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CONNECTING WITH SELF, GOD, AND OTHERS: THE RELATIONSHIP BETWEEN MINDFUL AWARENESS, PRAYER, AND EMPATHY DEVELOPMENT

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CONNECTING WITH SELF, GOD, AND OTHERS: THE RELATIONSHIP BETWEEN MINDFUL AWARENESS, PRAYER, AND EMPATHY DEVELOPMENT

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

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Abstract

The current research examines the relationship between mindfulness, prayer, and empathic understanding. Empathy has been shown to be a critical component of positive human interaction and interpersonal relationships. Amongst other qualities, it consists of awareness of one's own emotions, sensitivity to the emotions of others, and unbiased perspective taking. Mindfulness is defined as the awareness that emerges through paying attention to the present moment in a nonjudgmental manner. Prayer has been shown to promote social sensitivity and reduce judgmental responses. Due to the similarity in function and outcome of mindfulness and prayer, it is thought that both may be used to foster empathy and promote prosocial interactions. The present study examines the relationship between self-reported levels of mindfulness and prayer fulfillment and five facets of empathy. Results: Mindfulness and prayer fulfillment were minimally related and appear to be discrete constructs as measured in the study. Mindfulness demonstrated a clear, positive relationship with empathy; prayer fulfillment did not significantly predict empathy, but the relationship was found using broader measures of spirituality. An unexpected distinction between relational prayer and self-focused prayer arose.

Chapter 1: Introduction

"Deep understanding is, I believe, the most precious gift one can give another" (Rogers, 1975, p. 9). With this quote, Carl Rogers expounds on the importance of empathic understanding within relationships. Research has shown empathy to be a critical aspect of human emotion and key to establishing positive connections with others. Empathy has been found to be a mediator in the development of interpersonal skills (Angus & Kagan, 2007) and positive interpersonal relationships (Smits et al., 2011); in healthy attachment styles imparted through parenting (Miklikowksa, Duriez, & Soenens, 2011) and emotion regulation in children, adolescents, and adults (Panfile & Laible, 2012; Tong et al., 2012); and in the context of romantic relationships through conflict resolution and marriage satisfaction (Odegaard, 1996; Scuka, 2005; Sullivan et al., 2010).

Rogers (1975, 1989) goes on to describe empathy as a process by which one person aims to *be with another* in such a way that one enters another's private perceptual world. This involves being sensitive to emotions as well as unbiased perspective taking, laying aside one's own views and values in order to enter another's world without prejudice. Rogers argues that, among other things, this involves two important ingredients: 1) being "fully aware of what is going on within [one's] self: physiologically, feeling-wise, [one's] thoughts; also [being] aware of the external world that is impinging on [the self]" (1989, pp. 188-9); 2) to "trust [in] the deepest levels of selfhood" (p. 198). These ingredients for empathy appear remarkably similar to aspects of mindfulness and spirituality.

Mindfulness is "the awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment" (Kabat-Zinn, 2003, p. 145). It is often considered to be a private, internal activity and is used by psychology to help individuals better regulate their emotions and thought processes to gain a sense of understanding and control of their own lives. It has been found to be therapeutic for a number of mental disorders and client problems (e.g. anxiety, Frye & Spates, 2012; chronic pain, Kabat-Zinn et al., 1985; food disorders, Kristeller & Hallett, 1999; depression, Vollestad, Nielsen, & Nielsen, 2012). However, it seems possible that mindfulness skills could be applied not only for improvement of nonjudgmental personal understanding but also turned outward for similar awareness of others' experiences.

Prayer is a fundamental aspect of spirituality for many religious traditions. The term "spirituality" is often nebulous and challenging to pin down in both its definition and its application to the human existence, yet for many it is that aspect of human existence that gives it its "humanness" (Swinton, 2001). It involves finding a dimension of meaning in life and refers to an inner belief system that a person relies on for strength and comfort (Houskamp et al., 2004). A common practice of many religious and spiritual traditions is that of prayer. Prayer is a petition or act that seeks to establish communication with a god, God, higher power, or other object of worship. Prayer can take many forms and mean many different things depending on the individual. These different forms can involve individual or corporate prayer; prayers of petition, prayers of thanksgiving, prayers of worship and praise, prayers of intercession, or prayer of confession; words, songs, chanting, sounds, or silence; rituals, dancing, gestures, or

kneeling; and these are but a few examples of the diversity of prayer across the human experience (Giordan & Woodhead, 2013). The various types of prayer used across religious traditions indicate that prayer provides a structure that promotes feelings of self-efficacy and connection with others (see Roach & Young, 2012).

Of particular interest to the current research is the type of Christian prayer known as *relational prayer,* which is defined as a "dwelling, abiding prayer, as an ongoing, intimate relationship with God" that focuses on a "deep, rich, profound relational reality with God" (Piippo, 2016, p. 51). In other words, relational prayer involves meditation (i.e., *dwelling* and *abiding*) on the character and qualities of God in order to better understand God, the nature of one's relationship with God, and to deepen the experiential reality of that relationship.

If empathy really is a fundamental aspect of positive interpersonal behavior, then finding ways to nurture it should be an important endeavor of psychology. Mindfulness and spirituality may be two underutilized avenues for fostering empathy development. In many ways, the underlying concepts of empathy development are reflected within the practices of mindfulness and relational prayer. Both involve reaching a place of self-acceptance: mindfulness accomplishes this primarily through increasing awareness and regulation of internal stimuli (e.g., thoughts and feelings) and external stimuli (e.g., physiological sensations and perception of others), while relational prayer focuses on attuning one's sense of self with the nature of God to increase an experiential sense of intimacy and personal relationship of acceptance and love. These two descriptions bear resemblance to the explanation of empathy as

described by Rogers (1989), involving awareness of the internal and external world and deep trust in one's sense of self.

To better understand the relationship between mindfulness, relational prayer, and empathy, an examination of the literature concerning these constructs is provided, followed by a description of the purpose, methodology, results, and discussion of the current research.

Chapter 2: Review of Literature

What is Empathy?

There is no universally accepted operational definition for the construct known as empathy. As has been previously stated, Rogers (1975) defined empathy as the ability to enter another person's private perceptual world in an emotionally sensitive and unbiased manner. Hill (2009) labels this as perspective-taking, a more cognitive form of empathy that describes the ability to see the world through another person's perspective. Perhaps this cognitive empathy can best be seen in the medical definition of clinical empathy set down by the Society for General Internal Medicine: "Empathy is the act of correctly acknowledging the emotional state of another *without* experiencing that state oneself" (Markakis et al., 1999). In other words, cognitive empathy is the ability to interpret and understand the experiences and feelings of others. Hill also describes an affective or emotional empathy, which is the ability to feel another person's feelings at a deeper, subjective level of experience. Siegel (2010b) labels this affective empathy as attunement, the "authentic sense of connection, of seeing someone deeply, of taking in the essence of another person in that moment" (p. 34). Empathy has also been expanded to include *empathic imagination,* where one imagines what it is like to be another person, and *empathic identification,* where one makes a direct attempt to cognitively and emotionally identify with another (see Siegel, 2012).

Empathy as a construct has been around for roughly 150 years. It is a translation of the German word *einfühlung* (Titchener, 1909), which originally referred to the relationship between an artwork or natural beauty and an observer who projects himself into the object using imagination (e.g. feeling an emotional warmth in a sunrise or a

sadness in a dreary painting). This definition was expanded by Lipps (1903) to extend to intersubjectivity between people, using the example of watching an acrobat walking on a suspended wire and *feeling one's self inside the acrobat*, to describe how humans understand the mental states of other people through an "inner imitation" (p. 193) that is accompanied by feelings and thoughts ascribed to the other.

Even in this early definition, we see the divide between cognitive empathy and emotional empathy. As Lipps (1903) describes it, one must make an internal imitation (similar to cognitive perspective-taking) and also experiences thoughts and feels that are presumably shared with the observed (similar to emotional empathy). Today, many researchers consider empathy to involve both cognitive and emotional aspects, defining it as the ability to take another's perspective and experience resulting thoughts and feelings (Block-Lerner et al., 2007; Davis, 1996). While this definition may overlap with terms like *compassion* or *sympathy,* the general rule is that empathy is more about understanding and perspective than about being driven to help another reduce suffering (Siegel, 2012).

What is important about this broader definition of empathy as both perspective-taking and emotional attunement is that they fit with the current understanding of the neural components of empathy. Neuroscientists have now confirmed that when individuals observe another person's actions, they unconsciously and automatically respond as if they were the "actor" and not just an observer (Jackson et al., 2006). This process, called mirroring, takes place through the use of the mirror neuron system (Iacoboni, 2008). The neural stimulation that takes place as a result of mirroring appears to be in no way different from the neural stimulation that takes place as a result of

personal engagement in the mirrored activity (Singer & Lamm, 2009). In other words, when we observe another person take a drink of water, yawn, or demonstrate anger or sadness, our brain involuntarily triggers a simulation of drinking water, yawning, or feeling anger or sadness. The human brain can be considered an "anticipation machine" (Siegel, 2010b, p. 148), anticipating and integrating the experiences of those around us to create patterns that help us better predict and react to our environment—particularly our social environment. Of course, this is only an automatic affective experience, which may or may not manifest itself as an accurate empathic experience. In order to translate emotional mirroring into empathy requires a cognitive anchoring. Firstly, it requires an awareness of internal emotional states and the capability to regulate them; it further requires some ability to understand and engage in perspective taking as well as an awareness of self in relation to others (Decety, 2011). Failure in these cognitive domains of empathy could result in an individual becoming overwhelmed by another's emotions, interpreting them incorrectly based on one's own perceptual and experiential framework, or missing the attunement altogether.

Iacoboni (2008) contains a review of neuropsychological research on the neural feedback loop between the top-down processing of cognitive empathy (where the higher-processing frontal cortex calls upon the emotional memory of the subcortical regions to determine shared experiences) and the bottom-up processing of emotional empathy (where the perception-based subcortical regions produce emotions that are then anchored cognitively by the frontal cortex). It is interesting to note that these two regions of the brain are connected by the middle prefrontal fibers, an area believed to be responsible for many important functions, including emotional regulation, moral

awareness—and empathy development (Siegel, 2010a). The importance of the middle prefrontal fibers to the development of empathy will be revisited in future sections, as the connection between empathy and mindfulness is more fully explored. For now, though, the study of social cognitive neuroscience has made it evident that accurate empathic perception requires an affective response, a capability for perspective taking, accurate self-other awareness, and strong emotional regulation skills (Gerdes et al., 2011).

The Development of Empathy from Childhood to Adulthood

Early theorists believed that empathy developed in late childhood, as a person begins to differentiate self from others and understand another's mental existence. According to psychodynamic theory, identification occurs in children aged three to six, with empathy developing through the latency phase into adolescence (Freud, 1905/1953). As Freud (1921/1953) explained it, "a path leads from identification by way of imitation to empathy, that is, to the comprehension of the mechanism by means of which we are enabled to take up any attitude at all towards another mental life" (p.110). Similarly, early child developmental theorists believed that egocentrism prevented empathy from emerging while children were in the pre-operational stage of mental development, occurring from ages two to six or seven (Piaget & Inhelder, 1956). Since that time, researchers have found that young children display rather intricate empathic behaviors (Zahn-Waxler, Radke-Yarrow, & King, 1979; Zahn-Waxler, Radke-Yarrow, Wagner, & Chapman, 1992a).

Based on the description of empathy provided by the early developmental theorists, it would appear they were searching for what modern theorists would call

cognitive empathy based on when children begin to develop theory-of-mind, which is the intuitive understanding and differentiation of one's own "mind" or mental state and the "mind" or mental state of others (see Premack & Woodruff, 1978; Wimmer & Perner, 1983). While it is true that cognitive empathy does not fully appear until late childhood, modern theorists (e.g. Wellman, Cross, & Watson, 2001) understand that cognitive empathy begins to develop much earlier than Piaget originally thought. In addition, the roots of the development for emotional empathy can be seen in very young infants (Simner, 1971) and evidence suggests the instinctual emotional responses begin to transform from concern for self to a true capacity for concern for others during the second year of life (Knafo, Zahn-Waxler, Van Hulle, Robinson, & Rhee, 2008). Below is outlined the current understanding of the development of emotional and cognitive anchors for empathy, beginning with newborns and moving through the developmental stages of toddlers, young children, and finally early adulthood/adolescence. For a more complete review of the following research, see McDonald and Messinger (2011).

Emotional Distress of Others in Newborns. The earliest signs of empathy must be measured behaviorally to accommodate for the developing minds of infants. A common means of examining empathy and its emotional roots in pre-verbal children is to observe their responses to the distress of others. The phenomenon of a distress response in newborns to the cries of other newborns has long been documented (e.g. Blanton, 1917), yet until the 21st century only four investigations examined this phenomenon from an experimental perspective (Dondi, Simion, & Caltran, 1999; Martin & Clark, 1982; Sagi & Hoffman, 1976; Simner, 1971). These studies demonstrated that newborns as young as 18 to 72 hours following birth often display

distress reactions when exposed to the sound of another infant. This particular kind of distress is called reflexive or reactive crying, or emotional contagion, and is distinguished from distress experienced when infants are exposed to alternative stimuli, such as their own cry (Martin & Clark), silence or synthetic newborn cries (Sagi & Hoffman), or white noise, intense sounds from inanimate objects, or non-human cry sounds (Simner). In addition, Dondi et al. found that newborns showed the facial expression of distress more frequently and for longer duration when experiencing reactive crying to another infant's distress than when reacting to the sound of their own cry. This suggests that reactive crying to another infant's distress may be a very early precursor to empathic responding, supporting the theory that there is a biological predisposition to respond to the negative emotions of others in an emotional manner and potentially providing evidence for the early development of mirror neurons (Jacoboni, 2008).

It is true that young infants are generally considered to be unable to differentiate their own emotional experiences from those of others (Bergman & Wilson, 1984) and often become overwhelmed by others' negative experiences, leading them to engage in various self-soothing behaviors (Bridges & Grolnick, 1995). However, this experience of personal distress, despite being ego-centrically encountered, is believed to be the precursor to empathic concern (Hoffman, 1975; Schafer, 1968; Zahn-Waxler & Radke-Yarrow, 1990) and a demonstration of the early formation of biological, emotionally-based attunement in the brain.

An interesting theory proposed by many psychodynamic theorists should be noted at this time. In psychodynamic theory, the earliest mother-child relationship is

often seen as contributing to the emerging emotional systems of empathy (Ferriera, 1961; Greenson, 1960; Olden, 1958). Bergman and Wilson (1984) expand on this by demonstrating the importance of intense pleasure and mutual attunement with the mother in infants' early experiences for the mature development of emotional empathy in adults. This corresponds with more recent research that shows that infants and children who experience neglect and abuse display reduced mirror neuronal development and increased difficulty in emotional empathy in adolescence and adulthood (de Bellis, Hall, Boring, Frustci, & Moritz, 2001). This would indicate that the mature development of empathy is dependent to some degree on one's social environment, even for the underlying biological systems. It also provides interesting direction for study when combined with Siegel's (2012) assertion that the mirror neuron system can be developed as an adult through mindfulness to overcome early deficits.

Early Signs of Empathy in Toddlers. Most research on the early development of empathy in infants and toddlers involves presenting a child with an overtly distressed person and observing their responses. Research on early childhood prosocial behavior is generally linked with the research on empathy development as both involve observing behavioral responses in children to others in need and hypothesizing about the underlying mental organization. As previously discussed, even very young infants appear to have a biological mechanism that brings them to respond emotionally to others' distress. Many researchers have found that toddlers aged 12 to 36 months often translate their emotional sensitivity to others' distress into attempts to comfort or distract the distressed person, sometimes with items that they themselves found comforting, such as a teddy bear (Dunn, 1987; Hoffman, 1982; Lamb, 1993). Nichols,

Svetlova, and Brownell (2009) later found these empathic responses to be moderated by two factors: empathic disposition (i.e. an innate tendency to respond to distress cries by both an infant's mother and peers) and social understanding (i.e. a combination of self-other differentiation and emotional understanding gained from an enriched social/familial environment). When empathic disposition was controlled for, the researchers saw that those infants with greater social understanding were more empathically responsive to peers. This is similar to the results of a study done by Demetriou and Hay (2004), who found that toddlers with older siblings were more likely than those without older siblings to respond to others' distress. From these and other data, one can surmise that one's understanding of emotional expression and ability to differentiate between emotions of others and emotions of the self is important to the development of empathy and can be seen even at a very young age.

There are three categories that researchers use to differentiate the underlying mechanisms of young children's prosocial behaviors: instrumental behaviors (helping someone achieve an action-based goal), empathic behaviors (helping based on concern for emotional distress portrayed by another), and altruistic behaviors (helping another when it involves cost to self). These categories were demonstrated in a study by Svetlova, Nichols, and Brownell (2010) using a selection of 18-month old and 30-month old children. Svetlova et al. provided the children opportunity to help an adult in three contexts that matched the three categories listed above (i.e. instrumental, empathic, and altruistic), with the children receiving more direct prompts to help as time passed. They found that children in both age categories were quick to help instrumentally and needed few prompts when another person needed assistance with a

task and remained emotionally neutral. However, when faced with situations requiring understanding emotional cues from distressed persons, the younger children needed a greater and roughly equal amount of prompts to help with empathic and altruistic behaviors, and the older children required less prompts with empathic behaviors but continued to struggle with altruistic behaviors.

There are many cross-sectional studies that demonstrate how toddlers begin to make overt prosocial helping behaviors that demonstrate an underlying capacity for emotional attunement. A study by Vaish, Carpenter, and Tomasello (2009) found that infants aged 18-months to 25-months were capable of sympathizing with adult victims of harm (in this case, another adult destroying or taking their possessions) even in the absence of overt emotional signals. The authors hypothesized this is due to a preliminary form of affective perspective taking, aka emotional empathy. Similarly, Dunfield, Kuhlmeir, O'Connell, and Kelley (2011) found that children began to demonstrate comforting behaviors starting at age 18-months to 24-months.

However, only a few studies have been conducted that look at this development period in a longitudinal manner (see Knafo et al., 2008; Zahn-Waxler et al., 1992a). These studies were extensive and examined the development of empathy-related behaviors between 12-months and 36-months of age using simulated distress of others and measuring multiple presentations of empathic behaviors, including concern for others, hypothesis testing, helping behaviors toward distressed individuals, and personal distress. For the majority of children, these behaviors increased significantly over the second year of life in both quantity and quality. During the early months of the studies (12-16 months), the children demonstrated primarily physical (i.e. instrumental)

behaviors. During the later months of the studies (18-20 months), the children demonstrated verbal behaviors (e.g. comfort, advice, problem-solving) as well as complex physical behaviors (e.g. sharing, distracting the person from their distress). By two years of age, nearly all toddlers engaged in some form of helping behavior in response to distress exhibited by others (Knafo et al.). By three years of age, most children can verbally explain how to help a distressed person and show a variety of empathy-related behaviors (Caplan & Hay, 1989).

Development of Cognitive Empathy. As has been discussed previously, the modern definition of empathy includes both emotional and cognitive components. Up to this point in development, young children primarily exhibit the emotional components of empathy via a vicarious experiencing of other's emotional states around them. Hay and Cook (2007) provide a comprehensive examination of the quantitative and qualitative changes that take place in prosocial behaviors in toddlers and young children. They assert that prosocial behavior becomes more selective over time as young children begin to develop theory-of-mind and apply cognitive perspective taking to their already pre-existing mental system for emotional attunement. The cognitive components of empathy begin to emerge in the ages of four and five years old, when children are generally capable of taking another's perspective during false-belief tasks (Wellman et al., 2001).

False-belief tasks are generally done by showing children a character, such as the puppet Maxi from the classic false-belief task by Wimmer and Perner (1983), putting an item away in a closed location, such as a cupboard, before leaving the room. While the character is away (and thus cannot see the item or the location it is stashed

in), another character moves the item to a new closed location. The original character then returns and the children are asked where he will look for the item, in the first location or the second, accurate location? Theory-of-mind is demonstrated when the child responds that the character will search for the item in the original location rather than the second location. This pattern of emergence of theory-of-mind at this stage of childhood development is consistent across diverse cultures (see Avis & Harris, 1991; Gopnik & Wellman, 1994; Vinden, 1996).

The possession of an intuitive understanding and differentiation of one's own "mind" or mental state and the "mind" or mental state of others is an important step in the process of truly developing mature empathy, in which one must fully and successfully identify with another's experience. It is at this stage that a child's empathic feelings are connected to a mental conceptualization of another's experience. As demonstrated previously, toddlers at age three are by-and-large capable of giving verbal advice and instructions on how to help a person in distress (Caplan & Hay, 1989). However, as theory-of-mind begins to develop in the next year or so of life, their assessment of the situation becomes more accurate, allowing them to engage in more effective helping strategies. Whereas before a child may have been motivated through emotional empathy to want to help a friend he saw crying, his newfound cognitive empathy may help him determine that his friend is sad and that laying a hand on his shoulders may be more helpful than offering a personal teddy bear (a comforting item for the child, but not the friend).

Cognitive and Emotional Empathy in Adolescence and Adulthood. In adolescence, children reach the formal operations stage of development, the final stage

of cognitive capacity in Piaget's model (Piaget, 1932/1965). This allows adolescents to begin using inferential reasoning, which is the ability to think about things that the individual has not actually experienced and to draw conclusions from these thoughts. For the first time, children are able to consider factors outside the immediate situation that may be affecting another's emotional responses, which should lend itself to empathic understanding (Hoffman, 2000). According to Selman's five stages of perspective-taking (Selman, 1980), the formal operations stage also grants adolescents the ability to better consider both their own perspectives and the perspectives of others from a third-person view, promoting the perspective-taking quality found in cognitive empathy. However, adolescent brains have to work harder than adult brains to engage in perspective-taking (Blakemore, 2008), activating their medial prefrontal cortex (the area of the brain associated with cognitive empathy) more heavily than adults. This indicates that understanding another's viewpoint may take more conscious effort for teens before it becomes a more automatic process for adults.

Numerous longitudinal studies have shown that cognitive empathy develops steadily in both boys and girls during adolescence (Davis & Franzoi, 1991; Eisenberg et al., 1991; Eisenberg et al., 1995; Eisenberg et al., 2005). One longitudinal study found that perspective-taking began to rise in adolescent females starting approximately at age 13, surpassing adolescent males until they caught up at around age 15 (Van der Graaff et al., 2014). This is congruent with neurological studies that show increased activity and development in brain regions involved in perspective taking, as these regions have been shown to develop earlier in females than in males (see Colom & Lynn, 2004; Crone & Dahl, 2012).

Interestingly, the study by Van der Graaff et al. (2014) also found that empathic concern, or emotional empathy, actually decreased significantly in adolescent males during middle adolescence. Adolescent females spiked early in empathic concern, around the age of 13, and remained fairly consistent through to adulthood. An explanation for this may be found in gender intensification theory (Hill & Lynch, 1983), which suggests that pressure to conform to gender-specific norms increases as adolescents' bodies mature, resulting in increased adherence to gender-based behavior; that is, boys may actively inhibit emotional, empathic responses while girls are generally encouraged to show them. According to Wiseman (2013), adolescent boys feel pressure to be detached, tough, funny, and strong, perhaps suppressing feelings of empathy so they can join in joking and teasing with peers. An alternative explanation may lie in the dramatic increase in testosterone that adolescent males experience at this stage of development. Behaviors focused on asserting dominance and gaining power increase as testosterone levels rise (Mazur & Booth, 1998) and both correlational and experimental studies have provided early evidence that testosterone levels negatively correlate with empathy (see Yildirim & Derksen, 2012). Regardless of whether these gender differences originate from social expectations or biological influences, one thing that remains consistent across both genders on empathy is the role of emotional regulation (Eisenberg et al., 1998), something with which adolescents as a whole tend to struggle. Studies have shown that individuals begin to shut down cognitively when overwhelmed with emotion (see Gottman & Silver, 1999; Orbach et al., 2003), and adolescents in particular are prone to struggling with overwhelming flooding of

emotions. This may cause otherwise sensitive teens to appear aloof or insensitive as they work to manage their own feelings of empathy (Sachs, 2013).

In summary, adolescent males and adolescent females both tend to see growth in perspective-taking and empathic concern during their teenage years, with females experiencing greater development overall and males experiencing fluctuation in the development of emotional empathy, both stabilizing in early adulthood (Allemand, Steiger, & Fend, 2015). While adolescents gain the biological and developmental capacity for both cognitive and emotional empathy, numerous factors influence that development. These factors include genetics, neurodevelopment, individual temperament, parenting styles, parent-child relationship quality, social influences, and many more (see McDonald & Messinger, 2011).

As one examines these developmental factors and standard development trajectory, it is clear that cognitive and emotional empathy fluctuates as a measure of time and the individual. The current research is interested in seeing if some of the key developmental areas can be continued on into adulthood. Specifically, the research shows that humans develop empathy as a result of neurological development and close interpersonal relationships, primarily through parents at first and later through broader social interactions. The next sections investigate the neurological components of mindfulness and interpersonal relationships to explore three main ideas: mindfulness practices strengthen the neurological structures that promote cognitive empathy; focusing on close interpersonal relationships strengthens the neurological structures that promote emotional empathy; and engaging in relational prayer to deepen one's sense of

relationship with God may strengthen the same neurological structures as the previous statement, thus lending itself to empathy development.

The Fundamentals of Mindfulness

The basic definition of mindfulness has already been given as the ability to bring one's complete attention to the experiences occurring in the present moment in a nonjudgmental or accepting way (Kabat-Zinn, 2003; Linehan, 1993). It is often associated with (or even used interchangeably with) meditation and Eastern religious practices. What occurs during mindfulness training interventions, however, and what precisely does mindfulness entail? This next section attempts to answer that question.

Mindfulness training programs, such as mindfulness-based stress reduction (MBSR; Kabat-Zinn, 1982) and mindfulness-based cognitive therapy (MBCT; Segal, Williams, & Teasdale, 2002), generally involve mindful exercises, meditation homework, relaxation skills, strategies for identifying and coping with emotions, and explanations about the physiology of stress. A mindful exercise might include skills that help an individual concentrate more fully on the present moment, such as focusing on a single object and observing its physical qualities with as many of your senses as possible, acknowledging stray thoughts and losses of concentration before returning the focus to the object again and again until a specified amount of time is up. Meditation homework could take the form of guided imagery of a tranquil location or imagining one's self as the waters of a deep lake, observing the (emotional) turmoil on the surface from the tranquility and distance of the bottom. Common examples of relaxation skills in mindfulness training include focused awareness on various bodily sensations by picturing a band of light moving slowly down your body and deep-breathing exercises.

Another common mindfulness strategy includes describing current felt emotions through naming them and associating pictures, sounds, actions, and intensity levels to them, along with thoughts that arise alongside the emotions and situations where the emotions develop. One might then learn to shift their focus back and forth between internal experiences and external sensations as they process their ongoing moment-to-moment stream of awareness. Psychoeducation on stress and (recently, per Siegal, 2010) even neural development is also a part of many mindfulness trainings.

Mindfulness interventions differ from other cognitive and cognitive-behavioral approaches in one important way. Rather than focusing on changing negative irrational thoughts or modifying negative behavioral patterns, mindfulness programs seek to improve awareness and acceptance of thoughts and emotional experiences in the present moment as they occur (de Bruin et al., 2012). The premise is that this increased openness reduces the physiological reaction to unwanted thoughts and emotions and allows one to respond with intention and compassion to one's self and others.

At this point, it may be helpful to recall that according to Gerdes et al. (2011), four neural actions are needed for accurate empathic perception: an affective response (via the mirror neuron system), perspective taking, accurate self-other awareness, and strong emotional regulation skills. The previous section mentioned the importance of the middle prefrontal fibers to empathy development. This area of the brain connects the more primitive, emotion-producing subcortical regions (which hold the mirror neuron system) with the decision-making and planning frontal cortex. The middle prefrontal fibers play a key role in emotional regulation. Recent research has provided a strong correlation between irregular growth of middle prefrontal fibers and the development of

mood deregulation common in bipolar disorders (Versace et al., 2008). Furthermore, individuals who have been in long-term remission from a bipolar disorder have been found to have increased middle prefrontal fiber myelination (Wessa et al., 2009). Siegel (2010a) has suggested two means of strengthening the middle prefrontal fibers, the first of which is mindfulness. He provides research evidence that those with a history of practicing mindfulness are more likely to have thicker, more reactive middle prefrontal regions. It would seem that mindfulness helps the brain integrate the neural responses of emotional and cognitive stimulation, strongly suggesting the link between mindfulness and empathy development.

Empathy and Mindfulness

It is only in the last decade that the possible link between mindfulness and empathy has been studied. Falb and Pargament (2012) dubbed this connection "relational mindfulness" and suggested it can help cultivate empathy, social curiosity, and emotional intelligence. Dekeyser et al. (2008) found a strong positive correlation between mindful self-observation/awareness and engagement in empathy and nonjudgmental acceptance of others. In this study, empathy was defined as "the emotional and cognitive understanding of others" (p. 1236), incorporating both perspective-taking and attunement. In a study by Birnie, Speca, and Carlson (2010) using a similar definition of empathy, a mindfulness-based stress reduction program was used with non-clinical volunteers. The researchers found a significant increase in perspective taking following the program's conclusion. This connection was believed to be mediated by the development of self-compassion through mindfulness training; in other words, mindfulness activities seemed to increase self-compassion, which in turn

increased the frequency and likelihood of perspective-taking. In both the Dekeyser et al. (2008) and the Birnie, Speca, and Carlson (2010) studies, engagement in empathy was associated with increased internal awareness in a nonjudgmental fashion.

There is significant interest in researching the possible uses of mindfulness training with couples counseling and this interest has resulted in rich studies of the effects of mindfulness interventions and emotional attunement. Multiple researchers have now begun suggesting mindfulness-based behavioral approaches serve as an adjunct to empathy training interventions in working with couples due to a growing body of evidence correlating mindfulness with relationship satisfaction (e.g. Barnes et al., 2007; Burpee & Langer, 2005). In addition to supporting the notion of a positive relationship between mindfulness and marital satisfaction, Jones et al. (2011) found preliminary indications that mindful attunement to one's partner and their emotional state may promote spousal attachment through changes in neural circuitry associated with safety, security, and positive affect. Wachs and Cordova (2007) found that greater levels of mindful awareness were associated with greater ability to identify and communicate emotions between romantic partners as well as higher marital satisfaction. See Block-Lerner et al. (2007) and Gambrel and Keeling (2010) for reviews of the research to date and practical application of mindfulness to work with couples and families.

From these studies, it can be hypothesized that mindful individuals are better prepared to focus their attention both inwardly and outwardly, giving them greater access to the emotional experiences of themselves (attunement) and of others (perspective-taking). This was confirmed to some degree by Greason and Cashwell

(2009) in their study with graduate-level counseling students. They found a positive correlation between mindful awareness and demonstration of empathy, which was mediated by the participants' ability to specifically focus their attention. With this in mind, it seems plausible that mindfulness's contribution to empathy development stems from its ability to grant mindful individuals two important skills: one, the ability to increase one's awareness of one's own internal emotional and cognitive state and observe it without judgment or reaction; and two, the ability to focus one's attention on particular stimuli in the environment and attune the stimuli to their own senses and perceptions.

Christian Relational Prayer

Fewer studies have looked at the link between empathy and prayer. There are many types of prayer throughout the various religious traditions, of course, ranging from solitary meditation, petitionary pleas, and intimate relational conversations, to corporate scripture reading, group chanting, and mass emotional experiences. This study will specifically focus on Christian relational prayer.

Relational prayer, as defined here, was chosen for the current study due to the portrayal of God as a person with whom one connects experientially and the emphasis on a follower's relationship to the object of God. Christianity is essentially about a relationship with God; a mutual indwelling experiential reality, which is a way of saying that Christians view God as a person (in the sense of having personality, likes and dislikes, emotions, etc.) and believe that God comes to dwell within a person and a person learns to dwell within God (i.e., mutual indwelling), creating a shared experience of life where one's personal thoughts, feelings, and perceptions become intermingled

with God's thoughts, feelings, and perceptions until, ideally, they become indistinguishable at times (Crump, 2006; Smith, 2013). This belief is often reflected in the Christian idea of marriage as an experiential metaphor for the relationship between God and humankind: two persons connecting on an intimate level, growing in mutual understanding, serving each other for shared benefit and pleasure, blending their experience of life and becoming increasingly similar and attuned to one another (Piper, 1984). Countless depictions of this metaphor can be found in theological writings, but the first is provided by Paul in the Bible when he writes: "For this reason a man will leave his father and mother and be joined to his wife, and the two will become one flesh. This is a great mystery, and applies to Christ and the church," (Ephesians 5:31-32, NRSV). In this case, church refers to "a people movement called out by God to proclaim the good news of God's rule and reign" (Piippo, 2016, p.78), or simply the followers of Christ.

Meditation is a key aspect of the development of relational prayer. Numerous Christian authors urge the importance of spending considerable time in one-on-one communication with God and of meditating on scripture. Elizabeth O'Connor declares, "As fundamental a step as we can take… is learning to meditate – learning first to hear God's word, and let it inform and take root in us. This may be extremely difficult, for the churches have no courses on meditation… despite the fact that the supreme task of the church is to listen to the Word of God," (as cited in Foster, 2011, p. 15). John Piippo (2016) instructs Christians to "meditate, ruminate, on one thing, e.g., on one verse, or part of a verse…. Marinate in [the] verses. Slow cook in them. Chew on them… The more you chew, the more the words become assimilable to your spirit. God's truths get

into you. They become you," (p. 79). Dallas Willard (1999) describes the process by which meditative prayer becomes relational in saying that "as you dwell prayerfully on [a scripture], a *yearning* that it might be [true] for *you* may arise… as it has for so many people, followed then perhaps by *invocation* ('Lord, make it so for me') and *appropriation* (the settled conviction that it *is* so, that it is a statement of fact about you)… Then we know that we have a part of the mind of Christ *in us as our own*... and we are in a position to know and understand fully how God speaks now to his children," (p. 164). These quotes serve to demonstrate the nature of the practice of relational prayer, which fundamentally involves meditation on God in an effort to understand His nature and attune our selves with His self.

The meditations of relational prayer also serve to help us join in the experiential nature of God as three persons in constant relationship with one another. A fundamental aspect, or the "central mystery," of the Christian God is this triune nature: three persons, dwelling together and comprising one (Catholic Church, 2012). While this is one of the more baffling and complex concepts within the religion, it is important because it represents the relational aspect of God. The book of 1 John tells Christians that "God is love" (1 John 4:8, NRSV). Love requires a predicate, a relationship, an *other* that experiences the subject's love. The Christian idea of God as "trinity" creates a loving relationship at its core; in the very being of God there is, and everlastingly has been, a relationship between three persons comprising one community. According to theologian Paul Copan (2009), Christianity's trinity is unique among religions in that it "offers secure basis for the personal virtues—love, humility, kindness, compassion" (p. 216)

and "offers a more fruitful context to ground and make sense of loving human relationships and interpersonal virtues" (p. 217).

In Christianity, if God is love, and love is about relationship, then it follows that one will know and be known by God. The Hebrew word for *know* that is found in the Bible is *yada*, which means *experiential intimacy*, rather than the Cartesian subject-object awareness we tend to associate with the word *know* today (Kuipers, 2002). In the New Testament, Jesus extends to mankind the invitation to enter in to Trinitarian love, a love that is perpetually other-centered rather than self-centered. Throughout the New Testament, the three persons of the Trinity are constantly shown glorifying and loving the other members of the Trinity and directing others' attention to them. Jesus repeatedly refutes His own glory and urges other to glorify the Father (see John 8:54, John 12:28, Matthew 5:16); the Father declares His love for Jesus and glorifies Him on earth (see John 17, Mark 1:11, Matthew 3:17, Matthew 17:5); the Holy Spirit is shown to offer guidance and instruction that points to Jesus and the Father (see John 15:26, John 16:14, Romans 8:27). The invitation is to join in the eternal intimacy of three persons continually celebrating each other. Thus, from this perspective to be a Christian means to have a focus on others.

The Christian conversion, so to speak, follows this rough pattern: the awareness and acknowledgment of one's sins, the cleansing of one's shame and guilt, and the development of a relationship with God. The Christian conversion seems to describe, in religious terms, a process quite similar to mindfulness: allowing oneself to become aware of internal, aversive thoughts and emotions, followed by developing acceptance and non-critical judgment of oneself (see Luoma, Hayes, & Walser, 2007). It goes a

step further, however, in then promising an increased experience of another person. That promise continues by stating that as one comes to know and love God (that is, as one develops experiential intimacy with God), he or she will come to know and love others as well (that is, he or she will develop more experiential intimacy with others).

With the theological foundation for relational prayer covered, it is time to examine the construct itself. Relational prayer traces its roots back to the 3rd-century with the Desert Fathers and Desert Mothers, the first Christian monks who lived in solitude in the deserts of Egypt, Palestine, and Syria (Ward, 2003). The Desert Mothers and Fathers focused on understanding the mysteries of God and of His character, hoping to divine spiritual truth through intimate relationship with God. However, while these individuals are often considered to be founding participants in Christian mysticism, relational prayer itself is not purely mystic. The tradition has developed through the centuries, with the influence of eastern practices, Celtic practices, and the Protestant reformation, to focus on what is referred to in the present day as *spiritual formation.*

The modern acolytes of relational prayer, such as Dallas Willard (1999), Henri Nouwen (Nouwen, Christensen, & Laird, 2010), John Piippo (2016), Thomas Merton (2007), and Richard Foster (2011), define spiritual transformation as "the process of transformation of the inmost dimension of the human being, the heart, which is the same as the spirit or will. It is being formed (really, transformed) in such a way that its natural expression comes to be the deeds of Christ done in the power of Christ" (Willard, n.d., para. 5). In other words, relational prayer is designed to inwardly transform the individual through meditation and encounters with God in such a way that

the personality and deeds of Jesus Christ naturally flow out from them when and wherever they are (Willard, 1999).

On a practical level, relational prayer involves going out to "lonely places" (Luke 5:15-16, New Revised Standard Version [NRSV]) apart from everyone else, with nothing to distract you except your own thoughts and feelings, and meditating on God (Piippo, 2016) for anywhere from twenty minutes to multiple hours. Historically, there are at least five main objects of Christian meditation. These five can be seen in theological writings and are demonstrated here by specific scriptures. The first is meditation on the Scriptures. Psalm 119:97 (NRSV) reads, "O, how I love Your law! I meditate on it all day long". An example of this would be to take a passage such as Psalm 23 and carry it with you day after day, morning and evening, saying it over and over and over. Secondly, there is meditation on the creation. Psalm 8:3 (NRSV) says, "When I consider Your heavens, the work of Your fingers, the moon and the stars, which You have set in place...." Similarly, Jesus asks us to consider the lilies and look at the sparrows. Thirdly, Christian meditation makes the world and the activity of God in the world its subject matter. Psalm 77:11-2 (NRSV) reads, "I will remember the deeds of the Lord; yes, I will remember Your miracles of long ago. I will meditate on all Your works and consider all Your mighty deeds." This meditation often means pondering the history of the activity of God in the Scriptures, the current condition of the world and God's activity in it, and remembering all that God has done in one's life. Fourth, there is meditation on the mysteries of Christ. Ephesians 1:9 (NRSV) reads, "He has made known to us the mystery of His will, according to His good pleasure that He set forth in Christ." One traditional meditation on the "mystery" of Christ is to meditate

on the concept of the cross of Christ, such as in the classic example put forth by St. Ignatius (1548/1989). The fifth object is meditation on one's self in the light of God's searching Holy Spirit. Here one prays with the psalmist, “Search me, O God, and know my heart. See if there are any wicked ways or anxious thoughts in me” (Psalm 139:23, NRSV).

Relational prayer also often involves the use of a spiritual journal, or a collection of thoughts that come to mind while meditating, often thought to be directions or communications from God or anxieties and hopes that are unearthed and wrestled with while encountering God (Piippo, 2016). This wrestling is an important aspect of relational prayer. Nouwen (1991) calls solitude with God the “furnace” (p. 20) of spiritual transformation. Baesler, Lindvall, and Lauricella (2011) developed a sociological/theological theory called *Relational Prayer Theory* based on this form of relational prayer, in which individuals begin seeking a relationship with God by focusing on *active prayers* (e.g. petition, thanksgiving, etc.) as the solitude with God leads to an increase in anxiety and unrest. This is followed by consolation and inner acceptance, developing into a focus on *receptive prayers* (e.g., contemplation, meditation), primarily listening for and hearing the voice of God rather than speaking or crying out. An individual may oscillate between active and receptive prayers, of course, but the anxiety diminishes as they develop a sense of security in their attachment to God. This is an important aspect of relational prayer because it predicts that individuals who engage in it may actually experience a loss of fulfillment and an increase in psychological distress prior to developing a sense of self-acceptance and self-regulation, both key ingredients for empathy.

In summary, the Christian idea of relational prayer is that deepening one's knowledge and experience of God helps to deepen one's knowledge and experience of others through spiritual transformation. In psychological terms, the mental effort of knowing the personified object of God may serve as practice for the mental effort of knowing another human being, fostering both cognitive and emotional empathy. This may parallel similar psychological processes found in mindfulness, attachment, and the corrective emotional experience.

Prayer and Empathy

Nouwen, Christensen, and Laird (2010) suggest that private, individual prayer that establishes a positive connection between one's self and a higher power, or "the inward journey to the heart," leads to "the outward journey to community" (p. 26), which consists of, among other things, learning to empathize and forgive others as well as establishing an outward sensitivity to the hurting of others and compassion. Very little psychological research has been done examining the relationship between prayer and empathy. A few references to empathy can be found by looking for studies focused on prayer and forgiveness, or prayer and helping behaviors, or prayer and romance. A study using surveys and structural equation modeling by Hardy et al. (2012) found that a commitment to prayer and religious involvement predicted higher levels of empathy. An experimental study by Vasiliauskas and McMinn (2013) found that Christian participants assigned to a prayer group using non-corporate, non-meditative petitionary and relational prayers with a focus on forgiveness showed significant changes in empathy towards individuals with whom they were in conflict. Butler, Gardner, and

Bird (1998) conducted a series of interviews with religious married couples that resulted in qualitative evidence suggesting that joint prayer between romantic partners works to facilitate empathy and unbiased perspective and orientation towards the other, while Beach et al. (2011) used experimental manipulation to determine that praying together with a romantic partner significantly increased softening of responses and positive intentions in females within Christian marriages. Finally, studies have shown that children can develop an awareness, understanding, respect, and sense of empathy towards others through prayer-focused interventions, both corporate and individual (e.g. Furrow et al., 2004; Yust et al., 2006).

Prayer, Empathy, and Attachment. Despite the lack of empirical evidence linking prayer with empathy, assertions can be made by looking at psychological theory, particularly attachment theory. According to Bowlby's (1982) theory of attachment, children form pervasive and enduring internal working models of relationships based on parent-child emotional bonds. These internal working models form behavioral patterns that influence individuals' development across the life span (Bartholomew & Horowitz, 1991). Three basic patterns of attachment are proposed by the theory: secure attachment, which formed from effective, consistent caregiving and created internal working models of the self as worthy of love and others as responsive, supportive, and trustworthy; anxious-ambivalent attachment, which formed from caregivers who were inconsistent in being sometimes available and helpful and sometimes distant and hurtful, and created internal working models of the self as uncertain and others as helpful but inconsistent and difficult to trust; and avoidant attachment, which formed from consistently unresponsive and unhelpful caregivers and

created internal working models of the self as unwanted and unworthy of love and others as rejecting and hurtful (Ainsworth & Bowlby, 1991; Ainsworth et al., 1978; Lopez, 1995). These three styles are sometimes simplified as secure attachment and insecure attachment (including anxious-ambivalent and avoidant styles).

Attachment theory and empathy research cover much common ground in looking at how individuals relate to others (see Lopez, 1995; Lopez & Brennan, 2000). Poor parental care in early childhood bonding has shown correlation with high psychological distress in men (Chambers, Power, Loucks, & Swanson, 2001) and antisocial traits in both men and women (Reti et al, 2002), suggesting that early childhood attachment may be positively associated with emotional attunement, emotion regulation, and perspective taking, all important features of empathic concern. Barnett (1987) found evidence that healthy and attentive parental care in early childhood bonding was related to the development of increased capacity for empathy.

Hazan and Shaver (1987) proposed that attachment styles formed in early childhood likely carry forward into adulthood and lead adults to approach romantic relationships in a manner consistent with the research done on infants portraying secure, anxious-ambivalent, and avoidant attachment. Research has shown that greater trust and comfort with closeness in adult relationships is associated with greater empathic concern and perspective taking, while greater anxiety in adult attachments is associated with greater personal distress and lack of emotion regulation (Joireman, Needham, & Cummings, 2002). Interestingly, Joiremen, Needham, and Cummings found that anxious adult attachment did not correlate with lower levels of empathic concern or perspective taking, though it did appear to make empathic responding more difficult.

They did find that avoidant attachment in adults was related to lower empathic concern and perspective taking and greater personal distress and lack of emotion regulation. This was supported by research conducted by Trusty, Kok-Mun, and Watts (2005) on the effects of adult attachment on emotional empathy using masters-degree level counseling students. They found that the strongest predictors of empathy were lower levels of avoidance and higher levels of anxiety, with secure attachment predicting higher levels of willingness to engage empathically (but slightly lower reported experiential emotional empathy than students with anxious-ambivalent attachment). Britton and Fuendeling (2005) used self-report questionnaires with undergraduates to examine early childhood attachment, adult attachment, and cognitive and emotional components of empathy. They found that adult undergraduate students were more likely to have insecure attachment styles than a secure attachment style and thus have lower levels of empathy. They also found that romantic attachments were more salient than, but still consistent with, recollections of early childhood parental bonds, and that emotional empathy was more strongly associated with attachment than cognitive empathy. The latter finding is consistent with recent research that has linked the development of mirror neurons, a key component of emotional empathy, with the internal working models of children and adults across the three attachment styles (see Bretherton & Munholland, 2008; Cozolino, 2006).

To summarize, attachment in both early childhood and adulthood plays a key role in one's ability to develop empathy for others. Individuals with avoidant attachment tend to display overall lower levels of empathy; individuals with anxious-ambivalent tend to display higher levels of empathy but lower levels of emotion

regulation and engagement; and individuals with secure attachment tend to display higher levels of empathy, emotion regulation, and engagement. Prayer comes into the discussion of attachment and empathy when looking at the idea of a correctional emotional experience (Alexander & French, 1946). A corrective emotional experience is a term used primarily in the counseling settings of attachment theory and interpersonal process theory (Sullivan, 1953; Teyber & McClure, 2006) and is described by Bernier and Dozer (2002) as "an experiential relearning through which the [individual] can safely alter his or her rigid relational patterns by being exposed to new interpersonal experiences" (p. 32). While the concept of a corrective emotional experience is still debated within counseling psychology research (see Bernier & Dozer, 2002), an impressive body of research has supported the construct as useful and (in some studies) even necessary for changes in attachment style and development of long-lasting trust and security in relationships (for historical reviews of this research, see Bridges, 2006; Palvarini, 2010). Extrapolating from this research, one can posit that a corrective emotional experience is at least one means of moving an individual from an insecure attachment style to a more secure state of attachment as an adult.

A few studies have linked the Christian relationship with God and corrective emotional experiences. Silverman and Oglesby (1983) examined the experiences of individuals who were "born-again" while confined in prison. Being "born-again" in this sense referred to a conversion involving "coming into touch with God" and experiencing "well-being, a sense of peace, and a feeling of completeness" through a process marked by "prayer, communion, confession, study, and Christian fellowship as reinforcers of the experience" (p. 179). Silverman and Oglesby posited that the religious

encounter with God served as a corrective emotional experience and they demonstrated that it was capable of creating an enduring emotional and interpersonal change in the individual. Other research has found that a therapeutic approach that combined psychotherapy aimed at treating substance addiction with communal and spiritual corrective emotional experiences within an Alcoholics Anonymous group led to greater capacity for interpersonal connections and emotion regulation, among other therapeutic benefits (Knack, 2009). Finally, Bartz (2009) demonstrated the effectiveness of integrating theistic relational aspects into Yalom's (1980) existential psychotherapy. This approach used the relationship with God as a corrective emotional experience to counter ultimate and deeply rooted concerns (such as death, isolation, freedom/responsibility, meaninglessness, guilt/shame, uncertainty, loss, and inferiority) and promote an ultimate and deeply rooted trust, peace, and acceptance of the experiences of the self and others, in line with the existential and theistic writings of Lewis (1952), Kierkegaard (1847/1995), and Tillich (1957).

Piippo (2016) asserts that a Christian who hates others is a contradiction. This is not to say that a follower of Christ cannot or does not experience hatred or animosity towards others, but is rather a statement about the relational dynamic between a Christian and God. Christian relational prayer involves spending much time in the presence of the God who so loved the world (i.e., the individual people in the world) that He was willing to die to save it. Tillich (1952) says that the spiritual movement that takes place in protestant Christianity, shaping a person into greater self-compassion and empathy for others, is derived from the great transformative power of experiential, emotional, personal encounters with God. If God is truly viewed as a person with whom

one encounters in relational prayer, and the nature of God is truly viewed as loving, accepting, consistent, and nurturing (as the ideal version of those caregivers who promote secure attachment), then it follows that one can have a corrective emotional experience with God in prayer and fellowship that leads to changes in attachment and subsequent changes in empathy. The theologian Dietrich Bonhoeffer (1954) describes this process in his book *Life Together:* "I can no longer condemn or hate a [person] for whom I pray, no matter how much trouble [they cause] me. [Their] face, that hitherto may have been strange and intolerable to me, is transformed in [prayer] into the countenance of a [beloved family member] for whom Christ died, the face of a forgiven sinner. This is a happy discovery for the Christian who begins to pray for others" (p. 86).

Prayer, Empathy, and Mindfulness. Another way of searching for a link between prayer and empathy may be done through examining the similarities between meditative prayer and mindfulness, the latter of which has already been shown to demonstrate strong connections to empathy. Many aspects of relational prayer appear to mirror aspects of mindfulness. Meditation and mindfulness go hand-in-hand; in fact, many mindfulness interventions in psychology stem from meditative prayer practices in Eastern religions (Kabat-Zinn, 1982). Meditative, relational prayers concern the development of self-awareness, which is a key aspect of mindfulness. The psalmist cries out, "Search me, O God, and know my heart; test me and know my thoughts. Show me if there is any wicked way in me…" (Psalm 139:23-24a, NRSV). Relational prayer also involves the development of self-compassion, which has been demonstrated to be a key aspect of mindfulness (Birnie, Speca, & Carlson, 2010). As Piippo (2016) says, "Jesus'

heart was forgiveness shaped," (p. 108), and as one becomes more attuned with Christ, one has more forgiveness and compassion for the self (as well as others). Another similarity between relational prayer and mindfulness is the development of the ability to regulate emotions and reduce emotional reactivity. Piippo comments that a burdened heart is inattentive, and a primary step in developing a relational, conversational prayer with God is to unburden, to recognize the anxieties within one's heart and to learn to trust that He will take care of those needs and burdens. To "cast all your anxiety on Him, because He cares for you" (1 Peter 5:7, NRSV) requires trust, and as Marroquín and Nolen-Hoeksema (2015) found, interpersonal trust lends itself to a sense of peace and emotion regulation. As Piippo (2011) put it, "Christ-in-you is not now in a panic room. He is not agitated. He is not freaking out. His peace is not circumstantial… In His presence [in relational prayer], this becomes your reality, too," (p. 1).

One thing that prayer incorporates in practice that mindfulness training often omits is the anchoring of the action to a meaningful purposiveness for the individual. It blends the psychological and neurological benefits of mindfulness with a sense of spirituality, which refers to an inner belief system that a person relies on for strength, meaning, and comfort (Houskamp et al., 2004). Frankl (1963) asserted that finding meaning and purpose in one's actions helps one develop greater resilience and ability to cope with life's traumas. Focusing on personal meaning seems to serve as a sort of psychological mediator of stress (Folkman & Moskowitz, 2000; Lazarus, 1995) and promotes an internal awareness that can enhance the experience of empathy (Leung et al., 2012). Meditative prayer and spiritual mindfulness following the legacy of Merton

(1968, 2007) and Nouwen (1996) focuses heavily on its usefulness in finding meaning and purpose in life as well as awareness of one's self and one's relation to others.

Another thing that Christian relational prayer focuses on that is not directly related to mindfulness is the emphasis on love and connection, first with God and then with others. The "second greatest commandment" according to Christ is to "love your neighbor as yourself" (Matthew 22:39, NRSV). Some of His final words to His apostles included, "This is my commandment, that you love one another as I have loved you," (John 15: 12). The Golden Rule of Christianity reads: "In everything do to others as you would have them do to you," (Matthew 7:12, NRSV). These scriptures and many more imply a focus on developing a compassion for others and treating others with forgiveness and grace. The Christian model is that this compassion grows out of a relationship with Jesus and *not* primarily from choice or effort (see John 15:5). Many previous studies have demonstrated a link between compassion for others and the presence and development of empathy (e.g., Birnie, Speca, & Carlson, 2010; Kristeller & Johnson, 2005; Lim & DeSteno, 2016). With this positive correlation between compassion and empathy in mind, if strengthening the relationship between one's self and God truly does increase compassion, then it would follow that relational prayer should correlate with empathy and may even lead to empathy development.

Prayer and Empathy Summary. While the current study does not examine prayer and empathy through the lens of forgiveness, attachment, or compassion, these areas are important to review in order to create a connection between prayer and empathy that is at least theoretically supported by previous literature. With this in mind, it seems plausible that meditative, relational prayer contributes to empathy development

through two main avenues: one, a degree of awareness and acceptance in a way similar to how mindfulness effects empathy; and two, a focus on interpersonal relationships and a sense of deeper personal meaning behind them. This interpersonal aspect of prayer may influence empathy by creating a corrective emotional experience to form a more secure attachment style for individuals with primarily anxious-ambivalent and avoidant attachment styles. It may also influence it by focusing a person on developing compassion and concern for others, or by deepening one's sense of meaning and fulfillment in life. The aim of the current study is not to verify the specific method by which interpersonal elements of relational prayer influence empathy, but rather to provide evidence that prayer does contribute to the development of empathy due to an interpersonal focus.

Chapter 3: Overview of the Current Study

Statement of Problem

The current research was initially based on the neurological discoveries made by Siegel (2010a) on the structures of the brain associated with empathy. As previously discussed, activity within the middle prefrontal cortex is strongly associated with empathy. This region is also strongly associated with various aspects of mindfulness and other characteristics important to mental health. In fact, Siegel provides research outlining the evidence for nine distinct functions associated with the fibers of the middle prefrontal cortex. These nine functions include: bodily regulation, attuned communication, emotional balance, fear modulation, response flexibility, insight, empathy, morality, and intuition. Body regulation refers to gaining conscious control over some aspects of the Autonomic Nervous System, which regulates functions like heart rate, breathing, etc. Attuned communication, or mental attunement (Siegel, 1999), refers to the ability to feel another's feelings; it is the sense of *feeling felt,* a primary quality of emotional empathy. Emotional balance, or affect regulation, is the ability to keep from being overwhelmed by emotional arousal while also avoiding becoming inflexible in ones emotional response. Fear modulation refers to that region of the brain's control over the release of gamma amino butyric acid, an inhibitory neurotransmitter that modulates the fear response, and one's ability to change the conditions under which the neurotransmitter is released. Response flexibility refers to pausing before taking action, being able to accurately assess ongoing stimuli, consider possible responses, and choose to act in a meaningful way. Insight refers, simply, to our self-knowledge, integrating our cognitive memory and representation of ourselves

with the affective limbic system to provide emotional texture (and thus, meaning) to our present life. Empathy has been covered in detail, but here specifically refers to the cognitive, perspective-taking elements. Morality refers to the ability to think of the larger social good and act on those thoughts, even when alone. Finally, intuition refers to an awareness of one's physical sensations that indicate subconscious emotional directives, followed by the degree to which one trusts one's self to act on those sensations.

The reason it is important to review these nine functions at this time is that many of these functions correspond with noted benefits of mindfulness. Most mindfulness practices used in therapy today are utilized for a specific clinical purpose that addresses one or more of these nine functions. MBSR (Kabat-Zinn, 1994) is considered a general stress reduction program that reduces anxiety and stress by increasing mindful awareness of physical sensations and mental experiences to foster intentional responding rather than automatic reacting. MBCT (Hayes et al., 2004) is mainly used in conjunction with other modes of therapy to help reduce the symptoms of major depressive disorder and prevent relapse in patients with chronic cases. The mindfulness aspects of DBT (Linehan, 1993) focus on enhancing awareness of sensations, thought monitoring, and emotion regulation. These interventions focus on increasing bodily regulation, emotional balance, fear modulation, response flexibility, insight, and even intuition. Taken as a whole, one could argue that these interventions work to increase the various functions of the middle prefrontal cortex by strengthening the growth of the middle prefrontal fibers.

Most mindfulness interventions were not designed for the purpose of empathy development despite the growing body of research that suggests empathy to be a by-product of mindfulness, likely through stronger connections within the middle prefrontal cortex (Siegel, 2010a). Instead, the general purpose across all forms of mindfulness treatments is to teach openness, awareness, and acceptance of present-moment experiences for the treatment of clinical issues and the reduction of clinical symptoms.

It is this paper's position that the *purpose* of meditative prayer has little to do with symptom reduction or resiliency development for most people. It is not a *clinical* process but rather a *relational* process for these individuals. Though a religious person may on occasion meditate because he or she feels anxious or distressed, engagement in meditative prayer is not ultimately about reducing stress, improving mood, or enhancing attentional capabilities; it is about spiritual development, connecting with an external identity, and empowerment for prosocial activities (Nouwen, Christensen, & Laird, 2010). Alongside mindful activities that promote growth similar to the treatments previously listed, meditative prayers intentionally seek a sense of connection and interpersonal awareness (see Gunaratana, 2011; Merton, 2007). It is this added level of intentionality and relational purposiveness that leads this author to purport that meditative prayer may be uniquely suited to boost the development of empathy, potentially tapping into further functions of the middle prefrontal cortex (such as attuned communication and morality).

There are four fundamental assumptions, supported by previous literature and philosophy, that lay behind this research. The first is that empathy is a mechanism

humans have developed to function within interpersonal relationships; that is, it is a relational skill. The second is that empathy requires not only awareness of others' emotions through the cognitive effort of perspective taking and the biological ability to perceive others' emotions through mirror neurons, but that it also requires a degree of self-awareness and nonreactivity to (that is, acceptance of) emotions in order to accurately take another's perspective and to differentiate between one's own emotions and those of another person. The third is that mindfulness is an activity that is specifically designed to increase self-awareness of thoughts and emotions, self-acceptance, and non-reactivity to internal and external stimuli. The fourth and final is that spirituality is a relational process, the efforts of an individual to relate to an object (in the psychodynamic sense of the word) that is outside of and greater than the individual and which aids in the development of one's sense of self. These principles are important because they lay the foundation for the research questions and explain the mechanisms by which they are proposed to work.

The questions that prompted the current research were focused on the effects of mindfulness and spiritual connection and fulfillment to the development of empathy. Namely, does mindfulness promote the development of empathy? Does one's sense of connection and relationship to God promote the development of empathy? As empathy is a tool used primarily in relational contexts, it should follow that engagement in activities that are focused on relating to and understanding a "person"—be that one's own self or the "person" of God—use similar psychological mechanisms. Thus, the hypothesized mechanism by which these two practices influence empathy in an individual is the development of relational awareness, understanding, and acceptance.

Research Questions

The present research attempted to answer three main questions. Table 15 contains a list of the constructs examined within the research questions and the corresponding measures used for operational definitions.

Research Question One

Does spirituality (theoretically defined as a personal sense of meaning and connection with something greater than one's self) add a unique relational factor to the practice of mindfulness (theoretically defined as a sense of awareness and nonreactivity)? For this research question, spirituality was operationally defined as the score on the Spiritual Transcendence scale of the Assessment of Spirituality and Religious Sentiments [ASPIRES], while mindfulness was operationally defined as the composite score on the Five-Facet Mindfulness Questionnaire [FFMQ].

It may be that a factor analysis of the combined measures of the Spiritual Transcendence subscale of the ASPIRES and the full FFMQ will result in many of the ASPIRES items loading with the five factors of the FFMQ based on their mutual focus on mindfulness, with an additional factor emerging based on the spiritual, relational aspects assessed by the ASPIRES (specifically, the Prayer Fulfillment subscale), and that all of the rotated factors will be correlated. This would indicate that many aspects of mindfulness are reflected in common spiritual practices (and vice-versa) but that spirituality also includes a relational dynamic distinct from mindfulness, as discussed in the review of the similarities and differences between mindfulness and meditative prayer.

Alternatively, results may show that the original factors of the Spiritual Transcendence subscale of the ASPIRES and the full FFMQ will remain intact with no blending of the individual items across measures and no correlation of factors across measures. This would indicate the FFMQ and ASPIRES measure distinct constructs and, furthermore, it would lend support to the idea that mindfulness practices and spiritual practices have fundamental psychological differences despite the fact that they are often used in conjunction and their methods are often similar (e.g., Kabat-Zinn, 1982).

In an attempt to better assess the construct of relational prayer as defined in this study, a number of items from the ASPIRES were selected for an additional factor analysis with the FFMQ. The items from the ASPIRES were chosen based on a theoretical assumption of an underlying focus on prayer as relationship with God (see Table 15). These items are referred to as the Prayer Focus items throughout the current research. It is thought that the factor analysis will result in the factors of the FFMQ remaining intact and pure (i.e., no items from the ASPIRES loading with them) and the Prayer Focus items creating a distinct factor reflecting the importance one places on prayer and the relationship with God, with a significant correlation between scales in the final factors. This would indicate that prayer, while related to aspects of mindfulness, is distinct from mindfulness and that the ASPIRES can be used to assess relational prayer as well as its original factors (i.e., prayer fulfillment, universality, connectedness, and religiosity).

Research Question Two

Does involvement in spirituality (specifically, prayer) and mindfulness predict one's developmental level of empathy (theoretically defined as the ability to perceive another person's emotional experience through a combination of physiological mirroring and cognitive perspective-taking, without becoming overwhelmed or confusing one's own affective response with the perceived response of the other person)? Is there a relationship between prayer and empathy that is not explained by mindfulness? For the two components of this research question, spirituality was operationally defined as the score on the Spiritual Transcendence scale of the ASPIRES. Prayer was originally operationally defined as the score on the Prayer Fulfillment subscale of the Spiritual Transcendence scale of the ASPIRES, with an additional analysis looking more specifically at relational prayer using only the Prayer Focus items. Empathy was operationally defined as the composite score on the Empathy Assessment Index (EAI). Mindfulness maintained its previous operational definition from research question one. Two hypotheses were proposed based on prior research concerning mindfulness and prayer.

Hypothesis 2.1. Recent research on neural development (Siegel, 2010a) has indicated that mindfulness should serve as a predictor for empathy. Similarly, research would suggest that the development of meaning and connection through prayer may also stimulate the development of empathy (see Hardy et al, 2012). It is hypothesized that both mindfulness and prayer will each serve as significant predictors for empathy. This was measured by examining the correlation between scores on the FFMQ, the ASPIRES, and the EAI. This would indicate that both the practice of mindfulness and

the practice of prayer could serve to promote empathy development in individuals. It is further hypothesized that a person's satisfaction with their prayer life will be a significant predictor of empathy. This was measured by examining the contribution of the Prayer Fulfillment subscale to the r^2 variance of the Spiritual Transcendence scale of the ASPIRES. This would indicate that having a satisfying prayer life contributes to greater levels of empathy and potentially prosocial involvement. It is an important distinction to make as the Spiritual Transcendence scale contains two other subscales unrelated to prayer, which is the focus of the current research.

Hypothesis 2.2. It is hypothesized that relational prayer will serve as a better predictor for empathy than one's sense of prayer fulfillment alone. Relational prayer was operationally defined as the score on Prayer Focus items, chosen from the ASPIRES based on a theoretical assumption of an underlying focus on prayer as relationship with God. This would indicate that relational prayer could serve a unique role above and beyond prayer satisfaction in promoting empathy development.

Research Question Three

Are the relationships between spirituality (specifically, relational prayer), mindfulness, and empathy mediated by the focus one places on interpersonal relationships? For this research question, relational prayer was operationally defined as the summed score from the Prayer Focus items. Interpersonal focus was operationally defined as the score on the Relational-Interdependent Self-Construal scale [RISC]. Spirituality, mindfulness, and empathy maintained their previous operational definitions. Two hypotheses were proposed.

Hypothesis 3.1. It is hypothesized that a mediating variable of the value placed on close interpersonal relationships will demonstrate significant positive relationship with spirituality and prayer but not with mindfulness and lead to a greater predictive power of empathy in a path analysis. This was measured by examining the correlation between scores on the RISC and scores on the ASPIRES and the FFMQ, along with a path analysis using these measures as exogenous variables and the EAI as the endogenous variable. This would indicate that spirituality involves a relational focus not found in common practices of mindfulness alone. Furthermore, it is hypothesized that the Prayer Fulfillment subscale will provide a significant portion of the variance contributed by the Spiritual Transcendence scale in the mediation. This would indicate that some portion of the empathic response derived from one's prayer life is interpersonal in nature.

Hypothesis 3.2. It is hypothesized that the relationship between relational prayer, as measured by the Prayer Focus items (see Table 15), and empathy, as measured by the EAI, will demonstrate significant mediation by the value one places on interpersonal relationships, as measured by the RISC. This would indicate that the individuals who develop a relational prayer life and develop empathy through it likely value interpersonal relationships and form their identity through interpersonal relationship more so than those who do not. That, in turn, may imply a stronger sense of personal identity founded in and with God.

Chapter 4: Methods

Participants

Participants of an age older than 18 were recruited to participate in an Internet-based survey on "mindfulness and spirituality" via email and social media using a snowball sampling method (i.e., respondents were asked to forward the survey link to other potential participants; no compensation was given for forwarding the survey link). The initial recruitment of participants was targeted at three populations: individuals more likely to engage in mindful activities (e.g., yoga groups, mindfulness seminar attendees, etc.), individuals more likely to engage in Christian relational prayer (i.e., churches), and a more general population to increase random sampling for generalization and factor analysis purposes (e.g., college mass email system, social media, etc.). Participants were informed that they had the opportunity, upon completion of the survey, to enter a drawing to win a $25 gift card. The informed consent noted that one gift card would be raffled for every 100 participants.

A minimum of 600 participants was sought based on research on optimal sample size for factor analyses as well as a power analysis for the path analyses. Concerning optimal sampling size for factor analyses, there are two categories of general recommendations: some advocate focusing on the absolute number of cases, while others focus on the subject-to-variable ratio (for reviews of these recommendations, see Arrindell & van der Ende, 1985; MacCullum, Widaman, Zhang, & Hong, 1999; and Velicer & Fava, 1998). The general recommendations range from absolute minimum sample sizes of 100 to 500 participants, or subject-to-variable ratios of 2:1 to 20:1. As the current study will involve a factor analysis of 74 items, a sample size of 600 was

chosen as it can be randomly divided into two groups of 300, each group meeting general criteria for recommended ratios between 3:1 and 6:1 (Cattell, 1978) as well as a "good" absolute minimal sample size of 300 (MacCullum, Widaman, Zhang, & Hong, p. 84). For the path analyses, an *a priori* power analysis (linear regression, fixed model, with an R^2 increase) with an estimated effect size of 0.35 and an acceptable alpha level of 0.05 and power level 0.95 was conducted, suggesting a minimum sample size of 54.

The final sample was comprised of 648 completed surveys out of a total of 786 participants. Of the individuals who initiated the survey, 138 of the 786 did not complete it and were not included in the final sample. Due to the online nature of the survey, participants were forced to answer every item to continue, indicating that the 138 individuals abandoned the survey. As the measures in the study were not randomized in the order of their presentation, the points at which participants abandoned the survey were analyzed for patterns. Of the 786 participants who consented to the study, 27 (3.4%) did not complete the demographic questions; of the remaining 759 participants, 75 (9.9%) did not complete the first measure (the Five Facet Mindfulness Questionnaire); of the remaining 684 participants, 16 (2.3%) did not complete the second measure (the Assessment of Spirituality and Religious Sentiments Scale); of the remaining 668 participants, 13 (1.9%) did not complete the third measure (the Empathy Assessment Index); finally, of the remaining 655 participants, 7 (1.1%) did not complete the fourth measure (the Relational-Interdependent Self-Construal scale). Thus, the largest points of abandonment of the study were at the beginning prior to completing any of the actual measures (102 participants out of a total of 138 who abandoned the study, accounting for 73.9% of the abandoned cases). Comparisons were

also made between the demographic information on the individuals who discontinued the survey and the individuals who completed it; no significant differences in any domain were noted between the two groups. As only completed surveys were allowed in the analyzed sample, there was no missing data for which to account during analysis.

Within the final sample, there were 463 females (71.5%), 182 males (28.1%), and 3 individuals who identified as "Other" (0.5%). Age was measured in categories based on the age demographics question of one of the measures used in the study to ensure consistency with the original measure; the categories ranged from 18-24 (49.1%), 24-34 (21.6%), 35-44 (10%), 45-54 (9.3%), 55-64 (6.8%), 65-74 (2.8%), 75-84 (0.3%), and 85 or older (0.2%). The majority of participants indicated they had some college or higher in education (91.5%), reported being Caucasian/White (80.4%), and identified as Christian (63.7%). For complete demographic variables, see Table 1.

Regarding involvement in meditation, the majority of the participants reported they engaged in meditation at least once or twice per year (61.4%). Specifically, 250 participants (38.6%) indicated they never meditated, 74 participants (11.4%) indicated they meditated once or twice per year, 65 participants (10%) indicated they meditated several times per year, 35 participants (5.4%) indicated they meditated about once per month, 47 participants (7.3%) indicated they meditated 2-3 times per month, 64 participants (9.9%) indicated they meditated nearly every week, and 113 participants (17.4%) indicated they meditated several times a week.

Procedure

The study was reviewed and approved by the University of Oklahoma Institutional Review Board (IRB #6675). Data collection took place via a secure web-based server, Qualtrix, provided by the University of Oklahoma, which housed the survey instruments. To access the survey instruments, participants followed a link provided to them via email and digital recruitment documents. Participants actively indicated that they had read a research information sheet and consented to participate prior to beginning the study. If participants did not consent or indicated that they were younger than 18 years of age, they were thanked for their time and dismissed from the study. The survey took approximately 15 minutes to complete and it was set up in such a way that items could not be skipped, but participants were free to quit at any time.

Participants completed several demographics questions, the Five-Facet Mindfulness Questionnaire [FFMQ], the Assessment of Spirituality and Religious Sentiments scale [ASPIRES], the Empathy Assessment Index scale [EAI], and the Relational-Interdependent Self-Construal Scale [RISC]. Each measure maintained its internal structure within the amalgamated survey. After completion of all survey items, participants were invited to leave the survey by clicking a secure link to enter their email address for the $25 gift card drawing. This was done to separate any identifying information from survey responses.

Instrumentation

Five-Facet Mindfulness Questionnaire (FFMQ). The FFMQ, developed by Baer et al. (2006), arose from an extensive analysis of the facet structure of the mindfulness construct. At the time of its creation, mindfulness had been operationalized

differently across multiple self-report questionnaires. Baer et al. examined the psychometric characteristics of the available mindfulness measures, including the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003), the Freiburg Mindfulness Inventory (FMI; Buchheld, Grossman, & Walach, 2001), the Kentucky Inventory of Mindfulness Skills (KIMS; Baer, Smith, & Allen, 2004), the Cognitive and Affective Mindfulness Scale (CAMS; Feldman, Hayes, Kumar, & Greeson, 2004; Feldman, Hayes, Kumar, Greeson, & Laurenceau, 2007), and the Mindfulness Questionnaire (MQ; Chadwick, Hember, Mead, Lilley, & Dagnan, 2005; Chadwick et al., 2008). These questionnaires were combined into a single data set and analyzed via an exploratory factor analysis to examine the underlying factor structure. The results indicated five distinct factors that uniquely contribute to the current conceptualization of mindfulness.

The five distinct factors make up the subscales of the FFMQ. They include: Observing of Sensations, Perceptions, Thoughts, and Feelings [Observing]; Descriptive Expression [Describing]; Acting with Awareness [Awareness]; Non-judgment of Inner Experiences [Non-judgment]; and Non-reactivity to Inner Experience [Non-reactivity]. Observing is defined as "attending to or noticing internal and external stimuli, such as sensations, emotions, cognitions, sights, sounds, and smells" (Carmody & Baer, 2008, p.24). Describing is defined as "noting or mentally labeling [observed] stimuli with words" (p.24). Awareness is defined as "attending to one's current actions, as opposed to behaving automatically or absent-mindedly" (p.24). Non-judgment is defined as "refraining from evaluation of one's sensations, cognitions, and emotions" (p.24). Non-reactivity is defined as "allowing thoughts and feelings to come and go, without

attention getting caught up in them" (p.24). These five factors reflect a common definition of mindfulness as put forward in the *Clinical Handbook of Mindfulness* (Didonna, 2008): "[focused attention] opened to admit whatever enters experience, while at the same time, a stance of kindly curiosity [that] allows the person to investigate whatever appears, without falling prey to automatic judgments or reactivity," (Segal, Williams, & Teasdale, 2002, pp. 322-323). The instrument will be scored electronically to collect a sum mindfulness score as well as the individual subscale scores.

It should be noted that Baer et al. (2006) found that the Observing factor did not contribute significantly to the overall mindfulness construct in populations inexperienced in meditation, indicating that a four-factor model was a better measurement of mindfulness in those without meditation experience. However, Observing did make a significant contribution to mindfulness in participants who had meditation experience. This was further studied and validated by de Bruin et al. (2012), who found that those new to mindfulness actually demonstrated a positive correlation between mental distress/anxiety and self-observation, whereas those experienced in mindfulness training demonstrated a negative correlation between the two. The Observing subscale remains in the FFMQ due to the theoretical significance of self-observation to mindfulness and because it serves as a means of measuring one's experience with mindfulness practices.

The FFMQ measures the five facets of mindfulness using a total of 39 items with a 5-point Likert-type scale for each item (1=*never or rarely true,* 5=*very often or always true*). The FFMQ consistently demonstrates high overall levels of internal

consistency between .85 and .90; on the facet level, the internal consistency generally falls between the following ranges: Observing, .70 to .75; Describing, .80 to .86; Acting, .81 to .86; Nonjudging, .85 to .89; Nonreactive, .71 to .83 (see Baer et al., 2008; Cebolla et al., 2012; Christopher et al., 2012; de Bruin et al., 2012; Deng et al., 2011; Lilja et al., 2011). In the current study, Cronbach's alpha was measured to assess the internal consistency of the measure for the present analysis. The overall FFMQ composite demonstrated high reliability ($\alpha = .894$). The individual facets also demonstrated good reliability: Observing, $\alpha = .805$; Describing, $\alpha = .895$; Acting, $\alpha = .872$, Nonjudging, $\alpha = .907$, Nonreactive, $\alpha = .815$.

The FFMQ was chosen for the current research due to the in-depth nature of its construct validity research. The FFMQ was created using other major mindfulness assessments and was further validated by measuring its correlation with various measures of personality and psychological symptoms associated with mindfulness. It demonstrated positive correlations, significant at the $p < .001$ level, with measures of openness to experience ($r = .42$), emotional intelligence ($r = .60$), and self-compassion ($r = .53$); it demonstrated equally significant negative correlations with measures of alexithymia ($r = -.68$), dissociation ($r = -.62$), absent-mindedness ($r = -.61$), psychological symptoms of depression and anxiety ($r = -.50$), neuroticism ($r = -.55$), thought suppression ($r = -.56$), difficulties with emotional regulation ($r = -.52$), and experiential avoidance ($r = -.49$) (Baer et al., 2006). It has also been validated in studies comparing meditating and non-meditating populations with various levels of wellness and psychological symptoms (e.g., Baer et al., 2008; Carmody & Baer, 2008).

The Assessment of Spirituality and Religious Sentiments scale (ASPIRES). The ASPIRES, developed by Piedmont (2004), measures two major dimensions of spirituality, religious sentiments and spiritual transcendence. The religious sentiments dimension is divided into two subscales: *religious involvement*, which "reflects how actively involved a person is in performing various religious rituals and activities" (Piedmont, 2012, p. 105); and *religious crisis,* which examines the "problems, difficulties, or conflicts with the God of his or her understanding and/or faith community" (p. 105). The spiritual transcendence dimension is divided into three subscales: *prayer fulfillment,* the "ability to create a personal space that enables one to feel a positive connection to some larger reality" (p. 105); *universality,* the "belief in a larger meaning and purpose to life" (p. 105); and *connectedness,* which measures "feelings of belonging and responsibility to a larger human reality that cuts across generations and groups" (p. 105).

The ASPIRES is a development of the Spiritual Transcendence Scale (Piedmont, 1999), which was expanded upon and incorporated into the spiritual transcendence dimension of the ASPIRES along with the newly added religious sentiments dimension. The final measure was created with the assistance of a consortium composed of theological experts from diverse faith traditions, including Buddhism, Catholicism, Hinduism, Lutheranism, Judaism, Quakerism, and others (see Piedmont, 1999, 2001, for reviews of this focus group). The final ASPIRES was designed to identify one's religious *sentiment* and one's spiritual *motive.* As explained by Piedmont (2012), the term *sentiment* refers to "emotional tendencies that develop out of social traditions and educational experiences" (p. 107) and the term *motive* refers to

an inherent, intrinsic source of motivation from "nonspecific affect forces that drive, direct, and select behavior" (p. 107).

Both subscales of the ASPIRES have multiple studies confirming high levels of validity and reliability. For an extensive review of this research, see Piedmont (2012), as well as Brown, Chen, Gehlert, and Piedmont (2012), Piedmont et al. (2008), and Piedmont, Werdel, and Fernando (2009). In summary, the internal consistency tends to fall between .41 to .84 on test-retest with self-report and observer report (two-tailed, $p < .001$). In the current study, Cronbach's alpha was measured to assess the internal consistency of the measure for the present analysis. The overall ASPIRES composite demonstrated high reliability ($\alpha = .913$). The two facet scales and the individual subscales within those facets were also measured and most demonstrated good reliability: Religious Sentiments facet, $\alpha = .791$; Religiosity, $\alpha = .925$; Religious Crisis, $\alpha = .729$; Spiritual Transcendence facet, $\alpha = .898$; Prayer Fulfillment, $\alpha = .943$; Universality, $\alpha = .772$. Only the Connectedness subscale did not display adequate reliability ($\alpha = .542$). In the subsequent factor analyses, it was eventually removed from the analyses because of poor factor loading, likely due to its poor internal consistency.

The entire assessment was given to participants and used in analysis, but one particular subscale of the ASPIRES is of particular interest, the *prayer fulfillment* subscale, due to its measurement of relational closeness. This scale in particular shows good internal consistency in test-retest ($r = .69$) and strong discriminant validity when compared to the components of the Five Factor Model of Personality (see Piedmont, 2005). However, it shows weak to moderate individual construct validity when compared to various positive psychosocial outcomes (e.g. purpose in life, $r = .38$;

satisfaction with life, r = .28; prosocial behavior, r = .13). Looking at prosocial behavior in particular, as measurements of empathy were not used for construct validity, it is unfortunate that *prayer fulfillment* accounted for only slightly less than 2% of the variance despite it being highly significant ($p < .01$). However, it should be noted that these correlations and variance measures come from a hierarchical regression analysis where they were input on the third step, after demographic variables and personality variables from the Five Factor Model. Thus, these values are likely low due to there being minimal remaining variance left to explain the criteria.

A review of the Prayer Focus items, selected to better represent a relational dynamic to prayer as discussed and analyzed in the research questions, is provided at this time. This subset of items from the ASPIRES was constructed using all items of the Prayer Fulfillment subscale of the Spiritual Transcendence facet scale and items 3, 5, 6, 7, 8, and 12 from the Religious Sentiments facet scale (see Table 15). The Prayer Fulfillment subscale was chosen due its focus on prayer and attitudes toward prayer, whereas the other two subscales of the Spiritual Transcendence facet deal more with beliefs about universal truths and feeling connected to other people (not God). The items from the Religious Sentiments facet scale were chosen for similar reasons: Item 3 asks how often participants pray; Item 5 inquires of the extent that participants feel a "personal, unique, close relationship with God"; Item 6 asks about personal experiences where a "union with God" was felt; Item 7 asks about the importance of religious beliefs; Item 8 asks if religious interest has increased or decreased in the past year; and Item 12 measures the willingness participants have to involve God in their life decisions, potentially reflecting an ongoing relationship that is consulted on a regular

basis. The rest of the Religious Sentiments facet scale was omitted in order to (as clearly as possible) specify activities and experiences that are directly related to relational aspects of religion rather than regular involvement in organized religious activities (such as going to church, reading the Bible, etc.). In other words, individuals who view their faith as a relationship may likely engage in organized religious activities, but many individuals who engage in organized religious activities may not necessarily view their faith as a relationship; the items were selected in an attempt to minimize this potential confounding factor. The term Prayer Focus was chosen by the current researcher to distinguish these items from the subscales originally designated by Piedmont (2004). In the current study, Cronbach's alpha was measured to assess the internal consistency of the Prayer Focus items for the present analysis. The overall Prayer Focus items demonstrated high reliability ($\alpha = .955$).

Empathy Assessment Index scale (EAI). This assessment, developed by Gerdes, Lietz, and Segal (2011), measures both emotional and cognitive empathy using an operational definition rooted in social cognitive neuroscience and developmental psychology. It is the only assessment to date that has utilized the latest social cognitive neuroscience of empathy in its development and is based on the idea that observable brain activity can be linked to specific components of empathy (Decety & Jackson, 2004). The EAI measures five components of empathy: affective response, affective mentalizing, self-other awareness, perspective taking, and emotion regulation. Each of these components is measured using four to five items each with a 6-point Likert-type scale ranging from never to always.

The EAI provides operational definitions for the five components of empathy that it assesses. Affective response refers to the activation of neurological pathways that simulate the physiological experiences of others, also known as mirroring (Jacoboni, 2008). This process is generally unconscious, automatic, and involuntary, and is measured within the EAI by assessing common emotional responses to emotion in others (e.g., "When I see someone being publicly embarrassed I cringe a little"). Affective mentalizing refers to the mirroring process that takes place when we are exposed to stories and begin to mentalize, or imagine, a picture of the events as we hear them. Even without direct exposure to the emotional expression of another person, this mental imagining of another's experience can trigger an effective or physiological response and helps us to develop a perception of the other's experience (Frith & Frith, 2006). This is measured within the EAI by assessing the ability to understand another's emotional experience without necessarily utilizing perspective-taking (e.g., "When I see a person experiencing a strong emotion, I can describe what the person is feeling to someone else"). Self-other awareness refers to the ability to differentiate between our own experiences and the experiences of others that are physiologically mirrored. This awareness moves empathic responding from a purely emotional state to the cognitive (or conscious) arena. This is measured within the EAI by assessing the conscious differentiation of one's own emotions and those of another (e.g., "I can tell the difference between my friend's feelings and my own"). Perspective-taking refers to the cognitive processing of what it might be like to personally experience the experiences of others. This is measured within the EAI by assessing the tendency to contemplate the experiences of others (e.g., "I consider other people's points of view in discussions").

Finally, emotional regulation refers to the ability to experience emotions without becoming overwhelmed, which is particularly important when the mirroring process engages as others display intense emotional experiences. This is measured within the EAI by assessing how easy or difficult it is to manage emotional experiences (e.g., "When I get angry, I need a lot of time to get over it," reverse scored).

Though this scale is still relatively new and is currently undergoing validity and reliability confirmation, most studies have reported an internal consistency ranging from .64 to .83 and test-retest reliability from .74 to .85 using factor analysis (Gerdes, Lietz, & Segal, 2011). In the current study, Cronbach's alpha was measured to assess the internal consistency of the measure for the present analysis. The overall EAI composite demonstrated high reliability ($\alpha = .877$). The individual facets demonstrated good reliability for the most part, with two facets scoring below acceptable standards ($\alpha < .7$): Affective Response, $\alpha = .693$; Affective Mentalizing, $\alpha = .828$; Self-Other Awareness, $\alpha = .671$, Perspective-Taking, $\alpha = .778$, Emotion Regulation, $\alpha = .748$.

As a measure of construct validity, the EAI scale has shown moderate to high correlations with the Interpersonal Reactivity Index (.48 - .75), moderate correlations with the Cognitive Emotion Regulation questionnaire (.49 - .51) and the Mindful Attention Awareness Scale (-.27 to -.44) (Gerdes, Lietz, & Segal, 2011; Gerdes et al., 2012; Lietz et al., 2011). Additional studies were performed to improve chosen items and eliminate redundant items and items that did not make a significant contribution to factor analyses (see Lietz et al., 2011), eventually reducing the EAI from a 54-item measure to a 22-item measure. The revised measure was validated using groups thought to have lower levels of empathy, such as inmates of violent crimes, and groups thought

to have higher levels of empathy, such as professional social work providers, which confirmed the criterion validity of the EAI (Gerdes et al., 2012). Overall, the EAI has been validated over the course of four years with eight different studies using more than 3,500 participants.

Relational-Interdependent Self-Construal scale [RISC]. The RISC, developed by Cross, Bacon, and Morris (2000), measures self-identity in terms of relationships with others. It was formed in the process of developing a theoretical counter to the independent self-construal, which is the idea that a person is essentially separate from others and impacted by external independent others, both singularly (e.g., friendships, family members) and in groups (e.g., social groups, cultures) (Markus & Kitayama, 1991). In contrast, the interdependent self-construal refers to the idea that a person is essentially connected to others and is defined, at least in part, by important roles, group memberships, and relationships. The items of the RISC were formed based on these self-construal theories, viewing them as two orthogonal, continuous dimensions rather than binary types or positions on a singular scale of one's self-construal. The RISC was intended to provide a better measure of the interdependent self-construal as seen in western, individualistic societies as most theories and measures relied heavily on eastern, collectivistic societies. For this reason, the *relational* aspect was added to demonstrate how western individuals form their interdependent self-construal primarily through personal relationships rather than group or collectivistic relationships. It is the RISC's focus on personal relationships and identity that make the RISC useful to the current study.

The original psychometric properties of the RISC showed strong reliability and validity (Cross, Bacon, & Morris, 2000). The coefficient alpha across eight samples of participants (N = 4,288) was .88 and the inter-item correlations ranged from .25 to .66 with a mean of .41. Test-retest reliability with a two-month interval ranged between .63 and .73 (considering only correlations with $p < .001$). Cronbach's alpha was measured to assess the internal consistency of the measure for the present analysis. The RISC demonstrated high reliability ($\alpha = .895$).

Convergent validity was tested by correlating the RISC with numerous measures of collectivism and interdependence (.31 to .56), individualism and independence (-.06 to .08), personality (agreeableness, .35; extraversion, .28; conscientiousness, .23; neuroticism, .08; openness to experience, .09), empathy (.13 to .34), well-being (.01 to .17), and close relationships (.11 to .27).

A follow-up study (Cross, Morris, & Gore, 2002) found that high scores on the RISC were associated with better memory for and implicit organization of relational information and thus useful as a measure of relationship cognition (a finding repeated in Cross & Morris, 2003). This suggests that individuals with high relational self-construal are attuned to relationships and may be more likely to report experiencing a personal relationship with God. An interesting finding in a study by Terzino and Cross (2008) found that individuals who score high on the RISC were more likely to self-disclose, forgive, and form strong commitments to others, all important behaviors commonly associated with Christian prayer and relationship with God. Cross (2009) discussed how those with high RISC scores tend to identify with others more strongly and integrate their interests into their own lives, leading to higher integration of the other individual's

identity with their own self-identity. This may be important to empathy development through relational prayer as well, given a study by Hardy, Walker, Rackham, and Olsen (2012) that demonstrated moral identity to be positively correlated with empathy and positive social interactions. The current study examined the correlation of the RISC with prayer fulfillment and utilized the RISC as a covariate to explore the potential contribution to empathy development of the value one places on relationships and its effect on the quality of relationship one feels with God.

Design

Preliminary Transformations

Prior to testing the hypotheses for the three research questions, all items designated as in need of reverse-scoring prior to summation were recoded in SPSS. In addition, all of the items for the Religious Crisis subscale of the Religious Sentiments scale of the ASPIRES were reverse-scored and recoded in SPSS. This was done so that all scales of the ASPIRES represented a positive relationship with spirituality and religion for ease of comparison, whereas in the original measure the Religious Crisis scale is the only scale weighted in the opposite direction to the others. This procedure was suggested in Piedmont (2004) if a total Religious Sentiments score is needed. Only the recoded scales were used in the study analyses.

Concerning Assumptions of the Analyses

Prior to testing the hypotheses for the three research questions, the assumptions underlying the chosen statistical techniques were tested. The techniques used in the study include exploratory factor analysis [EFA] and two versions of structural equation modeling [SEM]: confirmatory factor analysis [CFA] and path analysis. The

assumptions of EFA include adequate sample size, metric variables, normality, linearity, and factorability (Costello & Osborne, 2005). The main statistical assumptions of SEM are multivariate normality and sufficient sample size (Statistics Solutions, 2013).

Exploratory factor analysis assumptions. The first assumption for EFA is adequate sample size. A maximum of 74 items were used in the EFAs within the current study. As previously discussed, Cattell (1978) suggest a general ratio of between 3:1 and 6:1 to meet this assumption. As approximately 300 participants were used for each analysis, the ratio for the current study was approximately 4:1, meeting the suggested criteria. The sample size also meets the criteria of a "good" absolute minimal sample of 300 (MacCullum, Widaman, Zhang, & Hong, p. 84).

The second assumption for EFA is the use of metric variables. Ideally, variables should be interval or ratio. However, ordinal variables such as are generally used in Likert-type research are acceptable as long as they have a minimum of six options on the scale (Costello & Osborne, 2005). The current study uses items measured via Likert-type scales ranging from six to eight options.

The third assumption for EFA is normality, the assumption that the distribution of the data is normally distributed with a symmetric bell-shaped curve. Univariate normality was assessed by conducting a test of skewness and kurtosis for each variable. West, Finch, and Curran (1995) proposed an absolute value of skewness being less than 2 (less than 1 ideal) and an absolute value of kurtosis being less than 4 (less than 2 ideal) as the standard for normality. The normality tests involving absolute z-scores of skewness and kurtosis, Shapiro-Wilk and Kolmogorov-Smirnov, were not used as these

tests are sensitive to the size of the sample and not recommended in large sample sizes due to small deviations from normality causing the statistic to be reported as significantly nonnormal (Field, 2013; Kim, 2013). Histograms for each measure were also examined to verify the conclusions drawn from the skewness and kurtosis measurements. Concerning outliers, data falling three standard errors from the mean was considered to be an outlier (Hahs-Vaughn & Lomax, 2012). As error in data entry was not a concern due to electronic data collection and data was gathered using Likert-like scales with variation no greater than eight on any one item, any outliers were likely important representations of the sample. Thus, it would not be theoretically sound to simply remove these outliers (Orr, Sackett, & DuBois, 1991). Instead, outliers were allowed to remain in the data analysis due to the relative robustness of the Maximum Likelihood method with nonnormal data (Diamantopoulos, Siguaw, & Siguaw, 2000; Fuller & Hemmerle, 1966).

The fourth assumption of EFA is linearity, the assumption that the variables have a linear relationship with each other. This was assessed using the Means function of SPSS, inputting the variables of the FFMQ as dependents and the variables of the ASPIRES as the independents. The only information used from these tests was the Deviation from Linearity statistic provided in the ANOVA table. With this analysis, significant results indicate failure to meet the assumption of linearity.

The fifth assumption of EFA is factorability, which measures the suitability of the data for factor analysis. This was tested using Bartlett's test for sphericity and a KMO test of sampling adequacy in SPSS. Bartlett's test for sphericity checks to make sure that the EFA does not contain an identity matrix ($p < .05$ to meet the assumption),

while the KMO test indicates a high degree of common variance (values above .6 are considered acceptable, though the closer to 1.0, the better) (Costello & Osborne, 2005).

Structural equation modeling assumptions. The assumption for multivariate normality was assessed using AMOS. Multivariate kurtosis was assessed using *Mardia's coefficient* and the critical ratio values displayed in the AMOS output (Arbuckle, 2011; Schumacker & Lomax, 2004). Critical ratio values greater than 1.96 indicate significant non-normality via kurtosis. Multivariate skew was assessed in a similar fashion, with critical ratio values greater than 1.96 indicating significant non-normality via skew. Multivariate outliers were assessed using the *Malanobis d-squared distance* in the AMOS output, which provides p-values for the distance from the centroid for each observation. Significant p-values are likely to be outliers. Ordinal items, such as used in the current study, tend to cause the assumption of multivariate normality to be violated (Timmerman & Lorenzo-Seva, 2011); this tends to cause an underestimation of the strength of relationships between the ordinal items and subsequently, slightly biased factor loadings (Bernstein & Teng, 1989; Olsson, 1979).

Violations of multivariate normality are important to SEM but methods have been developed to assist in the analysis of multivariate nonnormal data. Some researchers suggest not worrying about nonnormality in the social sciences as several studies have shown that most data using structural equation modeling in the social sciences is nonnormal (Barnes, Cote, Cudeck, & Malthouse, 2001; Bentler & Chou, 1987). Reinartz, Haenlein, and Henseler (2009) found no major differences in terms of SEM analysis results using ML estimation on samples of different sizes and with different kurtosis and skewness levels. However, it is becoming increasingly common

in the social science fields to utilize bootstrapping to deal with violations of normality (Preacher & Hayes, 2004). Bootstrapping is a resampling method that creates a sampling distribution to estimate standard errors and create confidence intervals, generated from the original sample of participants. The resampling method of bootstrapping has more accurate Type I error rates and power than single sample methods and has been demonstrated to aid SEM analyses with nonnormal data (Cheung & Lau, 2008), especially in analyses with a sample size greater than 200 (Nevitt & Hancock, 2001). The basic form of bootstrapping is generally referred to as *naïve bootstrapping* and it is primarily used to confirm mediation analyses (see the discussion of the methodology for Research Questions Two and Three below). Bollen-Stine bootstrapping was used to assess model fit with nonnormal data, as one cannot use the ML chi-square statistic with nonnormal data as it will likely be inflated. Bollen and Stine (1992) showed that the naïve bootstrap is inappropriate for assessing model fit because the bootstrap samples are drawn from a data matrix that is inconsistent with the assumptions, leading to the need for a bootstrap procedure that transforms the raw data matrix such that the covariance structure matches that of the model-implied matrix. The Bollen-Stine bootstrap can provide the correct p-values for the chi-square statistic to assess overall model fit, providing a better model fit estimation than the rescaled chi-square statistic (Yuan & Bentler, 2000) and a comparable model fit estimation with the Satorra-Bentler chi-square adjustment using a considerably smaller sample size (Bollen & Long, 1993). Nevitt and Hancock suggested performing 2000 bootstraps in AMOS to adjust the chi-square value and standard error to help adjust for any nonnormality,

aiming for a p-value above .05 as is the traditional cut-off for the chi-square p-value, so this number of bootstraps was used to correct for nonnormal data.

Regarding the assumption of sufficient sample sizes, CFA follows the same general rules of thumb described in the previous discussion of EFA. Additionally, the minimum suggested by many researchers for SEM path analysis is 200 (Statistics Solutions, 2013). The current study meets all criteria for sample size.

Research Question One

The first research question was assessed using a factor analysis of the items from the FFMQ and ASPIRES. Factor analysis was selected over a principle components analysis because the current research is aimed at testing a theoretical model of latent factors (i.e., the five factors of mindfulness along with a relational prayer factor) causing the arrangement of the observed variables (Comrey, 1988). Due to the number of participants in the study, it was decided to split the data randomly into two halves so that both exploratory and confirmatory factor analysis could be run to increase the power of the analyses. Participants were assigned a random number between 0 and 2 using SPSS; all participants randomly assigned a number between 0 and 1 were assigned to the Exploratory Factor Analysis group (EFAG, n=320) and all participants randomly assigned a number between 1 and 2 were assigned to the Confirmatory Factor Analysis group (CFAG, n=328).

Descriptive statistics were gathered for both the EFAG and the CFAG in order to ensure no significant differences between the two groups. No significant differences were found between the two groups for any of the demographic variables. Additionally, no significant differences were found between either of the two groups and the total

sample for any of the demographic variables. The demographic information for the EFAG and the CFAG can be found in Table 1.

SPSS was used with Maximum Likelihood method of extraction for all EFAs ran in the study. Additionally, all EFAs utilized an oblique rotation (in SPSS, oblimin with Kaiser normalization) due to the assumption that the variables and factors were related. This was verified using bivariate correlation analysis. Extracted factors were chosen based on specific hypotheses, eigenvalues greater than 2, and analysis of the scree plot (Cattell, 1966).

Once the initial EFAs were run, the data was trimmed using statistical guidelines and theory to remove items that weakened the measurement of the underlying factors, while maintaining the items that contributed in a meaningful way based on the hypotheses and theories behind the measurements. Researchers tend to suggest five criteria for selecting items in EFA: communality, primary factor loading, item cross-loading, meaningful and useful contribution to a factor (i.e., face validity), and internal consistency (Fabrigar, Wegener, MacCallum, & Strahan, 1999; Tabachnick & Fidell, 2001). Criteria for adequate communality ranges from 0.35 for sample sizes of at least 250 but less than 350 (Hair et al., 1998), to a general suggestion of at least 0.5, or as high as 0.7 (MacCallum et al., 1999, 2001). Hair et al. also provide rules of thumb for assessing practical significance on the primary factor loading, with sample sizes of 300+ requiring a minimum of 0.35. However, Guadagnoli and Velicer (1988) suggested that a factor only be considered reliable if it has four or more loadings of at least 0.6 regardless of sample size, and Stevens (1992) suggested using a minimum cut-off of 0.4 for reliable interpretation regardless of sample size. For the purposes of this study, these

suggestions were used in conjunction with subjective analysis of meaningful and useful contribution to the factors/underlying theory resulting in the following cut-offs for the data: extracted communalities of 0.35 or greater, with preference given to communalities of 0.4 or greater; at least 4 variables loading at 0.6 or higher for each factor; for the purposes of interpretation, coefficients were suppressed below an absolute value of 0.4.

The confirmatory factor analyses were conducted using the Standard Equation Modeling of AMOS. The results of the initial exploratory factor analyses with the EFAG were used to organize the data with the CFAG. In CFA, fit indices indicate the extent to which the covariances among the variables are accounted for by the proposed factor model. Numerous fit indices are used in the field. The suggestions made by Hair et al. (2010) and Hu and Bentler (1999) were followed in the current research. They suggest the traditional fit index, chi-square, not be used as it is heavily affected by sample size and model size, though they suggest it still be reported for comparison and replicability purposes. See Table 7 for suggested fit indices and their corresponding threshold rules of thumb.

Research Questions Two and Three

The four hypotheses within research questions two and three were tested using path analysis in AMOS. Path analysis was chosen over standard multiple regression analysis to reduce the number of individual analyses and thus reduce the likelihood of error. Three models were chosen for the analyses based on the hypotheses. Hypotheses 2.1 and 3.1 were tested using a model composed of the full composite scores of the FFMQ, the Spiritual Transcendence facet [STF] and the Religious Sentiments facet

[RSF] of the ASPIRES, and the EAI, with the single scale of the RISC added as a mediator to the analysis. This was done to get a holistic picture of the complete constructs and their relationship with empathy. A preliminary correlation was conducted between the predictor variables (not counting the RISC) to determine covariance between them for the path analysis. Hypotheses 2.2 and 3.2 were tested using a model composed of the subscales for each of the included measures (i.e., the five factors of the FFMQ, the three factors of the STF, the two factors of the RSF, and the five factors of the EAI). This was done to allow for examination of the individual components of the scales to more closely identify what factors influence empathy development. Finally, hypotheses 2.3 and 3.3 were tested using a model composed of the five factors of the FFMQ alongside the relational prayer factor constructed during exploratory factor analysis while working on research question one. The aim with this model was to further delineate relational prayer and its effects on empathy development from general spiritual or religious involvement.

It should be noted that naïve bootstrapping was used for all of the path analysis models. As previously mentioned, naïve bootstrapping allows for more accurate Type I error rates and power (Cheung & Lau, 2008) by providing more accurate confidence intervals and standard error estimates. Two thousand iterations were used in the bootstrapping analysis, as suggested by Nevitt and Hancock (2001).

Chapter 5: Results

The purpose of this study was to examine the relationships between mindfulness, relational prayer fulfillment, and empathy. Specifically, the study was divided into two parts. The first part of this study examined the underlying factor structure of current methods of measuring mindfulness and spirituality in combination. The second part of this study examined whether the value one places on relationships, operationalized as the relational-interdependent self-construal, mediates the relations between mindfulness, prayer fulfillment, and empathy. Numerous past studies have found a relationship between mindfulness and empathy, but fewer studies have linked prayer and empathy. The current study aimed to examine the influence of both constructs on empathy together in one model with additional consideration of self-identity in terms of interpersonal relationships.

Three research questions were constructed to study this research purpose:

1. Does spirituality (or relational prayer) add a unique relational factor to the practice of mindfulness?
2. Does involvement in spirituality (specifically, relational prayer) and mindfulness predict one's developmental level of empathy? Is there a relationship between relational prayer and empathy that is not explained by mindfulness?
3. Are the relationships between spirituality (specifically, relational prayer), mindfulness, and empathy mediated by the focus one places on interpersonal relationships?

Results for this study are described and presented in the following order: First, information is provided on the assessment of the assumptions for univariate normality

and linearity, both underlying assumptions for the chosen statistical methods. (The assessment of multivariate normality is provided within the sections specifically pertaining to SEM.) Next, results are presented by research question and hypotheses, with exploratory and confirmatory factor analyses for research question 1 and path analyses for research questions 2 and 3.

Assessing the Underlying Statistical Assumptions

Univariate Normality

The composite mindfulness score from the FFMQ for the participants ranged from 76 to 177 with an average score of 130.16 (*SD* = 17.46) and normal distribution across scores (skewness = .023, kurtosis = -.008). On the Nonreactivity subscale, the scores ranged from 7 to 35 with an average score of 22.03 (*SD* = 4.58) and normal distribution across scores (skewness = -.121, kurtosis = .200). On the Nonjudging subscale, the scores ranged from 8 to 40 with an average score of 25.80 (*SD* = 6.91) and normal distribution across scores (skewness = -.133, kurtosis = -.448). On the Acting with Awareness subscale, the scores ranged from 10 to 40 with an average score of 26.06 (*SD* = 5.46) and normal distribution across scores (skewness = -.282, kurtosis = -.112). On the Describe subscale, the scores ranged from 9 to 40 with an average score of 28.53 (*SD* = 5.88) and normal distribution across scores (skewness = -.267, kurtosis = -.293). On the Observe subscale, the scores ranged from 11 to 40 with an average score of 27.73 (*SD* = 5.42) and normal distribution across scores (skewness = -.337, kurtosis = .039).

Two composite scores are calculated for the ASPIRES, one measuring religious sentiments and one measuring spiritual transcendence. One of the subscales of the

Religious Sentiments scale, the Religious Crisis subscale, was recoded to reflect a positive relationship with religious sentiments rather than a negative relationship (i.e., higher scores reflect a lack of religious crisis). The recoded composite score for the Religious Sentiments scale for the participants ranged from 19 to 69 with an average score of 45.48 (*SD* = 14.19) and normal distribution across scores (skewness = -.081, kurtosis = -1.290). On the Religiosity subscale, the scores ranged from 8 to 49 with an average score of 29.16 (*SD* = 12.33) and normal distribution across scores (skewness = -.058, kurtosis = -1.341). On the Religious Crisis subscale, the scores ranged from 4 to 20 with an average score of 16.33 (*SD* = 3.20) and normal distribution across scores (skewness = -.638, kurtosis = -.301). The composite score for the Spiritual Transcendence scale for the participants ranged from 37 to 111 with an average score of 83.86 (*SD* = 15.32) and normal distribution across scores (skewness = -.709, kurtosis = .011). On the Prayer Fulfillment subscale, the scores ranged from 10 to 50 with an average score of 36.13 (*SD* = 10.47) and normal distribution across scores (skewness = -.689, kurtosis = -.432). On the Universality subscale, the scores ranged from 9 to 35 with an average score of 26.44 (*SD* = 4.98) and normal distribution across scores (skewness = -.639, kurtosis = .300). On the Connectedness subscale, the scores ranged from 8 to 30 with an average score of 21.28 (*SD* = 3.87) and normal distribution across scores (skewness = -.420, kurtosis = .043).

The composite empathy score from the EAI for the participants ranged from 51 to 130 with an average score of 98.60 (*SD* = 12.61) and normal distribution across scores (skewness = -.388, kurtosis = .250). On the Emotion Regulation subscale, the scores ranged from 4 to 24 with an average score of 16.31 (*SD* = 3.51) and normal

distribution across scores (skewness = -.429, kurtosis = .200). On the Perspective-Taking subscale, the scores ranged from 11 to 30 with an average score of 22.95 (*SD* = 3.74) and normal distribution across scores (skewness = -.303, kurtosis = -.354). On the Self-Other Awareness subscale, the scores ranged from 7 to 24 with an average score of 17.72 (*SD* = 3.03) and normal distribution across scores (skewness = -.314, kurtosis = -.027). On the Affective Mentalizing subscale, the scores ranged from 7 to 24 with an average score of 17.69 (*SD* = 3.32) and normal distribution across scores (skewness = -.373, kurtosis = -.164). On the Affective Response subscale, the scores ranged from 8 to 30 with an average score of 23.92 (*SD* = 3.80) and normal distribution across scores (skewness = -.596, kurtosis = .393).

Only one score is provided for the RISC as it has no subscales and is a direct measure of relational-interdependent self-construal. The scores for the RISC for the participants ranged from 25 to 77 with an average score of 58.45 (*SD* = 10.52) and normal distribution across scores (skewness = -.626, kurtosis = .144).

Linearity

Linearity is an important assumption for both factor analysis and regression models. The Deviation from Linearity statistic was used to assess for the assumption of linearity within the variables used in the analyses and scatter plots were used to examine the variables that approached significance of the deviation statistic. Due to the sheer number of deviation statistics that were calculated, the individual p-values are not included in the results. The composite scales for each of the measures are included, along with a summary of the linearity of the individual items with each other. The FFMQ Mindfulness composite scores were linear with the ASPIRES Religious

Sentiments scale (p = .137), the ASPIRES Spiritual Transendence scale (p = .063), and the EAI Empathy composite scale (p = .929). Individually, the five subscales of the FFMQ displayed linearity with all of the subscales of the ASPIRES and the EAI with two exceptions: the Describe subscale and the Nonreact subscale displayed significant deviation from linearity with the Prayer Fulfillment subscale and the Universality subscale. An examination of the scatter plots for these relationships indicated that a few outliers were to blame for the deviation. The ASPIRES Religious Sentiments composite scores were barely linear with the EAI Empathy composite scale (p = .052). Oddly, the deviation statistic displayed a significant deviation from linearity between the Religious Sentiments scale and the Spiritual Transcendence scale (p = .003), but the scatter plot revealed a strong linear relationship. Finally, the ASPIRES Spiritual Transcendence scores were found to have a significant deviation from linearity in relationship with the EAI Empathy composite scale (p = .011). An examination of the scatter plot of this relationship revealed a number of outliers as the likely cause for the deviation. Unfortunately, these failures to meet the assumption of linearity were not noticed until the end of the analysis and write-up; as such, they are addressed more fully in the Limitations section of the Discussion.

Research Questions and Hypotheses

Research Question One

The first research question inquired if the FFMQ and the ASPIRES were based on similar, underlying factors of mindfulness with an additional relational factor for prayer fulfillment. Multiple hypotheses were tested within this research question using exploratory factor analysis and confirmatory factor analysis.

Part 1A: Exploratory factor analyses for the FFMQ and the ASPIRES. It was thought that the items of the FFMQ and the ASPIRES would blend in a way that essentially maintained the factors of the FFMQ (i.e., some items of the ASPIRES would load with the factors of the FFMQ) with an additional factor based on a relational dynamic of spirituality/prayer. The data from the Exploratory Factor Analysis Group was used for the analyses. All items from the FFMQ and all items from the Spiritual Transcendence subscale [ST] of the ASPIRES were initially used for the analysis. Extraction was based on eigenvalues greater than 1 and the scree plot was used to determine significant factor loadings. The initial analysis extracted 13 factors with an eigenvalue greater than 1, accounting for 55.87% of the variance. However, the scree plot indicated 7 significant factors, all above an eigenvalue of 2 and accounting for 48.02% of the variance. An additional EFA was conducted forcing seven factors to be extracted. At this point, the data was trimmed of items with poor communality (<0.35) and that did not load significantly (<0.4) on any factor. The following items were removed in order: ST7, ST13, ST22, ST23, ST14, ST10, ST9, ST6, FFMQ6, FFMQ26, FFMQ11, FFMQ36, FFMQ24. This eliminated the Connectedness subscale of the ST (ST items 7, 9, 10, 14, 22, 23); two items from the Universality subscale of the ST (ST items 6, 13); four items from the Observe subscale of the FFMQ (FFMQ items 6, 11, 26, 36); and one item from the Nonreactivity subscale of the FFMQ (FFMQ item 24). The resulting model maintained 7 factors using the scree plot method, all but one of them with eigenvalues above 2, which explained 55.39% of the variance (see Table 2). The lowest factor loading was 0.539 (on Factor 3) and the highest factor loading was

0.870 (on Factor 1). The structure of the model was mostly simple, with only a few items cross-loading in a manner predictable by the original measures.

Concerning assumptions for the EFA, the KMO measure was 0.882 and Bartlett's Test of Sphericity was significant ($p < .001$), indicating a high degree of common variance and confirming that the EFA did not contain an identity matrix. The chi-square goodness of fit test was significant (chi-square = 1439.45, $df = 854$, $p < .001$), which would normally indicate poor goodness-of-fit of the factors with the variance-covariance matrix. However, the chi-square goodness of fit test is susceptible to large sample sizes, particularly sample sizes above 300, causing even small discrepancies between the model and the data to result in significance and subsequent rejection of the model (Hakstian, Rogers, & Cattell, 1982; Harris & Harris, 1971; Humphreys & Montanelli, 1975). Instead, the confirmatory factor analysis was used to better measure goodness-of-fit (see below).

A bivariate correlation was conducted on the extracted factor scores to see if the factors were significantly related. The factors were strongly correlated within their original measure; that is, most of the five factors of mindfulness showed significant correlation with each other (the only exception was Observe, which did not correlate with Describe or Acting with Awareness) as did the two factors from the ASPIRES. The results indicated weak but significant correlation between some factors of mindfulness and the two remaining factors of spirituality. Prayer Fulfillment was significantly correlated with the Describe factor from the FFMQ ($r = .121$, $p < .05$) and Universality was significantly correlated with the Describe factor ($r = .149$, $p < .01$) and

the Observe factor ($r = .140$, $p < .05$) from the FFMQ. The complete correlation matrix can be seen in Table 3.

Part 1B: Exploratory factor analyses for the FFMQ and the Prayer Focus items. It was thought that the FFMQ and specific items from the ASPIRES, selected based on a theoretical assumption of an underlying focus on prayer and relationship with God (see Table 15), would create a 6-factor model in which the original FFMQ factors remain relatively intact but correlate with a sixth factor reflecting relational prayer, a construct not otherwise directly measured by the ASPIRES.

The data from the Exploratory Factor Analysis Group was used for the analyses. Once the items were selected, initial extraction was based on eigenvalues greater than 1 and the scree plot was used to determine significant factor loadings. The initial analysis extracted 9 factors with an eigenvalue greater than 1, accounting for 57.31% of the variance. However, the scree plot indicated 7 significant factors accounting for 54.83% of the variance. An additional EFA was conducted forcing seven factors to be extracted. At this point, the data was trimmed of items with poor communality (<0.35) and that did not load significantly (<0.4) on any factor. The following items were removed in order: FFMQ6, FFMQ11, FFMQ24, FFMQ26. This eliminated three items from the Observe subscale of the FFMQ (FFMQ items 6, 11, 26); and one item from the Nonreactivity subscale of the FFMQ (FFMQ item 24). The resulting model maintained 7 factors using the scree plot method, all but one of them with eigenvalues above 2, which explained 57.19% of the variance (see Table 4). The lowest factor loading was 0.481 (on Factor 5) and the highest factor loading was 0.938 (on Factor 1). The structure of the model was simple concerning the factors from the FFMQ and complex

concerning the factors of the ASPIRES, as they were highly related; the factor correlation matrix listed Factors 1 and 7 with a correlation of -.643, just under the absolute value 0.7 limit (Tabachnick & Fidell, 2001). Factors 1 and 7 were both composed of the items taken from the ASPIRES. Factor 1 (composed of items 3, 5, 6, 7, and 8 from the Religious Sentiments scale, item 12 from the Religious Crisis scale, and items 2, 11, and 21 from the Prayer Fulfillment scale) was tentatively named Relational Prayer, following the original hypothesis. Factor 7 (composed of items 1, 4, 8, 12, 17, 18, and 19 from the Prayer Fulfillment scale) was tentatively named Self-Focused Prayer; the full interpretation of the two factors and the reasoning behind the names is provided in the Discussion. Interestingly, Factor 7 (Self-Focused Prayer) displayed only negative factor loadings, but the decision was made to reverse the direction of the factor vectors as this does not change the factor itself (Child, 2006).

Concerning assumptions for the EFA, the KMO measure was 0.905 and Bartlett's Test of Sphericity was significant ($p < .001$), indicating a high degree of common variance and confirming that the EFA did not contain an identity matrix. The chi-square goodness of fit test was significant (chi-square = 1691.41, $df = 1028$, $p < .001$), but as mentioned previously, the confirmatory factor analysis was used to better measure goodness-of-fit (see below) due to issues with sample size.

A bivariate correlation was conducted on the extracted factor scores to see if the factors were significantly related. As in the previous factor analysis, the factors were strongly correlated within their original measure; the only nonsignificant correlations within the FFMQ were between Observe—Describe and Observe—Acting with Awareness, while both the prayer factors were strongly correlated. Most of the five

factors of mindfulness showed significant correlation with each other as did the two factors from the ASPIRES. Looking at factor correlations between the FFMQ and the ASPIRES, the Self-Focused Prayer factor demonstrated a small but significant correlation with Describe ($r = .115$, $p < .05$). The Relational Prayer factor did not correlate significantly with any of the factors from the FFMQ. The complete correlation matrix can be seen in Table 5.

Summary of Part One. An examination of the final factor structure and correlation from Part 1A reveals that the variables from the two measures did not blend into five factors representing spiritual mindfulness and one factor representing relational prayer. Rather, the original variables remained intact (aside from a few items dropped due to low commonality). However, the resulting seven factors did demonstrate significant correlation between the original measures, indicating the factors are not entirely independent. Due to the fact that only two of the five FFMQ factors correlated with the factors from the ASPIRES and that the correlations were very low in strength, it is likely that the overall mindfulness score would not correlate with the two factors from the ASPIRES. An examination of the final factor structure from Part 1B reveals that the variables remained intact across the original factors of the FFMQ, but the chosen items from the ASPIRES divided into two factors, neither matching the original factor structure of the subtests from which they were taken. The factors were minimally correlated between original measures.

Part 2: Confirmatory factor analyses. The purpose of the confirmatory factor analyses was to use CFA to investigate the replicability of the results from the prior exploratory factor analyses using an independent sample. In addition, the analyses were

used to examine which of the two CFA models better fit the data from the second half of the data split (Confirmatory Factor Analysis Group). The results of the two alternative factor structures are summarized in Table 6, including original model fit and adjusted model fit using the Bollen-Stipe bootstrapping.

First, the seven-factor model from Part 1A using the FFMQ and the majority of items from the Spiritual Transcendence scale was tested. The fit of this model was good but not great (CMIN/DF = 1.783; GFI = .803; AFGI = .782; NFI = .804; RFI = .791; IFI = .903; TLI = .896; CFI = .902; RMSEA = .049; PCLOSE = .688). Assumptions for multivariate normality were violated for many of the individual items; while kurtosis was relatively low for most variables, a significant portion of the variables demonstrated significant negative skew. This was likely due to face validity and subsequent response bias during administration of the surveys. There was also indication of a common latent factor influencing the variance of the factor loadings. Specifically, one of the eight items of the Nonjudge factor, six of the eight items of the Describe factor, and three of the eight items of the Acting with Awareness factor had greater than 0.2 of their estimate explained by the common latent factor. This would indicate that something external to the measures, typically a systematic response bias or similar collective bias introduced in the process of data collection, may have influenced the responses given (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). It implies that the fit may be worse than reported by the AMOS output.

Next, the seven-factor model from Part 1B using the FFMQ and the Prayer Focus items was tested. The fit of the model was better than the previous model but still had a few issues (CMIN/DF = 1.662; GFI = .800; AFGI = .779; NFI = .830; RFI = .819;

IFI = .924; TLI = .919; CFI = .924; RMSEA = .045; PCLOSE = .994). Assumptions for multivariate normality were violated for many of the individual items in a fashion similar to the previous model, with mild violation of kurtosis and moderate negative skew. A common latent factor analysis could not be performed due to issues with AMOS, but it is likely that similar concerns from the previous model are present in the current model due to the common data set between them. A comparison of the models from Part 1A and 1B can be seen in Table 6.

In summary, the results of the confirmatory factor analyses support the models found in the exploratory factor analyses. The model from Part 1B using relational prayer and self-focused prayer fit slightly better than the model from Part 1A using the full subscales of the FFMQ and ASPIRES.

Research Questions Two and Three

The second and third research questions involved examining the relationship between spirituality, mindfulness, and empathy via regression and the mediating effect of the degree that one forms their personal identity through interpersonal relationships. Multiple hypotheses were tested within this research question using three separate path analyses.

Path Analysis One—Full Composites. A preliminary correlation analysis was conducted between the composite score for mindfulness of the FFMQ, the composite score for spiritual transcendence of the ASPIRES, the composite score for religious sentiments of the ASPIRES, and the RISC to help with construction of the path analysis. The results of the analysis, detailed in Table 8, found no significant correlation

between the FFMQ and the RISC (r=-.044, p=.262). All other measures were significantly correlated ($p < .01$).

Path Analysis One can be seen in Figure 1. As the correlation between the FFMQ and the RISC was insignificant, the RISC was not measured as a mediator for the FFMQ. The FFMQ total demonstrated the greatest amount of direct variance with the EAI total (r^2=.51, p<.01). The direct effect of spiritual transcendence on the EAI total was also significant, though with a much weaker magnitude of variance (r^2=.16, p<.01). The mediation was confirmed using the confidence intervals found via bootstrapping, following the rule of thumb that if the lower bound and upper bound cross 0 on the indirect effects of the exogenous variables and the mediator, there is no significant mediation effect (Cheung & Lau, 2008). The RISC variable did appear to mediate both the spiritual transcendence measure (r^2=.36, p<.01, 95%) and the religious sentiments measure. (r^2=-.14, p=.011).

The model created a total effect of spiritual transcendence on the EAI equaling an r^2 of .239. The model as a whole accounted for only 7.6% of the variance for the RISC and 34.3% of the variance for the EAI. This was the first indication that the RISC serves as a fairly weak mediator, a finding repeated in the further analyses. Nonetheless, the model fit indices indicated a good fit (CMIN/DF = 3.699; GFI = .998; AFGI = .966; NFI = .996; RFI = .955; IFI = .997; TLI = .967; CFI = .997; RMSEA = .065; PCLOSE = .258). It should be noted that the model was very nearly saturated, with only one degree of freedom. Table 14 contains the fit indices of the model along with the fit indices of each of the other models measured for research questions two and three for comparison purposes. Thus, Path Analysis One confirmed that both mindfulness and

spirituality serve as significant predictors of empathy. However, mindfulness contributed a great deal more predictive power than spirituality, and prayer fulfillment did not contribute significantly to empathy at all. The results also indicate a moderate mediation between spirituality as a whole and empathy by the relational self-construal.

Path Analysis Two – Subscales. Due to the size and complexity of the path analysis model, two preliminary correlation matrices were conducted. The first correlation analysis examined the relationships between the exogenous variables (i.e., the subscales of the ASPIRES and FFMQ). The results of this analysis, detailed in Table 9, were used to set the covariance between the exogenous variables within the path analysis. The second correlation analysis examined the relationships between the exogenous variables and the endogenous variables (i.e., the RISC and the subscales of the EAI). The results of this analysis, detailed in Table 10, were used to set the covariance between the final endogenous variables (i.e. the subscales of the EAI) and to aid in placement of the paths between the exogenous and endogenous variables within the path analysis to reduce unnecessary complexity of the model. Whereas in the correlation matrix for Path Analysis One, the FFMQ total composite for mindfulness did not significantly correlate with the RISC, two of the subscales (Observe, $r = .099$, $p < .01$; Nonjudge, $r = -.120$, $p < .01$) of the FFMQ displayed significant relationship with the RISC in the correlation matrix for Path Analysis Two. All of the subscales for the ASPIRES displayed significant relationship with the RISC.

The model paths between the exogenous and endogenous variables and the covariate relationships between the exogenous variables and the endogenous variables were based on the preliminary correlations. However, a few of the path estimates were

not found to be significant despite the univariate correlations. The path analysis was run a second time with the nonsignificant paths removed. The resulting models for both path analyses were rather messy due to the numerous exogenous variables (10 total) and endogenous variables (6 total). Thus, rather than display the path models, the standardized estimates for both models can be found in Table 11. A comparison of the model fit for both models (with and without the nonsignificant estimates) can be found in Table 12. While both models met the fit criteria outside of the pure chi-square value, the model with the nonsignificant estimates removed was a better fit and was included in the full model fit comparison in Table 14. Looking at that model, total variance explained for each endogenous variable was fairly small, though significant. The model accounted for 12.7% of the RISC, 43.5% of EAI Emotion Regulation, 26.6% of EAI Perspective-Taking, 32.2% of EAI Self-Other Awareness, 27% of EA Affective Mentalizing, and 23.7% of EAI Affective Response. Notably for the hypothesis, Prayer Fulfillment did not significantly predict any of the empathy subscales via direct path nor did it significantly predict the RISC.

Before moving on to the final hypothesized model, an alternative model was examined collapsing the subscales of the EAI together into their composite score again while maintaining the individual subscales for the exogenous variables. This was done to provide explanatory power for the individual exogenous subscale's power to predict empathy as a whole rather than its subcomponents. The resulting path model can be found in Figure 2. The model fit for this alternative model was included in Table 14. The model accounted for 12.7% of the RISC and 39.1% of the EAI. In this model, FFMQ Nonjudge no longer significantly predicted the EAI total ($r^2 = .074$, $p = .247$),

though it did maintain a significant negative relationship with the RISC (r^2 = -.132, p < .001). Prayer Fulfillment continued to be nonsignificant in relation to both the RISC (r^2 = .44, p =.550) and the EAI (r^2 = -.032, p = .664).

In summary, the individual facets of mindfulness continued to be the best predictors of empathy, while the individual components of spirituality continued to be weaker or insignificant predictors of empathy. The relational self-construal displayed a weak but significant mediation effect between the components of spirituality and empathy. Interestingly, some negative mediation by the relational self-construal occurred between the facets of mindfulness and empathy, indicating that self-identifying in a more communal sense (as opposed to a more independent sense) actually makes it more difficult to reach empathy through mindfulness for at least the nonjudgment facet.

Path Analysis Three – Relational Prayer. The original methodology for the third path analysis involved using the full FFMQ composite with the new variable, named Relational Prayer, formed during the investigation of Research Question One. However, two variables were discovered during that analysis rather than just one, as the Prayer Fulfillment subtest split into two factors: the Relational Prayer factor and the Self-Focused Prayer factor. Both of these factors were entered into the path analysis as exogenous variables along with the five subscales of the FFMQ; the RISC and the full EAI composite were entered as the endogenous variables.

A preliminary correlation analyses was conducted on the exogenous and endogenous variables to aid with the construction of the path analysis models. The correlation matrix for this analysis can be seen in Table 13. The resulting path analysis

model used the significant correlations to form the exogenous covariances and indirect paths through the mediator, as they were aligned with the model hypothesis. The nonsignificant paths, which included both the direct and indirect paths for Self-Focused Prayer, the direct path for Relational Prayer, and the direct path for FFMQ Acting with Awareness, were dropped from the final version of the model (see Figure 3). Curiously, FFMQ Nonjudge was a significant predictor of the EAI total ($r^2 = .085$, $p = .003$), unlike in Path Analysis Two. A significant estimate was found for the relationship between Relational Prayer and the RISC ($r^2 = .147$, $p < .001$) but there was no significant direct effect; the indirect effect size of Relational Prayer through the RISC on the EAI was also very small, though significant, at only 3.3% of the variance. As mentioned previously, Self-Focused Prayer was not a significant predictor for either the RISC or the EAI. The model fit the data well (see Table 14). However, this model accounted for the least amount of the variance for the RISC at only 4.3%. It remained fairly consistent in accounting for the variance for the EAI at 37.1%.

In conclusion, Path Analysis Three revealed the relationship between relational prayer and empathy to be completely mediated by the relational self-construal. The indirect effect was still very weak, however, indicating that relational prayer as measured by the ASPIRES does not predict empathy development. Mindfulness continued to remain consistent in its predictive relationship with empathy, while self-focused prayer did not predict empathy either directly or indirectly via the mediator.

Chapter 6: Discussion

The purpose of the current research was to explore the concept of relational prayer, to provide evidence for a distinction between relational prayer and mindfulness, and to examine the relationship between relational prayer, mindfulness, and empathy development. Relational prayer was theoretically explained as meditative prayer in which a person attempts to relate to and feels a personal connection with God; an attempt to operationalize relational prayer was done using scores on specific items of the ASPIRES, referred to by the researcher as the Prayer Focus items. Mindfulness was theoretically defined as a combination of multiple psychological processes, creating the ability to observe one's internal and external world without judgment or emotional reaction and to then act using this awareness; mindfulness was operationally defined as the composite score on the five individual factors making up the FFMQ. Finally, empathy was theoretically defined as the ability to perceive another person's emotional experience through a combination of physiological mirroring and cognitive perspective-taking, without becoming overwhelmed or confusing one's own affective response with the perceived response of the other person; empathy was operationally defined as the composite score on the five individual factors of the EAI.

As empathy involves both cognitively and affectively relating to another individual with awareness and regulation of one's own emotions, it would appear to have direct links with a relational view of spirituality and mindful awareness. While numerous research studies have demonstrated a link between mindfulness and empathy, very few have examined the relationship between spirituality and empathy, and no research could be found that attempted to directly link relational meditative spirituality

and empathy (despite philosophical and theological assumptions in numerous writings that purport the relationship exists). Thus, the current exploration hoped to provide some evidence that relational prayer contributed to the development of empathy beyond the effect that mindfulness has already demonstrated. Unfortunately, the results of this study do not lend strong support for this assertion, though some significance was found.

Research Question One

As reported in the results section, the Spiritual Transcendence subscale of the ASPIRES did not combine in any meaningful way with the items of the FFMQ when put together in a factor analysis. In fact, when all of the items from the subscales for each of the measures were entered into analysis, the components of the measures held together in their original factors. While some of the items within the three subscales of the Spiritual Transcendence scale did cross-load with each other, this aligned with aim of the author of the ASPIRES who confirmed that the factors are theoretically related (Piedmont, 2012). This means the original idea that the measures would combine to reflect a degree of mindfulness within the measure of spirituality must be rejected. Rather, the measures maintained their original factor structure and were largely independent of each other, with the two measures being weakly correlated through the Describe subscale of the FFMQ.

Two potential explanations for these findings are proposed: the concepts of spirituality do not involve the same processes as mindfulness and the underlying factors are fundamentally different; or the way spirituality is measured by the Spiritual Transcendence scale—via prayer fulfillment, spiritual universality, and spiritual connectedness—does not reflect the meditative, relational spirituality that the author

was intending to capture. A simple correlation analysis between scores on the Spiritual Transcendence scale and time spent meditating as reported by the participants found a weak relationship between the two ($r = .392$, $p < .001$), further indicating that an alternative method for assessing meditative prayer may be necessary.

The final examination of the underlying factors within the two measures was conducted using theory-driven selection of items from the ASPIRES, resulting in the Prayer Focus items. The items from the Prayer Fulfillment subscale were chosen as Prayer Focus items due to the definition of the scale as provided by Piedmont (2012): the "ability to create a personal space that enables one to feel a positive connection to some larger reality" (p. 105). Additional items from the Religious Sentiments scale that were believed to reflect an individual focus on prayer and spiritual relationship with God were added to the analysis, including the following questions:

- How often do you pray?
- To what extent do you have a personal, unique, close relationship with God?
- How often do you have experiences where you feel a union with God and gain spiritual truth?
- How important to you are your religious beliefs?
- Over the past 12 months, have your religious interests and involvements increased, decreased, or stayed the same?
- I find myself unable, or unwilling, to involve God in the decisions I make about my life. (reverse-scored)

The results partially supported the original predictions that the items of the FFMQ would remain true to their original factor structure, the selected items of the ASPIRES

would not form their original factor structure but would rather restructure into a new factor reflecting relational prayer, and that the final rotated factor matrix would demonstrate covariance between the final factors. The items of the FFMQ did maintain their original factor structure. However, the selected items from the ASPIRES neither maintained their original factor structure nor coalesced into one new factor; the selected items unexpectedly formed two new factors that were highly correlated but separate. The decision was made to define the first factor as Relational Prayer due to the focus on relationship and connection reflected in the items, which included (listed in descending order of the strength of their factor loading):

- To what extent do you have a personal, unique, close relationship with God?
- How often do you have experiences where you feel a union with God and gain spiritual truth?
- How often do you pray?
- I want to grow closer to the God of my understanding.
- How important to you are your religious beliefs?
- Spirituality is not a central part of my life. (reverse-scored)
- I do not feel a connection to some larger Being or Reality. (reverse-scored)
- I find myself unable, or unwilling, to involve God in the decisions I make about my life. (reverse-scored)
- Over the past 12 months, have your religious interests and involvements increased, decreased, or stayed the same?

The second factor was defined as Self-Focused Prayer, a counterpoint to Relational or God-focused prayer. In the original EFA, the factor loadings for Self-Focused Prayer

were all negative, indicating the original factor may have represented an absence of prayer focused on the self or perhaps a state of unfulfillment with prayers about the self. However, the decision was made to reverse the signs for the factor, as this made interpretation easier and changing the direction of the factor vectors does not change the size or relationship of the factor with the items (Child, 2006). Ultimately, the name Self-Focused Prayer was selected due to the focus on personal growth and comfort inherent in the items, which included (listed in descending order of the strength of their factor loading):

- My prayers and/or meditations provide me with a sense of emotional support.
- I find inner strength and/or peace from my prayers and/or meditations.
- I meditate and/or pray so that I can grow as a person.
- Prayer and/or meditation does not hold much appeal to me. (reverse-scored)
- In the quiet of my prayers and/or meditations, I find a sense of wholeness.
- I meditate and/or pray so that I can reach a higher spiritual level.
- I have not experienced deep fulfillment and bliss through my prayers and/or meditations. (reverse-scored)

This distinction between Relational Prayer and Self-Focused prayer within the data is an unexpected yet interesting discovery. Clearly the concepts behind them go hand-in-hand, as both lend themselves to a sense of fulfillment in one's prayer life. Yet the distinction implies that one is driven by a desire to encounter a God or Person beyond the self (e.g., to "feel a union," "feel a connection," "grow closer," to develop a "personal, unique, close relationship"), while the other is driven by a desire to grow individually, perhaps to overcome trials or personal shortcomings, and, perhaps, to

become more accepting of the self (e.g., to "find inner strength [and] peace", "grow as a person," "find a sense of wholeness," "reach a higher spiritual level," or find "emotional support"). This distinction is reminiscent of fundamental variations made in theology for centuries.

For example, Tillich (1952) famously made the assertion that there are three main existential struggles that humankind has dealt with: the "courage to be as a part" (p. 86), the "courage to be as oneself" (p. 113), and the "courage to accept acceptance" or "the courage to be" (p. 155/171). These three struggles correspond with three historical directions in Christian beliefs: a focus on giving up of the self to be a part of a larger level of truth and meaning (e.g., the Roman-Catholic church), a focus on accepting the self to reach "higher" or "deeper" levels of truth and meaning (e.g., mysticism), and a third focus that subsumes the two former paths to focus solely on one's relationship with God as a person (e.g., the Protestant Reformation) and, in doing so, let go of the individual self and deeply affirm it at the same time (or, as Tillich describes it, "one can become confident about one's existence only after ceasing to base one's confidence on oneself" which is done through an "encounter with God as person," p. 163). Using Tillich's terminology, those who focus on Self-Focused Prayer may be struggling with the "courage to be as oneself." Those who focus on Relational Prayer may be struggling with the "courage to accept acceptance." Although outside the scope of the present research, it may even suggest that those who focus on Universality or Connectedness may be struggling with the "courage to be as a part."

Another example of this form of distinction within the history of Christianity can be found in the theological divide between Pelagius and Augustine (see Newell,

1997). Pelagius purported that the underlying nature of humankind was good, but corrupted by sin. In this view, salvation came through cleansing of one's nature through Christ and spiritual practices focused on self-examination and self-acceptance as a means of discovering the divine nature within. Conversely, Augustine purported the idea that sin was transmitted through the generations via sex, leading to the notion that man is "totally depraved" (p. 204). In this view, salvation came through destruction of the former self and replacement with something entirely new and divine in Christ and spiritual practices focused on understanding the new nature and manhood of Christ and relying on the divine relationship for atonement. Looking at these conflicting views, one can draw parallels between Pelagius's theology and Self-Focused Prayer, and between Augustine's theology and Relational Prayer.

The distinction between Relational Prayer and Self-Focused Prayer also aligns with the ideas of spiritual formation (Piippo, 2016; Willard, 1999) and the sociological Relational Prayer theory (Baesler, Lindvall, & Lauricella, 2011), which state that individuals may initially seek prayers focused on petitioning for their own needs and improving their personal traits and behaviors, before eventually settling into more contemplative prayers focused on listening to God and relating to the Holy Spirit. This follows the path set forth by Nouwen, Christensen, and Laird (2010) that states prayer is fundamentally about an "inward journey to the heart" (i.e., self-focused prayer) leading to and "outward journey to community" (i.e., relational prayer) (p. 26).

It is not the author's goal to make a statement about value or assert that any of these struggles or directions or views is better or preferred to the others, but rather to demonstrate that the distinction found in the study between Relational Prayer and Self-

Focused Prayer may be reflective of larger processes discussed by theologians, active in the worldviews of people alive today, and represented in the views of the population sampled for the study. It is worth noting that of the two confirmatory analyses conducted in the study, the second model utilizing the FFMQ with the factors of Relational Prayer and Self-Focused Prayer demonstrated a slightly better fit than the first model. This is not to suggest that the original factor structure of the measures of the FFMQ and ASPIRES is incorrect, but rather to suggest that there may be more going on than what is assessed by these instruments and to open up an avenue for future research.

Research Questions Two and Three

Hypotheses 2.1 and 3.1

The testing of the hypotheses surrounding research questions two and three involved a series of both exciting and disappointing steps. Path Analysis One confirmed the findings of previous research that mindfulness serves as a significant predictor of empathy. The link between spirituality and empathy was heavily mediated by the degree to which one defines the self in terms of interpersonal relationships, with nearly three-fourths of the variance shared by spirituality with the model being used in connection with the mediator rather than the criterion variable. It was not complete mediation, however, as there was a significant direct effect of spirituality on empathy, albeit a considerably weaker one than mindfulness. As predicted, the mindfulness composite was not at all influenced by the mediator, having only a very small and insignificant negative correlation.

One conclusion drawn from the data is that spirituality, taken as a whole of the three components measured by the Spiritual Transcendence scale, does promote a small

degree of empathy development in individuals, but not to the degree promoted by mindfulness. Another conclusion drawn from the data is that at least a portion of empathic responding that stems from spirituality is accounted for by one's view of the self in relation to others. However, clear statements cannot be made about the underlying mechanisms involved until the individual subscales are examined.

The Prayer Fulfillment subscale of the ASPIRES did not contribute a significant amount of variance with any of the EAI subscales (direct effects) or the RISC (indirect effect), thus forcing rejection of the second part of hypotheses 2.1 and 3.1. In fact, Prayer Fulfillment was the only exogenous variable to have zero direct paths to any of the facets of empathy. This finding was certainly unexpected and this author can only speculate as to the reasoning behind the lack of relationship with empathy. One explanation may be linked to the failure of the items of the Prayer Fulfillment scale to correlate with and blend with the items of the FFMQ. It was originally conceived that the items of the Prayer Fulfillment scale would reflect a degree of meditative prayer, but the frequency of meditation showed only mild levels of correlation with the scale ($r = .427$, $p < .001$). Counter to the theory, it may be possible that a sense of personal fulfillment in a general sense in one's prayer life leads to interpersonal contentment or may even be associated with interpersonal isolation, though these seem less likely. It may also simply be that, for some unknown reason, prayer fulfillment is associated with lower levels of mindfulness and empathy.

The final paths of the other exogenous factors made for interesting observations, however. The relationship with the RISC was almost entirely accounted for by the Connectedness scale of the ASPIRES, which makes sense in retrospect as all of the

items deal with interpersonal relationships and their lingering effect even after death, something that someone with an interpersonal self-construct would more readily embody. Connectedness and Universality were also both significant predictors of Perspective-Taking, Affective Mentalizing, and Affective Response, perhaps touching on the tendency towards spiritual community and being a part of something greater than oneself that is common in spiritual practices and demonstrated by Tillich's (1952) "courage to be a part". Whereas in the first path analysis the Religious Sentiments scale demonstrated a negative relationship with empathy, this was explained entirely by the Religiosity subscale, which had a single negative direct effect on Perspective-Taking (the other Religious Sentiments subscale, Religious Crisis, had positive direct effects on Affective Response and Emotion Regulation). This would imply that the more involved a person is in religious practices, the greater the difficulty that person experiences in setting aside their own perspective and taking the perspective of others. It also implies that those who feel a sense of acceptance from God and their faith community (i.e., not in religious crisis) have greater skill in regulating their emotions and attuning with the emotions of others.

Looking at the FFMQ, Nonjudging was only a significant predictor of Emotion Regulation, likely touching on the findings by Siegel (2010b) on self-acceptance and gentleness (i.e., not judging one's self) as necessary prerequisites to empathy. Acting with Awareness predictably predicted Emotion Regulation and Self-Other Awareness; the more able a person is to notice their emotional reactions in the moment and make thoughtful decisions and actions with that information, the more likely they are to be able to manage their emotions and distinguish between their own experiences and the

experiences of others. Nonreactivity had a strong direct effect on Emotion Regulation (as it is obviously easier to regulate an emotional response that you do not react to) and lesser effects on Perspective-Taking, Self-Other Awareness, and Affective Mentalizing. Describe had the largest effect on Self-Other Awareness along with Affective Mentalizing and Perspective-Taking, all of which are cognitive components of empathy, influenced by one of the more cognitive elements of mindfulness. Finally, Observe had decent direct effects on Perspective-Taking, Affective Response, Affective Mentalizing, and Self-Other Awareness, but not Emotion Regulation; this corresponds with the research of Bruin et al. (2012) in that those who struggle with regulating their emotions likely do not benefit from being more aware of (i.e. observing) their unregulated emotions, but increased awareness/observation of others would make it easier to understand what they are going through (perspective-taking), to trigger mirror neurons and affectively atune with them (affective response), and to relate with their experiences on an emotional level (affective mentalizing), while increased awareness/observation of one's own thoughts and emotions would make it easier to differentiate them from thoughts and emotions triggered by others (self-other awareness).

Hypothesis 2.3 and 3.3

It was in Path Analysis Three that the first full mediation occurred. In the original correlation, the Relational Prayer variable significantly correlated (albeit weakly) with the EAI. Once the mediator was applied in the path analysis, however, the only link between Relational Prayer and empathy was through the RISC with a standardized indirect effect of 3.1% of the variance. Thus, despite the best efforts to hand select items based on the concept of relational prayer, it would appear that

relational prayer as measured by the ASPIRES has very little effect size on the development of empathy. The new variable of Self-Focused Prayer had neither direct nor indirect effect on empathy, while the facets of mindfulness largely maintained their previous paths. It would seem that focusing on prayer alone, particularly one's satisfaction of prayer, does not serve to promote empathy development. It may be that the solitude associated with most forms of prayer (excluding the more rare communal prayers) does not lend itself to developing strong interpersonal skills. Alternatively, it may be that one cares less about connecting with others if one feels deeply satisfied with their personal spiritual life, though this would be counter to the beliefs held by most Christians that growing closer to God entails growing in love for one's neighbor. An important distinction may also be found in noting that a focus on meaningful prayer and the satisfaction one takes from one's prayer life are not necessarily the same thing; it is possible to be satisfied with a very transient and impersonal prayer life, or dissatisfied with a very deep and committed prayer life, such as one reflected in the "dark night of the soul" described by St. John of the Cross (see Underhill, 1974) or the abject loneliness of faith described by Lewis (1942) when he stated that an important step in the spiritual relationship between man and God was "when a human, no longer desiring but still intending to do [God's] will, looks around upon a universe in which every trace of Him seems to have vanished, and asks why he has been forsaken, and still obeys" (p. 40). In other words, it seems likely that there are complexities to the relationship between prayer, spiritual satisfaction, mindfulness, and empathy that may not have been adequately represented by the current study.

General Discussion and Review of Research Questions

It is difficult to fully interpret the meaning behind most of the results of the study as they go directly against the hypothesized outcomes. Spirituality does have a significant positive effect on empathy, but it is largely through one's sense of connection with humanity rather than one's sense of connection with God. While the former sense of connection seems obvious, it was not obvious that a similar effect would not be seen for the latter sense of connection.

It is clear that having a relational self-construal plays a significant role in one's level of empathy, and that it mediates the relationship between spirituality and empathy. It is also clear that mindfulness is not significantly related to having a relational self-construal except in a negative fashion. This could imply that mindfulness is more strongly associated with an independent self-construal, as it focuses on personal awareness and often involves long stretches of time in meditation or similar mindfulness practices; alternatively, it could imply that mindfulness is actually independent of one's self-construal, unaffected by the value one places on interpersonal versus independent identity.

There may be some implications for counseling in the current research. The results lend further support to previous literature in indicating mindfulness practices as an effective way to encourage and develop empathy in clients. However, mindfulness practices may be counterindicated for individuals who come from a more communal culture and possess a relational self-construal rather than an independent self-construal; assessing for the source of a client's sense of self-identity may help guide clinicians towards mindful versus spiritual interventions. That being said, it seems unlikely that

focusing on increasing the fulfillment one gets from prayer would lead to empathy either way, but spirituality practices focused on broadening a client's perspective to consider their connection with others and their role in the "bigger picture" of humanity may be beneficial for empathy development.

Research question one, *Does spirituality, as measured by the ASPIRES Spiritual Transcendence scale, add a unique relational factor to the practice of mindfulness, as measured by the FFMQ?*, appears to be false given the data from the current study. The factors of the Spiritual Transcendence scale did not blend with the factors of the FFMQ to represent a joint relationship with mindfulness. However, the items for spirituality did end up forming a unique variable based on relational prayer as well as an unexpected unique variable based on self-focused prayer.

Research question two (which was split into two similar questions), *Does involvement in prayer and mindfulness predict one's level of empathy? Is there a relationship between prayer fulfillment and empathy that is not explained by mindfulness?*, appears to be affirmative given the data from the current study. Mindfulness demonstrated a strong predictive power for empathy and prayer demonstrated a weak predictive power for empathy, mediated through the relational-interdependent self-construal. The overall model was stronger with both elements added, however, than with either element alone. Additionally, the contribution of shared variance by prayer and spirituality was uncorrelated with mindfulness and thus not explained by it.

Research question three, *Are the relationships between relational prayer, mindfulness, and empathy mediated by the value one places on interpersonal*

relationships, as measured by the RISC?, appears to be answered with both yes and no. Relational prayer was completely mediated by the RISC, though the indirect effect was still not large. Mindfulness, on the other hand, had very little mediation by the RISC and the indirect effect was negative.

Limitations

As with any research study, the current investigation was not without limitations. 5 basic limitations are listed here: (a) sample diversity, (b) issues with measures, (c) problems with linearity, (d) problems with nonnormality, and (e) lack of moderation analysis.

Sample Diversity

Unfortunately, sample diversity is a common concern with much social research. The sample used for the current study was found via snowballing, which generally provides a convenience sample that is not always representative of a population as a whole. This can be seen in the demographics information (Table 1), where the majority of respondents were Caucasian, educated, Christian females. Age was slightly better distributed, but nearly 50% of the participants were college age (18-24).

While the current research was not interested in making comparisons between race, educational level, gender, or age, it still did not produce the ethnic or gender diversity that would be desired to make broader generalizations to the population as a whole. Concerning religious belief, intentional effort was made to recruit from the local Christian population, with less effort being made to recruit non-Christians/general populace, so the ratio (7:3) fit well with expectations. In fact, the percentage of atheist/agnostic participants (~28%) provided an unexpected level of diversity, though

this likely caused some normality issues with individual items, particularly on the spiritual transcendence scales. It is also likely that the inclusion of such a high percentage of non-Christians in a study focused on Christian prayer may have muddied the waters to a significant degree, making it more difficult to parcel out true effects and leading to a higher probability of Type II error. Future research should ideally work to find a more inclusive sample focused only on Christians who engage in relational prayer as defined by the current study, rather than using snowballing and sampling from populations that vary in religious approaches.

Issues with Measurements

A few of the subscales of the measures used in the current study displayed less than adequate internal consistency. Connectedness, Affective Response, and Self-Other Awareness all provided Cronbach's alpha scores less than 0.70. This may have led to the poor communalities between items of the Connectedness scale and the exploratory factor analyses. It also means the path loadings in for Affective Response and Self-Other Awareness in Path Analysis Two may need to be interpreted with some caution. However, it is unlikely that the path analyses involving the composite EAI score were affected as the internal consistency for the EAI as a whole was strong.

An additional potential limitation involving the measurements used in the current study concerns the validity of using the ASPIRES to measure the construct of relational prayer. While some evidence was found supporting the notion that the ASPIRES can tap into a relational element of prayer, items that measure fulfillment with one's prayer life may not adequately tap into the degree to which one believes in and values a relational dynamic to one's prayer life. To the author's knowledge, there

are no current published measures of this relational dynamic to prayer. The ASPIRES was partially chosen due to the scarcity of measures examining dynamics of prayer at all, and the Prayer Fulfillment scale seems to come close but not all the way in measuring the construct of relational prayer (or even meditative prayer). For this reason, the results may provide a picture of spirituality and religiosity's relationship with mindfulness and empathy, but may not adequately reflect the degree to which mindfulness and empathy connect with individuals who practice meditative or relationally-focused prayer. Unfortunately, this may require either alternative means of analysis or the development of new scales for measuring prayer.

Problems with Linearity

In the process of investigation, it was discovered that the subscales of the Spiritual Transcendence scale suffered from issues of nonlinearity in relation to the other variables studied. This was partially due to unaccounted-for outliers, but other explanations can also be put forward. While the majority of the sample used for analysis was Christian, a considerable portion identified as atheist or agnostic (28.5%). It is possible that these individuals may have scored highly on measures of meditation, mindfulness, and empathy while collectively scoring low on spirituality-related items, potentially confounding with the other participants who identified as religious (Christian or otherwise) and may have scored highly on spirituality-related items due to face validity and corresponding socially-expected response bias. (An unidentified common latent factor was found during factor analysis.) Regardless of the explanation, the results must be interpreted with caution due to this failure to meet an underlying assumption for the analyses conducted.

Problems with Nonnormality

Similar to the above limitation, the Spiritual Transcendence subscale of the ASPIRES tended to cause the most problems with nonnormality as well. This is likely due to the same reasons as with the problems with linearity—outliers and confounds within the sampled population. While effort was made to correct for issues of skew and kurtosis within the analyses, primarily through the use of robust methods such as the maximum likelihood test statistic, and naïve and Bollen-Stine bootstrapping, there is still considerable chance that underestimation of the factor loadings alongside potential overestimation of the model fit (Bernstein & Teng, 1989; Olsson, 1979).

Lack of Moderation Analysis

A mediation between prayer and empathy via relational-interdependent self-construal was proposed in the current study to examine the mechanism by which prayer might affect empathy. It was expected that relational prayer and mindfulness would strongly correlate and thus a large portion of the variance on empathy would be shared between them (i.e., that mindfulness was one mechanism by which prayer affected empathy). Under this assumption, an additional factor accounting for relational awareness and focus (i.e., relational self-construal) might have helped explain some of the other variance between prayer and empathy not accounted for by mindfulness. The results of the current study indicated that interpersonal self-construal does mediate between spirituality and empathy, but the mediation effect was small. Due to this small size, it may be that having a relational self-construal may moderate the relationship more so than mediate it. A moderator is a variable that affects the direction or strength of the relationship between two other variables (Baron & Kenny, 1986). Using

relational self-construal as a moderator may explain the influence of prayer on empathy better than using relational self-construal as a mediator.

Future Directions

This study may be the first time that the individual facets of mindfulness have been related to the individual facets of empathy, as was done in Path Analysis Two. This could lead to interesting avenues of research looking at ways to influence particular aspects of empathy or delving into the underlying concepts between them for greater understanding of both.

An important follow-up to the current study would involve improving the measures used to assess for relational prayer (and now by extension, self-focused prayer). While the ASPIRES is useful for determining prayer fulfillment in a general sense and admirably relates to people of most major religions due to its inclusive process of creation, it may be too broad to really touch on the Christian relational and meditative forms of prayer originally intended for study in this investigation, such as demonstrated by Nouwen et al. (2010) and Piippo (2016). Along the same lines, an experimental study involving practiced meditation and relational prayer would allow for the control of more variables and perhaps stronger evidence of the concepts. Alternatively, future studies may want to examine relational prayer from one of the other possible connections to empathy as suggested in the literature review, such as measuring attachment, compassion, or forgiveness in relation to prayer involvement and empathy. This may be an indirect way to provide evidence for relational aspects of prayer and empathy.

An interesting potential future area for research could be found in further verifying the existence of the separate concepts of relational prayer and self-focused prayer as found in the factor analysis of this study. Future research could build on the ideas put forward by Tillich (1952) to provide empirical evidence for potential divisions of prayer-style still active in the Christian communities today. Furthermore, the prayer styles may be reflected in religions outside of Christianity and studies examining them in other religious settings could lend support to the idea that they represent fundamental existential paths or struggles common to humankind.

Future research involving more diverse groups, especially regarding ethnicity and religious beliefs, could be helpful in determining if the information from the current study is generalizable to other populations or not. It could also lend credence to underlying principles about prayer and spirituality as experienced by religious groups other than Christians; alternatively, it may more clearly define distinctions between them. However, this broadening of the population would likely best occur after studies that take a narrower approach to population sampling, looking solely at Christians who engage in relational prayer as described in the current study. The current study does not yet provide enough evidence for the existence of a link between relational prayer and empathy for additional diversified samples.

Finally, future research should explore the relationship of self-construal on prayer and empathy as moderation rather than mediation. When considering the current variables in the framework of moderation, the interaction between prayer and empathy may be greater for individuals who form their identity primarily from relational factors (and thus have a relational self-construal) and lower (or nonexistent) for individuals

who form their identity primarily from internal attributes (and thus have an independent self-construal). If this were shown to be true, it could have far reaching implications for religious expression and religious affiliation, such as the likelihood that a particular faith or spiritual practice be appealing to an individual based on their self-construal (or the likelihood that religion be appealing or not at all).

Conclusion

The current research was based on the assertion that spirituality—and more specifically, Christianity—has important elements focused on relationship with others as well as other elements focused on personal growth and discovery, and that these elements should come together in a way that promotes empathy and compassion for others. The results of the current study provided significant evidence that spirituality does have a positive influence on empathy and that relational dynamics help to explain a portion of that influence. However, the data did not appear to support the idea that mindfulness plays a key role in spirituality or that relational prayer itself promotes empathy development. This may be due to shortcomings of the measures used in the study to adequately assess the desired spiritual and religious constructs and additional research is needed on the relationship between prayer, mindfulness, and empathy. An unexpected discovery of the current research was the distinction between relational-focused prayer and self-focused prayer, which arose while examining involvement in religious practices and prayer fulfillment. This finding indicates that the fulfillment that people derive from prayer may differ based on the purpose and focus of their spirituality and expands on questions about different religious approaches and their effect on well-being and prosocial behavior, questions that have been asked by theologians for

centuries, scientists for decades. Hopefully, future researchers can expand these questions in further examinations of prayer, mindfulness, and empathy.

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Appendix A: Tables

Table 1. Demographics Variables

Demographic	Final Sample		EFAG Sample		CFAG Sample	
	Freq	%	Freq	%	Freq	%
Gender						
Male	182	28.1%	98	30.6%	84	25.6%
Female	463	71.5%	221	69.1%	242	73.8%
Other	3	0.5%	1	0.3%	2	0.6%
Age						
18 - 24	318	49.1%	157	49.1%	161	49.1%
25 - 34	140	21.6%	70	21.9%	70	21.3%
35 - 44	65	10.0%	38	11.9%	27	8.2%
45 - 54	60	9.3%	26	8.1%	34	10.4%
55 - 64	44	6.8%	18	5.6%	26	7.9%
65 - 74	18	2.8%	9	2.8%	9	2.7%
75 - 84	2	0.3%	1	0.3%	1	0.3%
85 or older	1	0.2%	1	0.3%	0	0.0%
Education						
Some high school	12	1.9%	3	0.9%	9	2.7%
High school graduate	29	4.5%	15	4.7%	14	4.3%
Some college credit, no degree	258	39.8%	125	39.1%	133	40.5%
Trade / technical / vocational training	14	2.2%	6	1.9%	8	2.4%
Associate degree	45	6.9%	23	7.2%	22	6.7%
Bachelor's degree	134	20.7%	71	22.2%	63	19.2%
Master's degree	117	18.1%	57	17.8%	60	18.3%
Professional degree	3	0.5%	0	0.0%	3	0.9%
Doctorate degree	36	5.6%	20	6.3%	16	4.9%
Race / Ethnicity						
White, Caucasian, European	521	80.4%	259	80.9%	262	79.9%
Black, African	26	4.0%	12	3.8%	14	4.3%
Hispanic, Latino/a	37	5.7%	18	5.6%	19	5.8%
East Asian / Asian Indian	46	7.1%	21	6.6%	25	7.6%
Native American or Alaskan Native	71	11.0%	38	11.9%	33	10.1%
Hawaiian Native, Pacific Islander	2	0.3%	1	0.3%	1	0.3%
Middle-Eastern / Arab	8	1.2%	5	1.6%	3	0.9%
Other	9	1.4%	4	1.3%	5	1.5%
Religion						
Agnostic	96	14.8%	50	15.6%	46	14.0%
Atheist	89	13.7%	45	14.1%	44	13.4%
Buddhist	11	1.7%	8	2.5%	3	0.9%
Catholic	59	9.1%	25	7.8%	34	10.4%
Baptist	89	13.7%	42	13.1%	47	14.3%
Episcopal	10	1.5%	2	0.6%	8	2.4%
Lutheran	15	2.3%	10	3.1%	5	1.5%
Methodist	29	4.5%	16	5.0%	13	4.0%
Mormon	7	1.1%	3	0.9%	4	1.2%
Presbyterian	5	0.8%	1	0.3%	4	1.2%
Unitarian	3	0.5%	0	0.0%	3	0.9%
Non- or Inter-denominational	148	22.8%	76	23.8%	72	22.0%
Other Christian	48	7.4%	22	6.9%	26	7.9%
Hindu	4	0.6%	2	0.6%	2	0.6%
Jewish	2	0.3%	1	0.3%	1	0.3%
Muslim	4	0.6%	2	0.6%	2	0.6%
Other	29	4.5%	15	4.7%	14	4.3%

Table 2. Structure Matrix of EFA for Part 1A

	Factor						
	1	2	3	4	5	6	7
ASP_ST18_PF	.870						
ASP_ST19_PF	.866						
ASP_ST12_PF	.856						
ASP_ST17_PF	.809						
ASP_ST8_PF	.799						
ASP_ST11_PF	.796						
ASP_ST21_PF	.795				.439		
ASP_ST2_PF	.759				.465		
ASP_ST1_PF	.676						
ASP_ST4_PF	.661						
ASP_ST15_U	.642				.609		
FFMQ_Nonjudge25		.850					
FFMQ_Nonjudge30		.827					
FFMQ_Nonjudge14		.786					
FFMQ_Nonjudge10		.750					
FFMQ_Nonjudge35		.709					
FFMQ_Nonjudge3		.702					
FFMQ_Nonjudge17		.699					
FFMQ_Nonjudge39		.660					
FFMQ_Describe12			.848				
FFMQ_Describe16			.843				
FFMQ_Describe27			.768				
FFMQ_Describe37			.762				
FFMQ_Describe2			.758				
FFMQ_Describe7			.730				
FFMQ_Describe32			.637				
FFMQ_Describe22			.539				
FFMQ_Aware38				.779			
FFMQ_Aware13				.717			
FFMQ_Aware5				.673			
FFMQ_Aware34				.671			
FFMQ_Aware18				.671			
FFMQ_Aware8				.666			
FFMQ_Aware28				.635			
FFMQ_Aware23				.617			

Table 2. Structure Matrix of EFA for Part 1A (continued)

	Factor						
	1	2	3	4	5	6	7
ASP_ST20_U	.451				.857		
ASP_ST3_U	.406				.682		
ASP_ST16_U					.678		
ASP_ST5_U					.628		
FFMQ_Nonreact29						.788	
FFMQ_Nonreact19						.635	
FFMQ_Nonreact21						.625	
FFMQ_Nonreact33						.615	
FFMQ_Nonreact4						.589	
FFMQ_Nonreact9						.582	
FFMQ_Observe15							.656
FFMQ_Observe20							.651
FFMQ_Observe1							.606
FFMQ_Observe31							.580

Extraction Method: Maximum Likelihood.

Rotation Method: Oblimin with Kaiser Normalization.

Table 3. Intercorrelations of the Factors from the EFA in Part 1A

	F1 Prayer Fulfillment	F2 Non-judging	F3 Describe	F4 Act w/ Awareness	F5 Universality	F6 Non-reactive	F7 Observe
F1 – Prayer Fulfillment	1	.000	.121*	.099	.407**	.055	.071
F2 – Nonjudging		1	.286**	.320**	.054	.230**	-.191**
F3 – Describe			1	.254**	.149**	.240**	.031
F4 – Act w/ Awareness				1	-.004	.323**	-.018
F5 - Universality					1	.092	.140*
F6 - Nonreactive						1	.124*
F7 – Observe							1

N = 320 for all correlations

* Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

Table 4. Structure Matrix of EFA for Part 1B

	Factor						
	1	2	3	4	5	6	7
ASP_RS5_Relationship	.938						-.651
ASP_RS6_Union	.892						-.656
ASP_RS3_Pray	.880						-.656
ASP_ST21_PF	.849						-.667
ASP_RS7_Important	.810						-.625
ASP_ST11_PF	.800						-.681
ASP_ST2_PF	.793						-.625
ASP_RC12R_Unable	.620						-.418
ASP_RS8_12Months	.573						-.410
FFMQ_Nonjudge25		.848					
FFMQ_Nonjudge30		.827					
FFMQ_Nonjudge14		.779					
FFMQ_Nonjudge10		.747					
FFMQ_Nonjudge35		.713					
FFMQ_Nonjudge3		.704					
FFMQ_Nonjudge17		.701					
FFMQ_Nonjudge39		.668					
FFMQ_Describe12			.848				
FFMQ_Describe16			.841				
FFMQ_Describe37			.766				
FFMQ_Describe27			.764				
FFMQ_Describe2			.758				
FFMQ_Describe7			.730				
FFMQ_Describe32			.642				
FFMQ_Describe22			.531				
FFMQ_Aware38				.792			
FFMQ_Aware13				.700			
FFMQ_Aware34				.679			
FFMQ_Aware18				.667			
FFMQ_Aware5				.657			
FFMQ_Aware8				.657			
FFMQ_Aware28				.642			
FFMQ_Aware23				.618			

Table 4. Structure Matrix of EFA for Part 1B (continued)

	Factor						
	1	2	3	4	5	6	7
FFMQ Observe15					.691		
FFMQ Observe20					.658		
FFMQ Observe1					.607		
FFMQ Observe31					.579		
FFMQ Observe36					.481		
FFMQ Nonreact29						.774	
FFMQ Nonreact19						.642	
FFMQ Nonreact33						.627	
FFMQ Nonreact21						.617	
FFMQ Nonreact9						.590	
FFMQ Nonreact4						.584	
ASP ST19 PF	.664						-.874
ASP ST12 PF	.674						-.848
ASP ST17 PF	.579						-.839
ASP ST18 PF	.719						-.837
ASP ST8 PF	.602						-.803
ASP ST4 PF	.562						-.631
ASP ST1 PF	.604						-.622

Table 5. Intercorrelations of the Factors from the EFA in Part 1B

Table 5. Intercorrelations of the Factors from the EFA in Part 1B							
	F1 *Relational Prayer*	*F2* *Nonjudging*	*F3* *Describe*	*F4* *Act w/ Awareness*	*F5* *Observe*	*F6* *Nonreactive*	*F7* *Self Prayer (R)*
F1 – Relational Prayer	1	.005	.101	.094	.006	.094	.643**
F2 – Nonjudging		1	.235**	.273**	-.189**	.197**	-.014
F3 – Describe			1	.224**	.068	.219**	.115*
F4 – Act with Awareness				1	-.003	.286**	.081
F5 – Observe					1	.116*	.079
F6 – Nonreactive						1	.025
F7 – Self Prayer (R)							1

N = 320 for all correlations

* Correlation is significant at the 0.05 level (2-tailed). ** Correlation is significant at the 0.01 level (2-tailed).

Table 6. Summary of Results of Tests of the Two Alternative Factor Analysis Structures

Model	**Part 1A**	**Part 1B**
df	1107	1293
Chi-square	1974.967**	2148.808**
CMIN/df	1.783*	1.662*
BSB	.000**	.000**
GFI	.803	.800
AGFI	.782	.779
NFI	.804	.830
RFI	.791	.819
IFI	.903*	.924*
TLI	.896	.919*
CFI	.902*	.924*
RMSEA	.049*	.045*
PCLOSE	.688*	.994*

N = 320
BSB = Bollen-Stine Bootstrap adjusted p-value
* Model meets standard guidelines for good fit (Hair et al., 2010; Hugh & Bentler, 1999)
** $p < .001$ (does not meet standard guidelines for good fit)

Table 7. Rules of Thumb for Model Fit Indices

Measure	Threshold
Chi-square / df (cmin/df)	< 3 good; < 5 permissible
p-value for the chi-square model	> .05
Goodness-of-Fit Index (GFI)	> .95
Adjusted Goodness-of-Fit Index (AGFI)	> .80
Bentler-Bonett Nonnormed Fit Index (NFI)	> .95 great; > .90 traditional
Relative-Fit Index (RFI)	> .95 great; > .90 traditional
Bollen's Incremental Index (IFL)	> .95 great; > .90 traditional
Tucker-Lewis Index (TLI)	> .95 great; > .90 traditional
Comparative Fit Index (CFI)	> .95 great; > .90 traditional; > .80 permissible
Root Mean Square Error of Approximation (RMSEA)	< .05 good; .05 - .10 moderate; > .10 bad
Test of significance for RMSEA (PCLOSE)	> .05
Taken from Hair et al. (2010), Hugh & Bentler (1999)	

Table 8. Zero-order Relations between the Exogenous Variables and Endogenous Variables from Path Analysis One

	FFMQ Mindfulness	ASP Spiritual Transcendence	ASP Religious Sentiment (R)	RISC Total	EAI Total
FFMQ Mindfulness	1	.134**	.147**	-.044	.512**
ASP Spiritual Transcendence		1	.729**	.259**	.194**
ASP Religious Sentiments (R)			1	.123**	.093*
RISC Total				1	.218**
EAI Total					1

N = 648 for all correlations
* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)

Table 9. Correlations of the Exogenous Variables from Path Analysis Two

	FFMQ O	FFMQ D	FFMQ A	FFMQ NJ	FFMQ NR	ASP RS	ASP PF	ASP U	ASP C	ASP RC
FFMQ - O	1	.198**	.050	-.041	.246**	.004	.104**	.199**	.093*	-.017
FFMQ - D		1	.297**	.285**	.335**	.111**	.092*	.142**	-.027	.173**
FFMQ - A			1	.365**	.268**	.125**	.094*	.074	-.061	.213**
FFMQ - NJ				1	.263**	-.011	-.015	.067	-.054	.197**
FFMQ - NR					1	.129**	.103**	.138**	-.035	.157**
ASP - RS						1	.829**	.391**	.145**	.494**
ASP - PF							1	.543**	.229**	.455**
ASP - U								1	.258**	.253**
ASP - C									1	.098*
ASP – RC										1

N = 648 for all correlations
*Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)

Table 10. Correlations of the Endogenous Variables from Path Analysis Two

	RISC	EAI AR	EAI AM	EAI SOA	EAI PT	EAI ER
FFMQ - O	.099*	.323**	.357**	.271**	.375**	0.026
FFMQ - D	0.04	.122**	.374**	.519**	.329**	.291**
FFMQ - A	-0.068	-0.013	0.059	.234**	.120**	.421**
FFMQ - NJ	-.120**	0.01	0.048	.184**	.086*	.380**
FFMQ - NR	-0.075	0.043	.248**	.313**	.283**	.565**
ASP - RS	.111**	.129**	-0.009	0.027	-.078*	.141**
ASP - RC	.116**	.146**	0.055	.139**	0.057	.270**
ASP - PF	.168**	.193**	0.062	0.043	-0.013	.105**
ASP - U	.213**	.294**	.194**	.115**	.203**	.088*
ASP - C	.296**	.257**	.146**	0.039	.117**	-0.053
RISC	1	.327**	.246**	.108**	.149**	-0.054
EAI - AR		1	.525**	.317**	.507**	0.074
EAI - AM			1	.631**	.689**	.185**
EAI - SOA				1	.628**	.310**
EAI - PT					1	.237**
EAI - ER						1

N = 648 for all correlations
* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed).

Table 11. Significant and Nonsignificant Estimates for Path Analysis Two

			With Nonsignificant		Without Nonsignificant	
			Estimate	p	Estimat	P
RISC	<---	FFMQ OBSERVE	0.044	0.250		
RISC	<---	FFMQ NONJUDGE	-0.132	***	-0.132	***
RISC	<---	ASP PRAYER	0.039	0.593		
RISC	<---	ASP UNIVERSALITY	0.126	0.005	0.137	***
RISC	<---	ASP CONNECT	0.242	***	0.245	***
RISC	<---	ASP RELIGIOSITY	-0.054	0.427		
RISC	<---	ASP REL CRISIS	0.096	0.028	0.083	0.032
EAI AR	<---	FFMQ OBSERVE	0.259	***	0.266	***
EAI AM	<---	FFMQ OBSERVE	0.247	***	0.249	***
EAI SOA	<---	FFMQ OBSERVE	0.164	***	0.154	***
EAI PT	<---	FFMQ OBSERVE	0.264	***	0.267	***
EAI AR	<---	FFMQ DESCRIBE	0.031	0.382		
EAI AM	<---	FFMQ DESCRIBE	0.271	***	0.263	***
EAI SOA	<---	FFMQ DESCRIBE	0.403	***	0.405	***
EAI PT	<---	FFMQ DESCRIBE	0.204	***	0.19	***
EAI ER	<---	FFMQ DESCRIBE	0.014	0.661		
EAI SOA	<---	FFMQ AWARENESS	0.091	0.003	0.104	***
EAI PT	<---	FFMQ AWARENESS	0.060	0.041	0.058	0.042
EAI ER	<---	FFMQ AWARENESS	0.216	***	0.22	***
EAI SOA	<---	FFMQ NONJUDGE	0.031	0.315		
EAI PT	<---	FFMQ NONJUDGE	-0.012	0.682		
EAI ER	<---	FFMQ NONJUDGE	0.162	***	0.159	***
EAI AM	<---	FFMQ NONREACT	0.127	***	0.131	***
EAI SOA	<---	FFMQ NONREACT	0.120	***	0.127	***
EAI PT	<---	FFMQ NONREACT	0.168	***	0.168	***
EAI ER	<---	FFMQ NONREACT	0.442	***	0.446	***

Table 11: Significant and Nonsignificant Estimates for Path Analysis Two (cont.)

			With Nonsignificant		Without Nonsignificant	
			Estimate	p	Estimat	p
EAI AR	<---	ASP RELIGIOSITY	0.050	0.370		
EAI PT	<---	ASP RELIGIOSITY	-0.132	***	-0.144	***
EAI ER	<---	ASP RELIGIOSITY	0.026	0.634		
EAI AR	<---	ASP REL CRISIS	0.062	0.076	0.088	0.005
EAI SOA	<---	ASP REL CRISIS	0.035	0.216		
EAI ER	<---	ASP REL CRISIS	0.121	***	0.118	***
EAI AR	<---	ASP PRAYER	-0.004	0.948		
EAI ER	<---	ASP PRAYER	-0.010	0.868		
EAI AR	<---	ASP UNIVERSALITY	0.127	0.002	0.128	***
EAI AM	<---	ASP UNIVERSALITY	0.033	0.356		
EAI SOA	<---	ASP UNIVERSALITY	-0.030	0.382		
EAI PT	<---	ASP UNIVERSALITY	0.111	0.003	0.11	***
EAI ER	<---	ASP UNIVERSALITY	-0.039	0.279		
EAI AR	<---	ASP CONNECT	0.114	0.001	0.117	***
EAI AM	<---	ASP CONNECT	0.056	0.063	0.063	0.035
EAI PT	<---	ASP CONNECT	0.056	0.068	0.059	0.056
EAI AR	<---	RISC	0.227	***	0.23	***
EAI AM	<---	RISC	0.196	***	0.203	***
EAI SOA	<---	RISC	0.097	0.004	0.094	0.004
EAI PT	<---	RISC	0.105	0.003	0.108	0.002
EAI ER	<---	RISC	0.006	0.849		

*** p < .001

Table 12. Model Fit Comparisons for Significant and Nonsignificant Estimates for Path Analysis Two

Model	**Nonsignificant Estimates Removed**	**Nonsignificant Estimates Included**
df	48	31
Chi-square	83.410**	68.321**
CMIN/df	1.738*	2.204*
GFI	.985*	.987*
AGFI	.956*	.944*
NFI	.978*	.982*
RFI	.946*	.931*
IFI	.991*	.990*
TLI	.976*	.961*
CFI	.990*	.990*
RMSEA	.034*	.043*
PCLOSE	.989*	.780*

* Model meets standard guidelines for good fit (Hair et al., 2010; Hugh & Bentler, 1999)
** $p < .001$ (does not meet standard guidelines for good fit)

Table 13. Correlations of the Exogenous and Endogenous Variables from Path Analysis Three

	Self-Focused Prayer	FFMQ O	FFMQ D	FFMQ A	FFMQ NJ	FFMQ NR	RISC	EAI Total
Relational Prayer	.818**	.037	.109**	.135**	.001	.111**	.150**	.085*
Self-Focused Prayer	1	.120**	.088*	.082*	-.018	.101*	.159**	.103**
FFMQ - O		1	.198**	.050	-.041	.246**	.099*	.375**
FFMQ - D			1	.297**	.285**	.335**	.040	.439**
FFMQ - A				1	.365**	.268**	-.068	.220**
FFMQ - NJ					1	.263**	-.120**	.191**
FFMQ - NR						1	-.075	.395**
RISC							1	.218**
EAI Total								1

N = 648 for all correlations
* Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed).

Table 14. Model Fit Comparisons for all Path Analyses

Model	**Path Analysis One (full scales)**	**Path Analysis Two (subscales)**	**Path Analysis Two (subscales with EAI Total)**	**Path Analysis Three (relational prayer)**
df	1	48	20	12
Chi-square	3.699*	83.410**	29.881*	19.683*
CMIN/df	3.699	1.738*	1.494*	1.640*
GFI	.998*	.985*	.992*	.993*
AGFI	.966*	.956*	.971*	.975*
NFI	.996*	.978*	.986*	.986*
RFI	.955*	.946*	.954*	.959*
IFI	.997*	.991*	.995*	.995*
TLI	.967*	.976*	.984*	.984*
CFI	.997*	.990*	.995*	.995*
RMSEA	.065	.034*	.028*	.031*
PCLOSE	.258*	.989*	.973*	.889*

* Model meets standard guidelines for good fit
(Hair et al., 2010; Hugh & Bentler, 1999)
** $p < .001$ (does not meet standard guidelines for good fit)

Table 15. Operational Definitions for Constructs

Constructs	Measures*
Mindfulness	Five Factor Mindfulness Questionnaire
Spirituality	Spiritual Transcendence subscale of the ASPIRES
Relational Prayer	Prayer Focus items
Empathy	Empathy Assessment Index
Interpersonal Focus	Relational-Interdependent Self-Construal scale

Table 16. Prayer Focus Items

	Original Measure Item	Description
Relational Prayer factor	Religiosity 3	How often do you pray?
	Religiosity 5	To what extent do you have a personal, unique, close relationship with God?
	Religiosity 6	How often do you have experiences where you feel a union with God and gain spiritual truth?
	Religiosity 7	How important to you are your religious beliefs?
	Religiosity 8	Over the past 12 months, have your religious interests and involvements increased, decreased, or stayed the same?
	Religious Crisis 12	I find myself unable, or unwilling, to involve God in the decisions I make about my life.*
	Prayer Fulfillment 2	I do not feel a connection to some larger Being or Reality.*
	Prayer Fulfillment 11	Spirituality is not a central part of my life.*
	Prayer Fulfillment 21	I want to grow closer to the God of my understanding.
Self-Focused Prayer factor	Prayer Fulfillment 1	I have not experienced deep fulfillment and bliss through my prayers and/or meditations.*
	Prayer Fulfillment 4	I meditate and/or pray so that I can reach a higher spiritual level.
	Prayer Fulfillment 8	In the quiet of my prayers and/or meditations, I find a sense of wholeness.
	Prayer Fulfillment 12	I find inner strength and/or peace from my prayers and/or meditations.
	Prayer Fulfillment 17	I meditate and/or pray so that I can grow as a person.
	Prayer Fulfillment 18	Prayer and/or meditation does not hold much appeal to me.*
	Prayer Fulfillment 19	My prayers and/or meditations provide me with a sense of emotional support.
* Indicates an item that was reverse-scored for analysis		

Appendix B: Figures

Figure 1. Path Analysis One (Full Scales)
Note – All displayed estimates are significant at the .01 level or below.

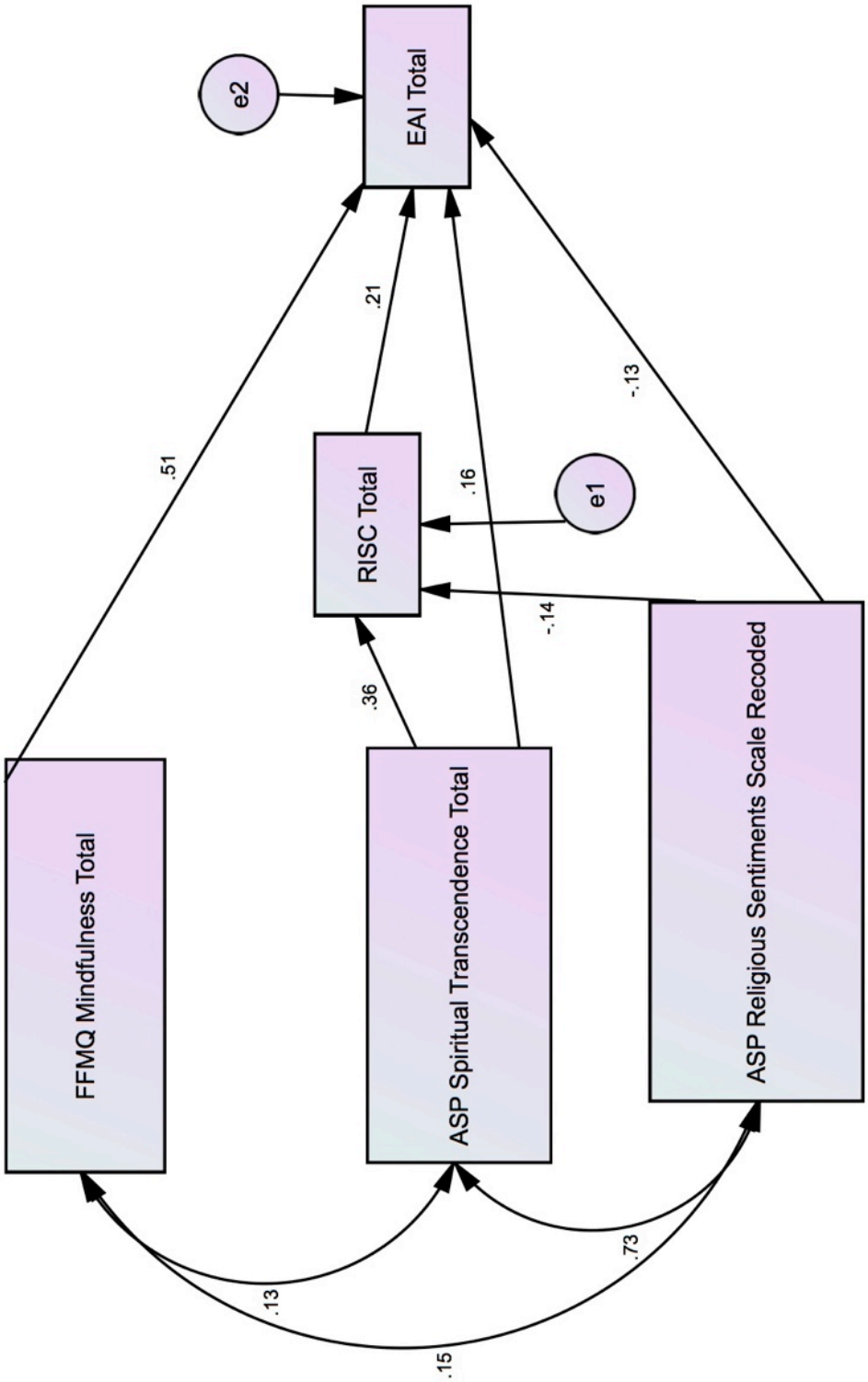


Figure 2. Path Analysis Two (Subscales with EAI Total)
Note – All displayed estimates are significant at the .05 level or below.

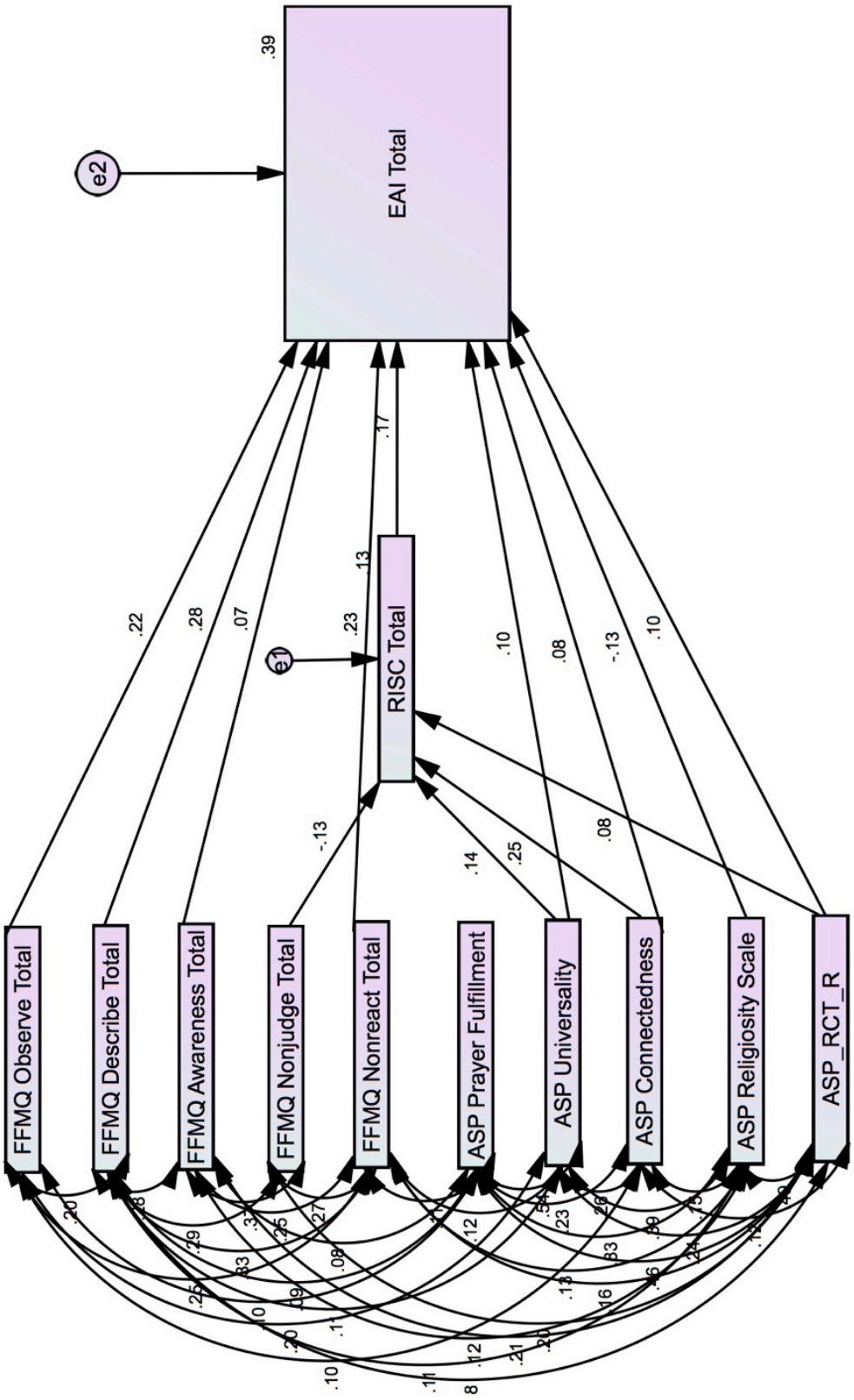
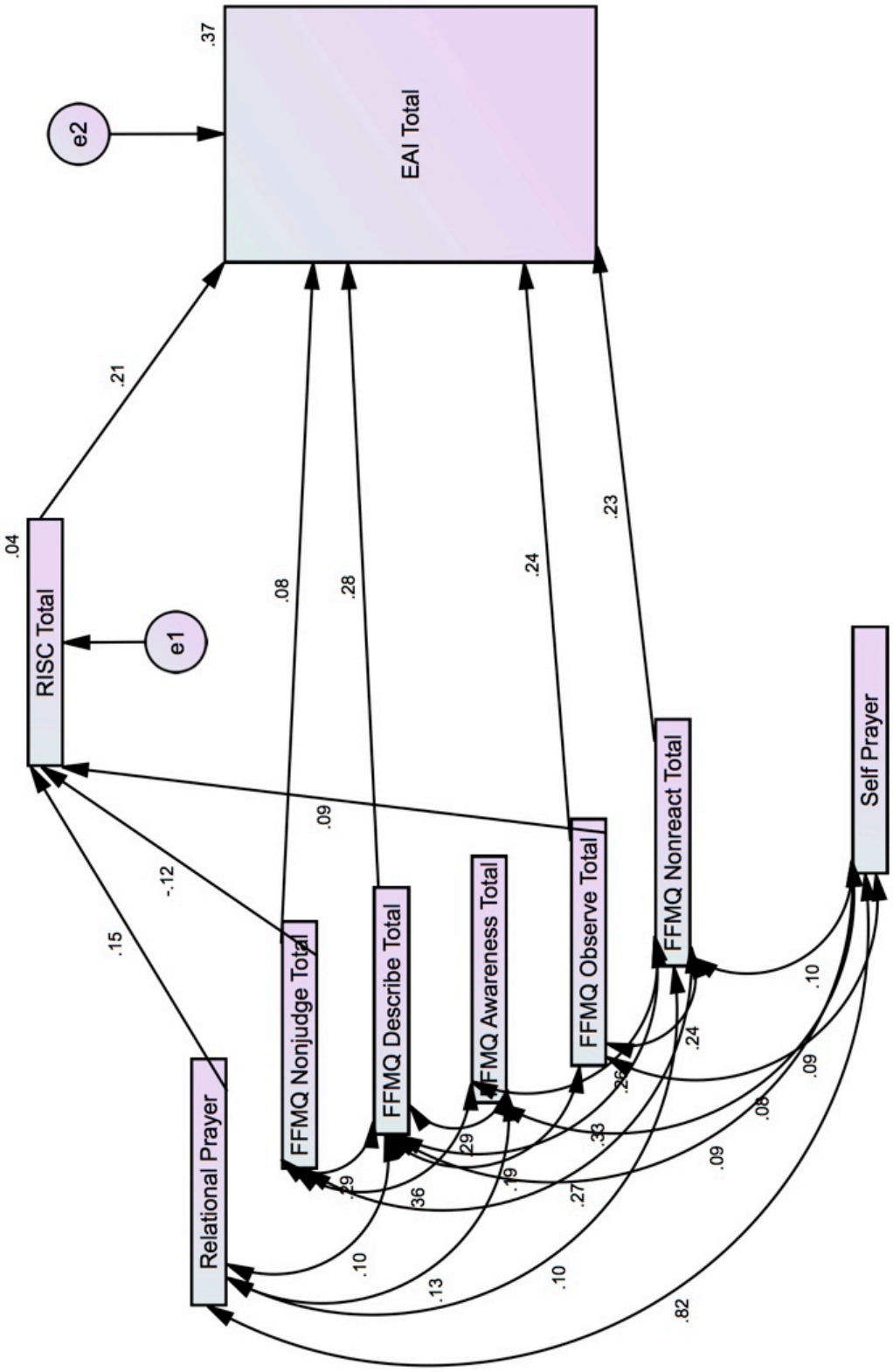


Figure 3. Path Analysis Three (Relational Prayer)
Note – All displayed estimates are significant at the .02 level or below.



Appendix C: Demographic Questions

Age

Educational Level (choose one, highest level attained)

- Some high school, no diploma
- High school graduate, diploma or the equivalent (for example: GED)
- Some college credit, no degree
- Trade / technical / vocational training
- Associate degree
- Bachelor's degree
- Master's degree
- Professional degree
- Doctorate degree

Gender Identity (choose one)

- Male
- Female
- Other (please specify)

Race/Ethnicity (select all that apply)

- White, Caucasian, European
- Black, African
- Hispanic, Latino/a
- East Asian / Asian Indian
- Native American or Alaskan Native
- Hawaiian Native, Pacific Islander
- Middle-Eastern / Arab
- Other (please specify)

Religious Affiliation (choose one)

- Christian
    - Baptist
    - Catholic
    - Episcopal
    - Lutheran
    - Methodist
    - Mormon
    - Presbyterian
    - Unitarian
    - Non-denominational or Inter-denominational
    - Other Christian
- Jewish
- Muslim
- Hindu

- Buddhist
- Atheist
- Agnostic
- Other Faith Tradition (please specify)

Miscellaneous

How long have you been an active/practicing member of the above religious affiliation?

How often do you meditate?

__Never __About once a month __Several times a week
__About once or twice a year __2 or 3 times a month
__Several times a year __Nearly every week

Appendix D: Five-Facet Mindfulness Questionnaire (FFMQ)

Please rate each of the following statements using the scale provided. Select the number that best describes your own opinion of what is generally true for you.

1	2	3	4	5
never or very rarely true	**rarely true**	**sometimes true**	**often true**	**very often or always true**

1. When I'm walking, I deliberately notice the sensations of my body moving.
2. I'm good at finding words to describe my feelings.
3. I criticize myself for having irrational or inappropriate emotions.
4. I perceive my feelings and emotions without having to react to them.
5. When I do things, my mind wanders off and I'm easily distracted.
6. When I take a shower or bath, I stay alert to the sensations of water on my body.
7. I can easily put my beliefs, opinions, and expectations into words.
8. I don't pay attention to what I'm doing because I'm daydreaming, worrying, or otherwise distracted.
9. I watch my feelings without getting lost in them.
10. I tell myself I shouldn't be feeling the way I'm feeling.
11. I notice how foods and drinks affect my thoughts, bodily sensations, and emotions.
12. It's hard for me to find the words to describe what I'm thinking.
13. I am easily distracted.
14. I believe some of my thoughts are abnormal or bad and I shouldn't think that way.
15. I pay attention to sensations, such as the wind in my hair or sun on my face.
16. I have trouble thinking of the right words to express how I feel about things
17. I make judgments about whether my thoughts are good or bad.
18. I find it difficult to stay focused on what's happening in the present.
19. When I have distressing thoughts or images, I "step back" and am aware of the thought or image without getting taken over by it.
20. I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing.
21. In difficult situations, I can pause without immediately reacting.
22. When I have a sensation in my body, it's difficult for me to describe it because I can't find the right words.
23. It seems I am "running on automatic" without much awareness of what I'm doing.
24. When I have distressing thoughts or images, I feel calm soon after.
25. I tell myself that I shouldn't be thinking the way I'm thinking.
26. I notice the smells and aromas of things.
27. Even when I'm feeling terribly upset, I can find a way to put it into words.
28. I rush through activities without being really attentive to them.
29. When I have distressing thoughts or images I am able just to notice them without reacting.
30. I think some of my emotions are bad or inappropriate and I shouldn't feel them.

31. I notice visual elements in art or nature, such as colors, shapes, textures, or patterns of light and shadow.
32. My natural tendency is to put my experiences into words.
33. When I have distressing thoughts or images, I just notice them and let them go.
34. I do jobs or tasks automatically without being aware of what I'm doing.
35. When I have distressing thoughts or images, I judge myself as good or bad, depending what the thought/image is about.
36. I pay attention to how my emotions affect my thoughts and behavior.
37. I can usually describe how I feel at the moment in considerable detail.
38. I find myself doing things without paying attention.
39. I disapprove of myself when I have irrational ideas.

Appendix E: Assessment of Spirituality and Religious Sentiments

(ASPIRES)

The following questions ask you about various perceptions you hold about your view of the world and your place in it. Answer each question on the scale provided by checking the box that best expresses your feelings. If you are not sure of your answer or believe that the question is not relevant to you, then mark the "Neutral" category.

Please work quickly, do not spend too much time thinking about your responses to any single item. Usually, your first answer is your best response, so go with your first reaction to the item.

Section I.

1. How often do you read the Bible/Torah/Koran/Geeta?
__Never __About once a month __Several times a week
__About once or twice a year __2 or 3 times a month
__Several times a year __Nearly every week

2. How often do you read religious literature other than the Bible/Torah/Koran/Geeta?
__Never __About once a month __Several times a week
__About once or twice a year __2 or 3 times a month
__Several times a year __Nearly every week

3. How often do you pray?
__Never __About once a month __Several times a week
__About once or twice a year __2 or 3 times a month
__Several times a year __Nearly every week

4. How frequently do you attend religious services?
__Never __Rarely __Occasionally __Often __Quite often

5. To what extent do you have a personal, unique, close relationship with God?
__Not at all __Slight __Moderate __Strong __Very Strong

6. Do you have experiences where you feel a union with God and gain spiritual truth?
__Never __Rarely __Occasionally __Often __Quite often

7. How important to you are your religious beliefs?
__Extremely important __Somewhat unimportant
__Very important __Fairly unimportant
__Fairly important __Not at all important

8. Over the past 12 months, have your religious interests and involvements…

1	2	3	4	5	6	7
Increased			Stayed the same			Decreased

1	2	3	4	5
Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**

9. I feel that God is punishing me.
10. I feel abandoned by God.
11. I feel isolated from others in my faith group.
12. I find myself unable, or unwilling, to involve God in the decisions I make about my life.

Section II.

1. I have not experienced deep fulfillment and bliss through my prayers and/or meditations.
2. I do not feel a connection to some larger Being or Reality.
3. I do not believe that on some level my life is intimately tied to all of humankind.
4. I meditate and/or pray so that I can reach a higher spiritual level.
5. All life is interconnected.
6. There is an order to the universe that transcends human thinking.
7. Death does stop one's feelings of emotional closeness to others.
8. In the quiet of my prayers and/or meditations, I find a sense of wholeness.
9. I have done things in my life because I believed it would please a parent, relative, or friend that had died.
10. Although dead, memories and thoughts of some of my relatives continue to influence my current life.
11. Spirituality is not a central part of my life.
12. I find inner strength and/or peace from my prayers and/or meditations.
13. Although there is good and bad in people, I believe that humanity as a whole is basically bad.
14. I do not have any strong emotional ties to someone who has died.
15. There is no higher plane of consciousness or spirituality that binds all people.
16. Although individual people may be difficult, I feel an emotional bond with all of humanity.
17. I meditate and/or pray so that I can grow as a person.
18. Prayer and/or meditation does not hold much appeal to me.
19. My prayers and/or meditations provide me with a sense of emotional support.
20. I feel that on a higher level all of us share a common bond.
21. I want to grow closer to the God of my understanding.
22. The praise of others gives deep satisfaction to my accomplishments.
23. I am not concerned about the expectations that loved ones have of me.

Appendix F: Empathy Assessment Index (EAI)

Please respond to the following questions by selecting the choice that most closely reflects your feelings or beliefs:

1	2	3	4	5	6
Never	**Rarely**	**Sometimes**	**Frequently**	**Almost always**	**Always**

1. When I see someone receive a gift that makes them happy, I feel happy myself.
2. Emotional stability describes me well.
3. I am good at understanding other people's emotions.
4. I can consider my point of view and another person's point of view at the same time.
5. When I get angry, I need a lot of time to get over it.
6. I can imagine what the character is feeling in a good movie.
7. When I see someone being publicly embarrassed, I cringe a little.
8. I can tell the difference between someone else's feelings and my own.
9. When I see a person experiencing a strong emotion, I can accurately assess what that person is feeling.
10. Friends view me as a moody person.
11. When I see someone accidently hit his or her thumb with a hammer, I feel a flash of pain myself.
12. When I see a person experiencing a strong emotion, I can describe what the person is feeling to someone else.
13. I can imagine what it's like to be in someone else's shoes.
14. I can tell the difference between my friend's feelings and my own.
15. I consider other people's points of view in discussions.
16. When I am with someone who gets sad news, I feel sad for a moment too.
17. When I am upset or unhappy, I get over it quickly.
18. I can explain to others how I am feeling.
19. I can agree to disagree with other people.
20. I am aware of what other people think of me.
21. Hearing laughter makes me smile.
22. I am aware of other people's emotions.

Appendix G: Relational-Interdependent Self-Construal Scale (RISC)

Indicate the extent to which you agree or disagree with each of the following statements.

1	2	3	4	5	6	7
Strongly Disagree			Neutral			Strongly Agree

1. My close relationships are an important reflection of who I am.
2. When I feel very close to someone, it often feels to me like that person is an important part of who I am.
3. I usually feel a strong sense of pride when someone close to me has an important accomplishment.
4. I think one of the most important parts of who I am can be captured by looking at my close friends and understanding who they are.
5. When I think of myself, I often think of my close friends and family also.
6. If a person hurts someone close to me, I feel personally hurt as well.
7. In general, my close relationships are an important part of my self-image.
8. Overall, my close relationships have very little to do with how I feel about myself.
9. My close relationships are unimportant to my sense of what kind of person I am.
10. My sense of pride comes from knowing who I have as close friends.
11. When I establish a close friendship with someone, I usually develop a strong sense of identification with that person.

Appendix H: University of Oklahoma IRB Approval Letter

The UNIVERSITY of OKLAHOMA

Institutional Review Board for the Protection of Human Subjects

Approval of Initial Submission – Exempt from IRB Review – AP01

Date: March 15, 2016 **IRB#:** 6675

Principal Investigator: Craigery B Cruzan, BA **Approval Date:** 03/15/2016

Exempt Category: 2

Study Title: Connecting with Self, God, and Others: An Examination of the Relationship Between Mindful Awareness, Prayer Fulfillment, and Empathy Development

On behalf of the Institutional Review Board (IRB), I have reviewed the above-referenced research study and determined that it meets the criteria for exemption from IRB review. To view the documents approved for this submission, open this study from the *My Studies* option, go to *Submission History*, go to *Completed Submissions* tab and then click the *Details* icon.

As principal investigator of this research study, you are responsible to:

- Conduct the research study in a manner consistent with the requirements of the IRB and federal regulations 45 CFR 46.
- Request approval from the IRB prior to implementing any/all modifications as changes could affect the exempt status determination.
- Maintain accurate and complete study records for evaluation by the HRPP Quality Improvement Program and, if applicable, inspection by regulatory agencies and/or the study sponsor.
- Notify the IRB at the completion of the project.

If you have questions about this notification or using iRIS, contact the IRB @ 405-325-8110 or irb@ou.edu.

Cordially,

Aimee Franklin, Ph.D.
Chair, Institutional Review Board

Appendix I: Participant Recruitment Script

Mindfulness and Connection
Craig Cruzan
IRB #6675

My name is Craig Cruzan, and I am a Counseling Psychology doctoral student at the University of Oklahoma. I am requesting that you volunteer to participate in a research study titled *Mindfulness and Connection*. The purpose of this study is to examine the relationship between mindfulness, spirituality, and how we connect to others in our lives. If you agree to be in this study, you will be asked to answer simple questions concerning your thoughts about connecting to others.

Participants who complete the full survey will be offered the opportunity to enter a drawing for one of several Amazon.com gift certificates. The only requirement for participation is that **you must be at least 18 years of age.**

Participating is entirely voluntary and anonymous. It will take approximately 10-15 minutes of your time. If you are willing to help me with this research, please follow the link below to answer the questions on a secure server.

In an effort to collect responses from others in real life settings, I am asking that you **please forward this survey link via email or social media to at least four other people** who are at least 18 years of age. Thank you for your time and consideration; your help in the recruitment process is greatly appreciated!

If you have any questions or concerns about the research, you may contact me at ccruzan1@ou.edu.

Again, thank you so much!

The Survey can be found here:
https://ousurvey.qualtrics.com/SE/?SID=SV_dnxzyRYLhYp8lDf

The OU IRB has approved the content of this advertisement but the investigator is responsible for securing authorization to distribute this message by mass email. The University of Oklahoma is an Equal Opportunity Institution.

Appendix J: IRB Approved Consent/Information Sheet

My name is Craig Cruzan and I am a graduate student in the Counseling Psychology program at the University of Oklahoma. I am requesting that you volunteer to participate in a research study titled *Mindfulness and Connection*. You must be at least 18 years of age to participate in this study.

Please read this document and contact me to ask any questions that you may have BEFORE agreeing to take part in my research.

What is the purpose of this research? The purpose of this study is to examine the relationship between mindfulness, spirituality, and how we connect to others in our lives.

How many participants will be in this research? About 600 people will take part in this research.

What will I be asked to do? If you agree to be in this study, you will be asked to do the following things: Answer roughly 100 questions concerning your personal thoughts and ideas on meditation, prayer, and your relationships with others. Some of the questions are multiple choice and some of the questions ask you to rate your answer on a scale.

How long will this take? Your participation will take approximately 10-15 minutes and no longer than half an hour.

What are the risks and/or benefits if I participate? Your participation will not involve more than minimal risk to you. That means there will be no harm or discomfort anticipated in the research greater than what is ordinarily encountered in daily life or during routine physicals or psychological examinations or tests.

There is no direct benefit for participants in this study. However, implications for this research could help increase our understanding of psychology and potentially lead to expanding the interventions used in counseling settings.

Will I be compensated for participating? Upon completion of the research, you will be given the opportunity to enter into a drawing for a $25 Amazon gift card. One $25 Amazon gift card will be drawn for every 100 participants. If you choose to enter the drawing, you will be asked to submit a contact email for notification if you are a winner. This email will be stored separately from your research data to protect your anonymity.

Who will see my information? In published reports, there will be no information included that will make it possible to identify you as a research participant. Research records will be stored securely. Most psychology journals expect that researchers retain data for five years following publication. Individual researchers will destroy

anonymous data for this study after the standard retention period (five years) has passed. No personally-identifiable information (such as names or IP addresses) will be requested to ensure complete confidentiality. Only approved researchers and the OU Institution Review Board will have access to the records.

Do I have to participate? No. If you do not participate, you will not be penalized or lose benefits or services unrelated to the research. If you decide to participate, you don't have to answer any question and can stop participating at any time.

Who do I contact with questions, concerns or complaints? If you have questions, concerns or complaints about the research, the researcher conducting this study can be contacted at: Craig Cruzan (principle investigator) – ccruzan1@ou.edu, (405) 325 - 5567; Dr. Cal Stoltenberg (Advisor) – cstoltenberg@ou.edu, (405) 325 - 5974.

You can also contact the University of Oklahoma – Norman Campus Institutional Review Board (OU-NC IRB) at 405-325-8110 or irb@ou.edu if you have questions about your rights as a research participant, concerns, or complaints about the research and wish to talk to someone other than the researcher(s) or if you cannot reach the researcher(s).

Please print this document for your records. By providing information to the researcher(s), you are agreeing to participate in this research.

I agree to participate

I do not want to participate

This research has been approved by the University of Oklahoma, Norman Campus IRB.

IRB Number: 6675 **Approval date: 03/15/2016**