seven forgiveness scales, the FFFI

subscales obtained generally strong correlations with these scales. All of them were statistically significant, and among the highest correlations were the Hostile Resentment subscale with the Trait Forgiveness Scale (-.69), the Reactive Compassion subscale with the Forgiving Personality Scale (.68), and the Hardhearted Blame subscale with the Forgiving Personality Scale (-.69). Among the lowest correlations were for the Transgression Depressiveness and Transgression Sensitivity subscales with the Mauger Forgiveness of Others scale (-.22 and -.21, respectively).

The average correlations across subscales were strongest with the Trait Forgiveness Scale (.56) and the Forgiving Personality Scale (.56), while the weakest were with the Mauger Forgiveness of Others Scale (.33) and the Forgiveness Likelihood Scale (.31). The FFFI subscales to obtain the highest averaged correlation with all seven forgiveness measures were Hostile Resentment and Reactive Compassion; the lowest were obtained by Transgression Depressiveness and Transgression Sensitivity.

Table 5. *Convergent validity of the FFFI subscales with measures of forgiveness*

| Other Measures | FFFI Subscales |          |         |           |           |           |           | FFFI  | Measure Means |
|----------------|----------------|----------|---------|-----------|-----------|-----------|-----------|-------|---------------|
|                | TransAnx       | TransDep | HostRes | TransSens | ReactComp | SoftMercy | HardBlame |       |               |
| Mauger         | -.30**         | -.22**   | -.47**  | -.21**    | .37**     | .37**     | -.39**    | .47** | .33           |
| TFS            | -.50**         | -.43**   | -.69**  | -.42**    | .71**     | .61**     | -.59**    | .79** | .56           |
| TTF            | -.57**         | -.47**   | -.61**  | -.44**    | .51**     | .48**     | -.43**    | .70** | .50           |
| FP             | -.43**         | -.42**   | -.67**  | -.44**    | .68**     | .58**     | -.69**    | .78** | .56           |
| FS             | -.46**         | -.44**   | -.54**  | -.46**    | .52**     | .42**     | -.49**    | .66** | .48           |
| FLS            | -.24**         | -.16**   | -.38**  | -.17**    | .47**     | .44**     | -.32**    | .43** | .31           |
| HFS            | -.43**         | -.42**   | -.57**  | -.47**    | .54**     | .45**     | -.58**    | .69** | .49           |
| FFFI means     | .42            | .37      | .56     | .37       | .54       | .48       | .50       | .65   |               |

\*p <.05. \*\*p <.01.

Note: FFFI= Five-Factor Forgiveness Inventory; TransAnx= Transgression Anxiousness; TransDep= Transgression Depressiveness; HostRes= Hostile Resentment; TransSense= Transgression Sensitivity; ReactComp= Reactive Compassion; SoftMercy= Softhearted Mercy; HardBlame= Hardhearted Blame; Mauger= Mauger Forgiveness Scales: Forgiveness of Others (Mauger, 1992); TFS= Trait Forgiveness

Table 5. (continued)

Scale (Berry et al., 2005); TTF= Tendency to Forgive Scale (Brown, 2003); FP= The Forgiving Personality Scale (Kamat et al., 2006); FS= The Forgiveness Scale (Rye et al., 2001); FLS= The Forgiveness Likelihood Scale (Rye et al., 2001); HFS= Heartland Forgiveness Scale (Thompson et al., 2005). FFFI means = absolute value mean correlations of FFFI subscales with existing forgiveness measures, across FFFI subscales; Measure means = absolute value mean correlations of FFFI subscales with existing forgiveness measures, across forgiveness measures.

### **Convergence of the FFFI and Forgiveness Measures with IPIP-NEO Domains**

Table 6 provides the convergence of the FFFI subscales, the FFFI total score, and the seven forgiveness measures with the five domains of the IPIP-NEO. The findings for the FFFI subscales reaffirm the convergent and discriminant validity of these scales with respect to their relationships with the FFM domains. All but one of the four of the FFFI subscales from the domain of neuroticism correlated more highly with the neuroticism than with any one of the other four FFM domains. The only exception was FFFI Hostile Resentment correlating as highly with IPIP-NEO Agreeableness. All three of the FFFI subscales from the domain of agreeableness correlated more highly with IPIP-NEO Agreeableness than they did with any other IPIP-NEO FFM domain. With respect to the FFFI total score, the highest correlations were with IPIP-NEO Neuroticism and Agreeableness.

With respect to existing forgiveness scales, they had higher overall correlations with the domains of neuroticism, extraversion, and agreeableness, and lower overall correlations with openness and conscientiousness. Consistent with expectations, the FFFI Transgression Anxiety, Transgression Depressiveness, and Transgression Sensitivity correlated more highly with the domain of neuroticism than existing forgiveness measures. The one exception to this finding was the failure of FFFI Hostile Resentment to obtain a higher correlation. The three FFFI scales from the domain of antagonism obtained higher correlations with IPIP-NEO Antagonism than did the Mauer Forgiveness Inventory, the Trait Forgiveness Scale, and the Forgiveness Likelihood

scale. However, the Trait Forgiveness Scale, the Forgiving Personality Scale, the Forgiveness Scale, and the Heartland Forgiveness Scale obtained comparable correlations with antagonism. With the exception of FFFI Hostile Resentment scale, the specificity of the relationship with either neuroticism or antagonism was typically better for the FFFI scales than for the existing forgiveness measures. Discriminant validity for some of the forgiveness scales was quite poor, particularly for the Trait Forgiveness Scale, the Forgiving Personality Scale, the Forgiveness Scale, and the Heartland Forgiveness Scale.

Table 6. *Convergence of FFFI subscales, FFFI total score, and forgiveness measures with IPIP domains.*

|                                   | IPIP Domains |              |          |               |                   |
|-----------------------------------|--------------|--------------|----------|---------------|-------------------|
|                                   | Neuroticism  | Extraversion | Openness | Agreeableness | Conscientiousness |
| FFFI Transgression Anxiety        | .56**        | -.17**       | .01      | -.13          | -.12              |
| FFFI Transgression Depressiveness | .55**        | -.23**       | -.03     | -.12          | -.17**            |
| FFFI Hostile Resentment           | .39**        | -.14*        | -.07     | -.43**        | -.25**            |
| FFFI Transgression Sensitivity    | .53**        | -.27**       | -.02     | -.13          | -.19**            |
| FFFI Reactive Compassion          | .17**        | -.25**       | -.25**   | -.62**        | -.20**            |
| FFFI Softhearted Mercy            | .13*         | -.12*        | -.20**   | -.51**        | -.11              |
| FFFI Hardhearted Blame            | .22**        | -.16**       | -.23**   | -.61**        | -.36**            |
| FFFI Total                        | .51**        | -.27**       | -.16**   | -.51**        | -.29**            |
| Mauger                            | -.19**       | -.09         | -.04     | .30**         | .17**             |
| TFS                               | -.36**       | .30**        | .19**    | .57**         | .29**             |
| TTF                               | -.42**       | .17**        | .01      | .30**         | .15*              |
| FP                                | -.36**       | .34**        | .28**    | .68**         | .37**             |
| FS                                | -.42**       | .30**        | .17**    | .48**         | .31**             |
| FLS                               | -.13*        | .17**        | .12      | .30**         | .11               |
| HFS                               | -.41**       | .30**        | .30**    | .49**         | .31**             |

\*p= <.05, \*\*p= <.01

Note: FFFI= Five Factor Forgiveness Inventory; Mauger= Mauger Forgiveness Scales: Forgiveness of Others (Mauger, 1992); TFS= Trait Forgiveness Scale (Berry et al., 2005); TTF= Tendency to Forgive Scale (Brown, 2003); FP= The Forgiving Personality Scale (Kamat et al., 2006); FS= The Forgiveness Scale (Rye et al., 2001); FLS= The Forgiveness Likelihood Scale (Rye et al., 2001); HFS= Heartland Forgiveness Scale (Thompson et al., 2005).

### Incremental Validity over Forgiveness Measures

Table 7 provides incremental validity analyses for the ability of the sum of the FFFI subscales to account for variance within the sum of the other forgiveness measures over and above the variance already accounted for by a respective forgiveness measure. For example, the sum of the FFFI subscales accounted for 48% additional variance over

the Mauger Forgiveness of Others in accounting for the variance included in the sum of the six other forgiveness scales. The FFFI total score accounted for 44% additional variance over the Forgiveness Likelihood Scale. The FFFI total score obtained significant incremental validity over all seven other forgiveness scales, although the additional amount of variance fell to 5% for the Trait Forgiveness Scale and the Forgiving Personality Scale.

Table 7. *Incremental validity of the total FFFI score over measures of forgiveness.*

|                      | Forgiveness Measures |         |              |         |              |         |              |         |              |         |              |         |              |         |
|----------------------|----------------------|---------|--------------|---------|--------------|---------|--------------|---------|--------------|---------|--------------|---------|--------------|---------|
|                      | Mauger               |         | TFS          |         | TTF          |         | FP           |         | FS           |         | FLS          |         | HFS          |         |
|                      | $\Delta R^2$         | $\beta$ | $\Delta R^2$ | $\beta$ | $\Delta R^2$ | $\beta$ | $\Delta R^2$ | $\beta$ | $\Delta R^2$ | $\beta$ | $\Delta R^2$ | $\beta$ | $\Delta R^2$ | $\beta$ |
| Step 1               | .20**                |         | .75**        |         | .45**        |         | .69**        |         | .59**        |         | .31**        |         | .64**        |         |
| F <sup>a</sup>       |                      |         |              |         |              |         |              |         |              |         |              |         |              |         |
| Step 2               | .48**                |         | .05**        |         | .23**        |         | .05**        |         | .17**        |         | .44**        |         | .13**        |         |
| F                    |                      | .09**   |              | .58**   |              | .20**   |              | .53**   |              | .40**   |              | .24**   |              | .44**   |
| FFFI <sup>b</sup>    |                      | -.78**  |              | -.36**  |              | -.67**  |              | -.38**  |              | -.56**  |              | -.73**  |              | -.51**  |
| Total R <sup>2</sup> | .68**                |         | .80**        |         | .68**        |         | .74**        |         | .76**        |         | .75**        |         | .77**        |         |

\*p= <.05, \*\*p= <.01

Note: Values down each column indicate the comparison of the FFFI with the forgiveness scale listed on the column header. Criterion measure for each analysis was the sum of the scores from the remaining forgiveness measures. FFFI= Five-Factor Forgiveness Inventory; Mauger= Mauger Forgiveness Scales: Forgiveness of Others (Mauger, 1992); TFS= Trait Forgiveness Scale (Berry et al., 2005); TTF= Tendency to Forgive Scale (Brown, 2003); FP= The Forgiving Personality Scale (Kamat et al., 2006); FS= The Forgiveness Scale (Rye et al., 2001); FLS= The Forgiveness Likelihood Scale (Rye et al., 2001); HFS= Heartland Forgiveness Scale (Thompson et al., 2005), F= respective forgiveness measure. <sup>a</sup>F = The forgiveness scale specified in the respective column. <sup>b</sup>FFFI = Sum of the seven FFFI subscales.

### Stepwise Multiple Regression Predicting Forgiveness Measures with FFFI Subscales

Table 8 provides stepwise multiple regression analyses in which all of the FFFI scales are used to predict each of the seven individual forgiveness measures. Hostile Resentment was the primary predictor for three of the scales (the Mauger Forgiveness of Others Scale, the Tendency to Forgive Scale, and the Forgiveness Scale). Hardhearted Blame was the primary predictor for two others (The Forgiving Personality Scale) and the Heartland Forgiveness Scale (Thompson et al., 2005), and Reactive Compassion for the remaining two (the Trait Forgiveness Scale and the Forgiveness Likelihood Scale). However, in each case, other FFFI subscales did accounted for additional variance.

Table 8. Stepwise multiple regressions predicting forgiveness measures with FFFI subscales.

|        | R <sup>2</sup> Total | FFFI                | R <sup>2</sup> | Beta   | FFFI                  | R <sup>2</sup> | Beta   | FFFI                      | R <sup>2</sup> | Beta   |
|--------|----------------------|---------------------|----------------|--------|-----------------------|----------------|--------|---------------------------|----------------|--------|
| Mauger | .26**                | Step 1              | .22**          | -.38** | Step 2                | .04**          | -.21** |                           |                |        |
|        |                      | Hostile Resentment  |                |        | Softhearted Mercy     |                |        |                           |                |        |
| TFS    | .68**                | Step 1              | .50**          | -.51** | Step 2                | .16**          | -.33** | Step 3                    | .02**          | -.18** |
|        |                      | Reactive Compassion |                |        | Hostile Resentment    |                |        | Transgression Anxiety     |                |        |
| TTF    | .51**                | Step 1              | .37**          | -.26** | Step 2                | .07**          | -.34** | Step 3                    | .07**          | -.31** |
|        |                      | Hostile Resentment  |                |        | Transgression Anxiety |                |        | Reactive Compassion       |                |        |
| FP     | .68**                | Step 1              | .47**          | -.34** | Step 2                | .16**          | -.38** | Step 3                    | .05**          | -.28** |
|        |                      | Hardhearted Blame   |                |        | Reactive Compassion   |                |        | Hostile Resentment        |                |        |
| FS     | .44**                | Step 1              | .29**          | -.20** | Step 2                | .09**          | -.39** | Step 3                    | .06**          | -.30** |
|        |                      | Hostile Resentment  |                |        | Reactive Compassion   |                |        | Transgression Sensitivity |                |        |
| FLS    | .27**                | Step 1              | .22**          | -.26** | Step 2                | .04**          | -.19** | Step 3                    | .01**          | -.17*  |
|        |                      | Reactive Compassion |                |        | Hostile Resentment    |                |        | Softhearted Mercy         |                |        |
| HFS    | .50**                | Step 1              | .33**          | -.29** | Step 2                | .09**          | -.36** | Step 3                    | .08**          | -.30** |
|        |                      | Hardhearted Blame   |                |        | Reactive Compassion   |                |        | Transgression Sensitivity |                |        |

\*p= <.05, \*\*p= <.01

Note: FFFI= Five-Factor Forgiveness Inventory; Mauger= Mauger Forgiveness Scales: Forgiveness of Others (Mauger, 1992); TFS= Trait Forgiveness Scale (Berry et al., 2005); TTF= Tendency to Forgive Scale (Brown, 2003); FP= The Forgiving Personality Scale (Kamat et al., 2006); FS= The Forgiveness Scale (Rye et al., 2001); FLS= The Forgiveness Likelihood Scale (Rye et al., 2001); HFS= Heartland Forgiveness Scale (Thompson et al., 2005)

## **Chapter Four: Discussion**

Research has suggested and provided evidence for the role of personality in forgiveness (Glover et al., 2010; McCullough, 2000; Worthington & Wade, 1999). The purpose of this study was to develop a measure of forgiveness from the perspective of the FFM, and to provide convergent, discriminant, and incremental validity results for this measure. The FFFI was created based on the theory that forgiveness (characterized as a forgiving disposition) can be understood based on a framework of traits that correspond to those assessed by the FFM (Glover, 2013). The FFFI includes seven subscales to assess elements of forgiveness that are coordinated with respective facets of the FFM identified in a meta-analysis (Glover, 2013) that examined the existing literature relevant to forgiveness and personality traits. The vast majority of this literature (e.g., Leach & Lark, 2004; Maltby et al., 2004; Walker & Gorsuch, 2002) was not written about forgiveness and the five factor model specifically, but rather about forgiveness and personality traits in general that were found to be strongly related, and in some cases synonymous, with FFM domains and facets. Other studies (e.g., Brose et al., 2005; Butzen et al., 2008; Ross et al., 2004; Symington et al., 2002) did examine forgiveness and the FFM directly, and these were very helpful in establishing the theoretical foundation upon which the FFFI was based.

As stated earlier, The FFFI subscales were written to represent different aspects of a forgiving (or unforgiving) disposition. For example, Transgression Depressiveness assesses a victim's tendency to feel sad, despondent, and/or hopeless with respect to a transgression (i.e, forgiveness that is hypothesized to be secondary to the FFM trait of depressiveness), and Softhearted Mercy assesses a victim's level of sympathy or empathy

for a transgressor, with a focus on those emotions that engender mercy (i.e., forgiveness that is hypothesized to be secondary to the FFM trait of altruism). As hypothesized, The FFFI subscales obtained good to excellent internal consistency, as well as good convergent and discriminant validity with respect to their relationship with other FFM facet scales, as assessed using the IPIP-NEO (Goldberg, 1999). With the exception of one subscale (FFFI Transgression Anxiety, with a Cronbach's alpha of .76), all FFFI subscales obtained strong Cronbach's alpha values.

With respect to convergent and discriminant validity, the FFFI neuroticism-based scales were expected to converge more highly with their parent FFM facet scales than with other facet scales. This finding was well supported for six of the seven FFFI subscales. The one exception occurred for FFFI Hostile Resentment, which correlated equally with neuroticism and antagonism. However, this finding is in fact consistent with the results that are typically obtained for its parent facet, angry hostility. Angry hostility invariably correlates about as highly with antagonism as it does with neuroticism, as anger is an affect that is often common with expressions of antagonistic behavior (Costa & McCrae, 1992).

It was also expected that the FFFI scales would correlate more highly with their respective FFM domain than would occur for the seven existing measures of forgiveness, given the intentionally close association of the FFFI scales with the FFM. This did appear to occur for three of the four FFFI neuroticism subscales: Transgression Anxiety, Transgression Depressiveness, and Transgression Sensitivity. The one exception was again the Hostile Resentment scale, which did not obtain a higher correlation with neuroticism than was obtained for some of the existing forgiveness scales. This may



reflect in part that the FFFI Hostile Resentment scale includes both antagonism and neuroticism.

The FFFI antagonism scales did obtain strong convergent correlations with antagonism, but these correlations were matched by a number of the existing forgiveness scales. It was expected that the FFFI scales would obtain higher convergent validity coefficients with antagonism, given that they were constructed to be associated with antagonism. However, perhaps this expectation was unrealistic, given the body of research to indicate that forgiveness scales are highly correlated with antagonism (as well as with neuroticism) (Mullet et al. (2005).

However, consistent with expectations, the FFFI subscales did obtain better discriminant validity with respect to their relationships with the FFM domains. Whereas six of the seven FFFI subscales were specifically related to either neuroticism or antagonism, the existing forgiveness scales typically correlated with both neuroticism and antagonism, often at a comparable level. Two exceptions were the Mauger Forgiveness Scale and the Forgiveness Likelihood Scale, which both obtained weak convergence with neuroticism. However, they also obtained relatively weak convergence with antagonism. In sum, although the FFFI scales were not always more highly correlated with antagonism, they were at least more uniquely correlated with antagonism, providing thereby a more specific FFM variant of forgiveness.

It was expected that all of the FFFI subscales would correlate with the seven existing measures of forgiveness. This finding was well confirmed for five of the seven forgiveness scales. The two exceptions were the present but relatively weaker relationships with the Mauger Forgiveness Scale and the Forgiveness Likelihood Scale.

However, this is consistent with the relatively weak relationships obtained for these two forgiveness scales with the FFM. Note as well that these two forgiveness scales also obtained the weakest convergent validity with the other five forgiveness scales. This is perhaps due to the item content of these scales. For example, eight of the fifteen items on the Mauger Forgiveness scale are pertinent to revenge--either the act of revenge on the part of the victim, or the victim taking pleasure in witnessing unfavorable things happen to the perpetrator. While items such as these are present in other forgiveness measures, they are not present to the degree prevalent in the Mauger Forgiveness Scale, as the other scales tend to focus more on other aspects of forgivingness (e.g., perceived cognitive, emotional, or circumstantial impact of being transgressed upon). As for the Forgiveness Likelihood Scale, these items are very different from those in other scales in that they describe very specific scenarios and ask the participant how likely they would be to forgive the perpetrator in those respective situations. The specificity of these situations, and the simple question of whether to forgive in relation to them, is different from than the assessment of more general thoughts, attitudes, and practices with respect to forgiveness.

The weakest convergence obtained across the seven forgiveness scales was obtained by the Transgression Anxiety, Transgression Depression, and Transgression Sensitivity scales. It is noteworthy that these three scales are all from neuroticism, which has been indicated as an inhibitory characteristic of forgiveness (Ashton et al., 1998; Walker & Gorsuch, 2002)., and also been shown to correlate positively with vengefulness (McCullough et al., 2001). Consistent with this finding, all seven of the existing forgiveness scales correlated more highly with FFM antagonism than they did with

neuroticism. In addition, the primary predictor for each forgiveness scale was an FFFI scale from antagonism, and in all but one instance, even the secondary predictor was from antagonism. In sum, although neuroticism is recognized as an important component of forgiveness trait scales (Mullet et al. (2005), it would appear that the seven forgiveness scales considered in the current study involve antagonism considerably more than neuroticism. A potential advantage of the FFFI neuroticism scales might be their increased and specific coverage of neuroticism-based forgiveness.

An unexpected finding was the incremental validity obtained by the FFFI scales over and above each of the other forgiveness scales in accounting for variance within the sum of the remaining forgiveness scales. This incremental validity was not particularly surprising with respect to the Mauger Forgiveness Scale and the Forgiveness Likelihood Scale, as these two scales obtained the weakest convergence with the other forgiveness scales. However, the FFFI total score accounted for 13% to 23% additional variance in the sum of the other forgiveness scales, relative to the Heartland Forgiveness Scale, the Forgiveness Scale, and Tendency to Forgive Scale, This may, of course, simply reflect on the fact that the FFFI total score includes information from seven subscales.

The development of a measure of forgiveness from the perspective of the FFM has a number of potential advantages. One such advantage, given the widespread differences among definitions of forgiveness (Strelan & Covic, 2006; McCullough, Pargament, & Thoreson, 2000), and often the brevity of existing forgiveness measures, is that forgiveness may be more easily understood from this FFM perspective, thereby incorporating information about the etiology, course, and correlates of FFM personality traits into the forgiveness literature. Another similar advantage is that, in light of the

nonspecificity of the existing forgiveness measures, assessing forgiveness from the perspective of particular FFM domains and facets will provide a more comprehensive, nuanced understanding of the disposition to forgive.

Furthermore, the FFFI scales might be of benefit in clinical settings, as the topic of forgiveness often arises in psychotherapy (Sells & Hargrave, 1998). Clinicians would not only be able to make inferences about patients' tendency to forgive based on their NEO PI-R or IPIP-NEO profiles, but administering the FFFI specifically would likely help pinpoint those areas (e.g., as assessed via FFFI subscales) in which patients were particularly strong or weak with respect to forgiveness. Distinguishing these various aspects of forgiveness not only makes for a more comprehensive, nuanced understanding of the disposition to forgive, but more specifically, differentiating among different FFM domains and facets may make it easier to assess an individual's tendency to forgive based on his or her personality traits.

The conceptualization of forgiveness from the perspective of the FFM is also useful in the development of a more integrative understanding of forgiveness (Glover, 2013). There is a substantial breadth of research on the construct validity of the FFM. This construct validity is also applicable to an understanding of forgiveness, to the extent to which a forgiving disposition may be understood from the perspective of various FFM domains and facets. The existing measures of forgiveness appear to be largely mixtures of antagonism and neuroticism, albeit perhaps more antagonism than neuroticism. The FFFI subscales can provide a more specific FFM perspective, being able to distinguish whether the forgiveness reflects anxious/depressed dispositions rather than an antagonistic opposition to forgive. The separate scales for tender-mindedness and tough-

mindedness can even distinguish whether the disposition to forgive or not forgive reflects primarily a tender-minded willingness to forgive or, conversely, a tough-minded disinclination to forgive.

Forgiveness is a heterogeneous construct (Kaminer et al., 2000; Sells & Hargrave, 1998; Strelan & Covic, 2006), and without separate subscales, it will not always be precisely clear why or how a forgiving disposition relates to some external validator or correlate. The FFFI enables a researcher to disambiguate the construct into component parts to determine whether any particular finding reflects, for instance, the anxiety, depressiveness, resentment, or the sensitivity, as opposed to just attributing the finding simply to a broad and heterogeneous construct of forgiveness.

### **Limitations, Conclusions, and Future Directions**

One potential limitation of the current study was the use of an online data collection. This method of data collection provides less control and observation over questionnaire completion than would be available during a group administration within a classroom. Offsetting this concern is that participants were allowed to use as much time as needed to complete the questionnaires. They could temporarily suspend their participation whenever they felt distracted or tired. In addition, the results of the validity scale did not suggest substantial failure to participate in a forthright, meaningful manner (and those who endorsed even one item on the validity scale were eliminated from the study). Finally, the findings were consistent with theoretical expectations, suggesting that the results do not appear to be markedly impacted by random, careless responding.

Another potential limitation is that the data were collected within a student population, and thus did not allow for a greater range among participant ages and other

demographic variables. Many existing forgiveness studies have also sampled student populations (e.g., Brose et al., 2005; Ross et al., 2004; Symington et al., 2002). There is nothing inherent about the construct of forgiveness that would preclude accurate conclusions with respect to the disposition to forgive. Nevertheless, it would be useful for future research to sample other relevant populations, notably clinical samples involving persons who have been victimized.

Finally, the FFFI is a measure of forgiveness of others only, not forgiveness of self. In this regard, the measure is not as inclusive as it could be. However, there are other measures (e.g., Mauger Forgiveness Scales, 1992) that do include a subscale assessing self-forgiveness. If the FFFI proves to be effective in forgiveness and personality research, it might then be useful to develop additional FFM-based scales for the assessment of the forgiveness of the self.

With respect to future research, the direction of causation between five factor model traits and forgiveness characteristics remains unclear (Brose et al., 2005). While FFM personality traits may affect one's disposition to forgive, learning to forgive via a forgiveness intervention may foster a change in one's personality characteristics. Further research would also be helpful in parsing out the more nuanced aspects of forgiveness (e.g., absence of negative emotions vs. presence of positive emotions, situational vs. dispositional forgiveness).

In conclusion, the FFFI subscales obtained good internal consistency, as well as solid convergent validity with analogous FFM domains and facets, and good discriminant validity with respect to other FFM domains and facets. The FFFI total score obtained significant incremental validity over seven alternative measures of forgiveness scales, In

sum, the FFFI appears to be a promising new assessment measure for assessing the specific characteristics and facets of a forgiving disposition in a manner that is explicitly related to a well-validated model of personality functioning. The FFFI may prove a helpful tool for not only expanding research on forgiveness with respect to the FFM, but also for parsing this heterogeneous construct into various theoretically-driven components into order to better understand nuances, consequences, and treatment implications with respect to forgiveness.

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**NATALIE G. GLOVER**  
VITA

**EDUCATION**

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- Clinical Psychology Predoctoral Intern** 2014–2015  
VA Puget Sound: American Lake Division  
Training Director: Patrick D. Sylvers, Ph.D.
- M.S. in Clinical Psychology** 2011  
University of Kentucky; Lexington, KY  
Thesis: The Five Factor Narcissism Inventory: A Five-Factor Measure of Narcissistic Personality Traits  
Chair: Thomas A. Widiger, Ph.D.
- B.A. in Psychology, *Summa cum Laude*** 2008  
**B.A. in Philosophy, *Summa cum Laude***  
University of Kentucky; Lexington, KY  
Honors Thesis: The Search for the Successful Psychopath  
Mentor: Thomas A. Widiger, Ph.D.

**HONORS & AWARDS**

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University of Kentucky

- Lyman T. Johnson Graduate Fellowship 2008-2010  
College of Arts & Sciences Lyman T. Johnson Alumni Award 2005  
Otis A. Singletary Scholarship (full tuition scholarship/stipend) 2004-2008  
1<sup>st</sup> Place, Erik Peake Memorial Essay Contest 2004  
Kentucky Governor's Scholars Program 2003

**PUBLICATIONS**

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1. **Glover, N.G.**, Sylvers, P.D., Shearer, E.M., Kane, M., Clasen, P.C., Epler, A.J., Plumb-Villardaga, J.C., Bonow, J.T., & Jakupcak, M. (under review). The efficacy of Focused Acceptance and Commitment Therapy in VA primary care. *Psychological Services*.
2. Young, A.M.; **Glover, N.G.**; & Havens, J. R. (2012). Nonmedical use of prescription medications among adolescents in the U.S.: A systematic review. *Journal of Adolescent Health, 51*, 6-17.
3. Young, A.M.; **Glover, N.G.**; & Havens, J.R. (2012). Rural adolescents' nonmedical prescription drug use: Implications for intervention. *The Prevention Researcher, 19*(1), 7-9.
4. **Glover, N.G.**; Miller, J.D.; Lynam, D.R.; Crego, C.; & Widiger, T.A. (2012). The Five-Factor Narcissism Inventory: A five-factor measure of narcissistic personality. *Journal of Personality Assessment, 94*(5), 500-512.
5. **Glover, N.G.**; Crego, C.; & Widiger, T.A. (2011). The clinical utility of the the five factor model of personality disorder. *Personality Disorders: Theory, Research, and Treatment, 3*(2), 176-184.

6. Mullins-Sweatt, S., **Glover, N.G.**; Derefinko, K.J., Miller, J.D., & Widiger, T.A. (2009). The search for the successful psychopath. *Journal of Research in Personality*, 44(4), 554-558.

### BOOK CHAPTERS

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1. Widiger, T.A. & **Glover, N.G.** (2015). *DSM Workgroup Structure and Process*. The Encyclopedia of Clinical Psychology. 1-8.

### RESEARCH POSITIONS

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**Research Assistant** 2010–2011

Center on Drug and Alcohol Research (CDAR) Lab, Department of Behavioral Science  
University of Kentucky, Lexington, KY  
Lab Director: Jennifer Havens, PhD, MPH

**Research Assistant** 2009–2010

Child and Development Lab, Department of Psychology; University of Kentucky, Lexington, KY  
Lab Director: Peggy Keller, PhD

**Research Assistant** 2005–2006

Gerontology Lab, College of Public Health; University of Kentucky, Lexington, KY  
Lab Director: Joy Jacobs-Lawson, PhD

### CLINICAL POSITIONS

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**Clinical Psychology Predoctoral Intern** 2014–2013

VA Puget Sound: American Lake Division  
Rotations: Primary Care Mental Health Integration (PCMHI); Mental Health Clinic (MHC);  
Veterans Intensive PTSD program (VIP)

**Graduate Student Affiliate** 2013–2014

**Mental Health Assistant** 2006  
Eastern State Hospital

**Health Psychology Intern** 2013–2014

Bluegrass Health Psychology

**Neuropsychology Intern** 2012–2013

Allen Psychological Services

**Graduate Student Therapist/Assessment Administrator** 2009–2013

**Assessment Coordinator** 2010–2011

**Clinic Assistant** 2006

Jesse G. Harris Psychological Services Center

**Behavioral Health Psychology Intern** 2011–2012

University of Kentucky Hospital, Family and Community Medicine

**Group Therapist** 2011

University of Kentucky Counseling Center

**Group Therapist** 2010

Salvation Army, Parenting Group

**Neuropsychology Intern**  
Cardinal Hill Rehabilitation Hospital

2009

### **TEACHING & MENTORING EXPERIENCE**

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**Laboratory Instructor**, University of Kentucky  
*Undergraduate Level*

|   |             |
|---|-------------|
| Experimental Psychology                 | Summer 2013 |
| Introduction to Psychology              | Spring 2013 |
| Introduction to Psychology              | Fall 2012   |
| Experimental Psychology                 | Summer 2012 |
| Introduction to Psychology              | Spring 2012 |
| Experimental Psychology                 | Fall 2011   |
| Application of Statistics in Psychology | Summer 2011 |
| Experimental Psychology                 | Spring 2011 |

### **ACADEMIC AND PROFESSIONAL ACTIVITIES**

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**Member:** Diversity Committee 2014-present  
VA Puget Sound: American Lake Division

**Founding Member:** Diversity Task Force 2011–2014  
Clinical Psychology Program, University of Kentucky  
Authored Religion section of Diversity Manual 2011

**President:** Psi Chi (University of Kentucky Chapter) 2007  
University of Kentucky

### **MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS**

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American Psychological Association of Graduate Students  
Society for Personality Assessment  
Kentucky Psychological Association  
Association for Contextual Behavioral Science

### **COMMUNITY EXPERIENCE**

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Volunteer: University of Kentucky “Young at Heart” Friendly Visitor Program 2011–2014  
Mayfair Manor Nursing Home