AN INVESTIGATION OF THE RELATIONS BETWEEN AGGRESSION AND SPIRITUALITY

by

JOHN THOMAS HUBER II

DISSERTATION

Submitted to the Graduate School of the University of Detroit Mercy

Detroit, Michigan

In partial fulfillment of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

2012

PROGRAM: PSYCHOLOGY (Clinical)

Approved by:

Advisor Date

7/31/12

7/31/12

7/21/12

7/31/12

UNIVERSITY OF DETROIT MERCY
COLLEGE OF LIBERAL ARTS AND EDUCATION
GRADUATE PROGRAM

DISSERTATION

Submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy

TITLE An Investigation of the Relations Between Aggression and Spirituality

PRESENTED BY John Thomas Huber II

ACCEPTED BY

Major Professor	Date 07/31/2012
Program Director	Date 7/31/12
College of Liberal Arts and Education	Date 31 July 2013

Table of Contents

List of Tables

List of Figures

Chapter 1

Introduction

Overview

Aggression and spirituality are two of the most persistent and provocative subjects in human history: The former has led to events ranging from terrorist acts to world wars, while the latter has resulted in phenomenon spanning from charitable acts to world religions. On an individual and personal level, aggression has been responsible for everything from mental disorders to domestic violence, while spirituality has produced experiences varying from meditation and prayer to brand new perspectives on life and other people. Some have even suggested it is the very capacity to choose not to engage in aggression and to engage in spirituality that differentiates humans from all other animals (Broom, 2003; De Waal, 2009; Katz, 2000; Rossano, 2010). As evolutionary psychologist Matt Rossano (2010) stated, the advent of religiously-based tribes about 70,000 years ago not only made us more moral and less aggressive but, "Religion made us human" (p. 2). Although religion and spirituality are not the same, because the latter term is broader and more inclusive (Bregman, 2006), it still might by extension be said that spirituality "made us human" and defined us apart from all other instinctually aggressive species. Yet, aggression and spirituality have a unique relationship together that may not always be constructive and healthy, and the links between them are likely complex and intertwined (Broom, 2003; Leach, Berman, & Eubanks, 2008).

More research on their relationship is needed to know just how complex and intertwined, though. As Leach, Berman, and Eubanks (2008) stated, "Empirical studies investigating religion, spirituality, and aggression are sparse… Results of these studies

provide conflicting evidence regarding the role of religiosity [or spirituality] in overt aggressive behavior, with positive, inverse, and no relationships reported" (p. 312). Given the ambiguity of the relationship between aggression and spirituality and lack of previous research on the subject, there is a need to investigate the relations between the different forms of aggression and the different dimensions of spirituality. These factors have indeed been explored in partial combination before, such as physical, verbal, cognitive, emotional, or relational aggression and religiosity as one dimension of spirituality (Ginges, Hansen, & Norenzayan, 2009; Ji & Kyung, 2008; Murray-Swank, Mahoney, & Pargament, 2006). But, they have never been examined together as a collective whole or with appreciation for and respect to the multiple dimensions of spirituality that comprise the majority of models today.

The literature on spirituality has greatly swelled in the last few decades (Bregman, 2006; Zinnbauer et al., 1997), and different tests of it are now available for use. While only minimal scientific data exists on the topic thus far, there have been very mixed findings on the association between aggression and spirituality (Ginges, Hansen, & Norenzayan, 2009; Ji & Kyung, 2008; Murray-Swank, Mahoney, & Pargament, 2006). But, this is likely due to the fact that no research has considered the relationship of the various forms of aggression to a multidimensional model of spirituality that accounts for an array of different facets of spiritual life. A general association for this collective group of factors can only be inferred since it has never been investigated, and it remains unclear what aspects of spirituality are the important links which might tie it to particular kinds of aggression.

The different dimensions of spirituality in the present study were assessed by the Expressions of Spirituality Inventory (ESI; MacDonald, 1997, 2000a, 2000b), which measured Cognitive Orientation toward Spirituality (COS), Existential Well-Being (EWB),

Experiential-Phenomenological Dimension (EPD), Paranormal Beliefs (PAR), and Religiousness (REL). The aforementioned five dimensions of spirituality were examined in relation to five forms of aggression, including physical, verbal, cognitive, emotional, and relational. The Aggression Questionnaire (AQ; Buss & Perry, 1992) was used to measure physical, verbal, cognitive, and emotional aggression, and it has been previously noted that the AQ "has quickly become the gold-standard for the measurement of aggression" (Gerevich, Bacskai, & Czobor, 2007, p. 1). The fifth and final form of aggression assessed was relational aggression, as determined by the popular Revised Self-Report of Aggression & Social Behavior Measure (SRASBM; Morales, 1999). The current inquiry discriminating between five forms of aggression and five dimensions of spirituality has, thus, been previously neglected and may help explain some of the vast discrepancies found in previous research (Leach, Berman, & Eubanks, 2008).

Purpose and Significance

The purpose of this study was to investigate the relations between aggression and spirituality, which was achieved by examining five common forms of aggression and a five dimensional model of spirituality. Not only does scant data currently exist on this topic, but there have been very mixed results found on their correlations (Leach, Berman, & Eubanks, 2008). However, the connection between aggression and spirituality (e.g., presence of aggression due to absence of spirituality) was so apparent to one group of British clinical nursing researchers that they even devised a spiritual assessment battery which explicitly examined levels of aggression (Clarke, 2009), despite a dearth of previous research on the subject. Clearly, there is need for a better understanding of the existence and nature of the relations between aggression and spirituality and, if the aforementioned clinical nursing

group is any indication, many health providers may be able to benefit from this knowledge and more effectively serve their patients.

Although it may be difficult for science to directly study spirituality, which is a subjective experience that is not easily observed, spirituality can be known by its physiological, behavioral, cognitive, emotional, and social expressions (MacDonald, 2000a). As Miller and Thoresen (2003) declared, "In summary, we believe that there is no scientific reason why spirituality and religiousness cannot or should not be studied" (p. 26), which is to say, they both *can and should* be studied. But one salient problem with present research is the perplexing array of spirituality measurements in the literature. When one searches the literature for a scientifically sound model of spirituality, it becomes evident just how lacking and sorely needed a satisfactory model is (MacDonald et al., 1995). An examination of the literature reveals assumptions of spirituality as being a unitary construct with just one factor, all the way to a multidimensional construct with nine factors (e.g., Brady, Peterman, Fitchett, & Cella, 1999; Chatters, Levin, & Taylor, 1992; Elkins, Hedstrom, Hughes, Leaf, & Saunders, 1988; Ellison, 1983; Highfield, 1992; Hungelmann, Kinkel-Rossi, Klassen, & Stollenwork, 1996; Jim et al., 2006; Neff, 2008; Vella-Brodrick & Allen, 1995; Wolman, 1997).

Another problem has been the case of mistaken identity between religion and spirituality (MacDonald et al., 1995). A perusal of available research shows that religion and spirituality are often confused and weakly discriminated, although most researchers today now accept that they are different but related (Hay & Socha, 2005; Hill et al., 2000; Hodge, 2001). Having identified these troubles in the literature and the necessity for an overarching structure to decipher the surplus of models, MacDonald (1997, 2000a, 2000b) factor

analyzed 18 extant measures of spirituality and related constructs in order to distill them into a more cohesive, concise framework of spirituality. The resultant Expressions of Spirituality Inventory (ESI) model views spirituality as a multidimensional sphere of human functioning that is associated yet distinct from personality and other psychological variables, and has been seen to considerably clarify the relation between spirituality and a host of other factors, including health, illness, pro-social behavior, and pro-social emotion, among others (Boyd-Starke, Hill, Fife, & Whittington, 2011; Dolgoff-Kaspar, 2009; Huber & MacDonald, 2012; MacDonald, 2000a; MacDonald & Holland, 2002, 2003).

To date, just three studies have assessed the relation of the ESI model of spirituality to aggression (Burns, 2004; Curby, 2004; MacDonald, 1997). The first study examined only emotional aggression in a sample of adolescent boys and found it was inversely related to higher ratings on certain dimensions of spirituality, namely COS and EWB (Burns, 2004). The second study examined emotional aggression in a sample of college students (using the MMPI-2 content scale of anger) and found it was also negatively related COS and EWB (MacDonald, 1997). The third study examined relational aggression in a sample of college students and found it was significantly related to higher ratings on certain dimensions of spirituality, namely PAR and REL for women but not men, yet inversely related to higher ratings on other dimensions of spirituality, namely EWB for both men and women (Curby, 2004). Another study assessed the relation of the ESI model of spirituality to socio-behavioral and socio-emotional traits, but these factors were the opposite of aggression, namely altruism and empathy (Huber & MacDonald, 2012). It found significantly positive correlations between altruism and empathy, between altruism and two dimensions of spirituality (COS, EPD), and between empathy and three ESI dimensions (COS, EPD, REL),

with a significant negative correlation observed between empathy and EWB (Huber & MacDonald, 2012). A causal path model, in which spirituality both directly and indirectly influenced altruism through empathy, was also found (Huber & MacDonald, 2012).

By studying the relations between aggression and spirituality, a greater understanding of the ways in which they affect one another can be determined. This knowledge will not only strengthen the literature on the subject and contribute to the scientific community, but it could also aid in developing strategies to minimize the destructive aspects of aggression, like religious-inspired violence, and to maximize the constructive aspects of spirituality, like a universal connection with others that leads to greater cooperative and non-aggressive behaviors. If it is learned that higher degrees of religiosity are associated with higher degrees of physical, verbal, cognitive, emotional, and relational abuse, it could indicate the presence of a potentially hidden problem among religious institutions that should be addressed, whether the violent rhetoric of sermons or the violent passages of scriptures. For example, the Bible verse, "Spare the rod, spoil the child," is a strong conviction held in many religious communities that can be used to justify child abuse. Specific interventions, like psycho-educational programs for religious institutions, might be developed from information gained in the present research and combined with other relevant research to help prevent religious-inspired violence.

Aggression and spirituality are also relevant to many fields of psychology, including clinical, counseling, health, and forensic psychology. To begin, aggression is a serious issue for many clients and can lead one to abuse other people and to suffer psychological disorders, like Intermittent Explosive Disorder (IED), which is characterized by "several discrete episodes of failure to resist aggressive impulses… [and the] degree of aggressiveness

expressed during the episodes is grossly out of proportion to any precipitating psychosocial stressors" (American Psychiatric Association, 2000, p. 667). It is known that IED affects over 6% of the general population, thus indicating aggression is a prevalent issue in need of professional attention and scientific research (McCloskey, Noblett, Deffenbacher, Gollan, & Coccaro, 2008). The findings of the current inquiry may have ramifications for anger management treatment in general and IED treatment in particular. For instance, if identifiable dimensions of spirituality are found to be tied to decreased or increased aggression, then future studies could test different techniques which maximize or minimize these spiritual dimensions accordingly.

Spirituality is a vital topic for the fields of clinical and counseling psychology, because both practice psychotherapy. Research indicates that spirituality is conferred a high level of importance in the lives of many people, especially Americans. For instance, 95% of Americans report believing in God or a higher power, which is a figure that has not dipped below 90% in the last half-century (Gallup & Lindsay, 1999). In addition, 90% of Americans report praying at times (Gallup & Lindsay, 1999), and 84% report having spiritual needs (Gallup & Lindsay, 1999; Myers, 2000). Despite the obvious importance of spirituality to most Americans, Porter (1995) said that, when it comes to psychology and psychotherapy, clinicians frequently avoid or neglect spirituality in their clients because it is perceived to be a private matter based on a personal, and not interpersonal, relationship with a higher power.

Additionally, Porter (1995) noted that spirituality, which is rooted in the human spirit, can feel threatening to the fragile identity of psychology as a science of the mind and not philosophy of the soul, given the literal definition and history of psychology as being a study

of the soul (psyche). These factors can also lead psychologists to overlook spirituality to the detriment of their clients, because spirituality is something that can greatly impact people and should not be a taboo subject in treatment (Porter, 1995). As declared by Porter (1995), "[C]ounselors must understand that spirituality is a universal experience… Counselors need to develop strategies that allow for and affirm this spiritual dimension… Counselors cannot serve as spiritual guides if they do not know about the spirit from firsthand experience" (p. 78). All of this is despite the fact that 73% of psychologists regard spirituality to be very or fairly valuable in their lives, and 48% of psychologists regard religion to be very or fairly valuable in their lives (Shafranske, 1996). This means that three in four psychologists privately believe spirituality is centrally important to life yet, as Porter (1995) mentioned above, they are afraid to discuss it with their clients.

This study may also have implications for the field of health psychology, since aggression is often related to decreased health and physiological functioning (Friedman, 1992; Johnson, 1990; Miller, Smith, Turner, Guijarro, & Hallet, 1996; Smith, Glazer, Ruiz, & Gallo, 2004; Smith & MacKenzie, 2006). For instance, it has been known for years that the various forms of aggression are highly associated with significant health problems, including cardiovascular disease and reactivity, coronary heart disease, high cholesterol, increased heart rate, higher blood pressure, and hypertension among other illnesses, as well as higher general mortality rates (Friedman, 1992; Johnson, 1990; Miller, Smith, Turner, Guijarro, & Hallet, 1996; Smith, Glazer, Ruiz, & Gallo, 2004; Smith & MacKenzie, 2006; Suinn, 2001). But not only is there a documented link between aggression and poor health, there is also a documented link between spirituality and good health (Ellison & Levin, 1998; Hill & Butter, 1995; Larson, Swyers, & McCullough, 1998; Levin & Vanderpool, 1992;

Plante & Sherman, 2001; Seybold & Hill, 2001). Spirituality is often associated with increased health and physiological functioning, and has been found to relate to the prevention of and recovery from a variety of physical illnesses (Ellison & Levin, 1998; Hill & Butter, 1995; Larson, Swyers, & McCullough, 1998; Levin & Vanderpool, 1992; Plante & Sherman, 2001; Seybold & Hill, 2001). Hence, the present study may bear on the field of health psychology by helping decode the links between aggression and spirituality, and by signaling areas where people might improve their physical well-being through better modulating their healthy versus unhealthy levels of aggression and spirituality.

In addition, the current inquiry may have ramifications for the field of forensic psychology. Aggression is endemic to numerous psychological disorders, such as Conduct Disorder (in children and adolescents; CD), Oppositional Defiant Disorder (in children and adolescents; ODD), and Antisocial Personality Disorder (in adults; APD) (American Psychiatric Association, 2000). Aggression is among the defining features of each of these three disorders, with CD and ODD common among juvenile delinquent populations, and APD common among forensic populations and violent offenders, who are sometimes treated with Aggression Control Therapy (Hornsveld, 2005; Hornsveld, Nijman, & Kraaimaat, 2008). If the present study finds that certain aspects of spirituality are inversely associated with higher degrees of specific kinds of aggression, for instance, then treatments for aggression may benefit from incorporating techniques which enhance or support these spiritual dimensions in a client. Or, on the contrary, if particular dimensions of spirituality are associated with higher levels of aggression, then therapeutic techniques to better modulate these spiritual dimensions and their effects on aggression may be valuable. Therefore, issues of aggression and spirituality have high relevance and wide implications for

the fields of clinical, counseling, health, and forensic psychology, not to mention the psychology of religion and, more generally, religious institutions themselves. Due to the importance of the relationship between aggression and spirituality and the confusion surrounding their connection, it is critical that these subjects be further investigated and, if possible, better understood.

Chapter 2

Literature Review

Evolution and Aggression

There is an old Roman proverb, *homo homini lupus*, meaning "man is wolf to man" (De Waal, 2009, p. 3), which embodies the spirit of aggression and animalism believed by many to inhabit each human. The belief that humans are inherently aggressive by their very nature received its first elaborate description four centuries ago by Thomas Hobbes. In 1651, Hobbes powerfully wrote about the inborn war that pits human against human, a "war where every man is enemy to every man… [and feels] continual fear, and danger of violent death; and the life of man, solitary, poor, nasty, brutish, and short" (chapter 13). This Hobbesian view of humanity as nothing more than aggressive, savage beasts was also prevalent in the writings of some evolutionary scientists, who extended this view even further. As recorded by Iraneus Eibl-Eibesfeldt (1977), the founder of the field of human ethology that studies the evolution of human behavior, "the pattern of individualized aggression [in humans] follows, in principle, the pattern of intraspecific [i.e. intra-species] aggression in animals… the scales are tipped in favor of an innate drive for aggression" (p. 134, 137). But not only did evolution produce human aggression, some scientific writers (Alexander, 1987; Bigelow, 1970; Keith, 1947) have declared that group aggression and tribal wars in prehistoric times actually accelerated the rate of human evolution. These are just some of the views of human nature offered over the centuries, and they converge on a particular picture of humanity seemingly supported by evolutionary theory.

British scientist Charles Darwin first popularized his theory of evolution in the mid-19th century (Rossano, 2010; Teehan, 2010). What evolutionary theory proposes is that all species have a common biological origin that grew and diversified through environmental adaptations, reproductive successes, and genetic mutations as a result of three major principles: competition, heritability, and variability (Rossano, 2010; Teehan, 2010). Some evolutionary biologists, like Richard Dawkins (1976), have argued that evolution is only based upon aggressive competition that enables the winner to survive and propagate and, simultaneously, weakens or wipes out the loser. The consequence of biological systems rewarding organisms for aggression, competitiveness, and selfishness is that the genes for these traits are reinforced and forwarded to future generations of the organism, where these traits continue to self-protect them, multiply their numbers, and ward off threats (Dawkins, 1976; Williams, 1992). But if humans truly are just aggressive beasts in a dog-eat-dog world, it is unclear how they are able to experience spiritual transcendence to positively connect with others or the universe. It is further uncertain how they are capable of participating in religious groups that require mutual cooperation, if everything is just an aggressive competition to them. The truth of the evolutionary view of humanity may be more complicated than such over-simplifications imply.

De Waal (2009) stated that humans have not only competed with each other throughout evolutionary history but also cooperated with one another at least enough to live in social groups, because humans evolved from social species like apes where group-living was a basic survival strategy and evolutionarily advantageous, not a fortuitous choice. Thus, Homo sapiens descended from a long lineage of herd-living predecessors that made the human species relatively tribe-based from the start. Darwin (1871) wrote, “There can be no

doubt that a tribe including many members who… were always ready to give aid to each other and to sacrifice themselves for the common good, would be victorious over other tribes; and this would be natural selection" (Rossano, 2010, p. 51). Thus, Darwin believed there are myriad evolutionary advantages for humans to cooperate as members of a group in order to increase the survival chances of all individuals in their tribe, even if for the purpose of competing against other aggressive tribes that are fighting for their own chances at survival.

There are a number of evolutionary mechanisms which enable in-group cooperation behaviors, including kinship selection (nepotism), parental investment in child care (attachment system), cultural group selection (inter-group aggression), conformity to social norms (regression to the mean), and the detection and punishment of norm violations (in-group aggression) (Joyce, 2007; Katz, 2000; Kirkpatrick, 2005; Rossano, 2010; Wilson, 2003). This latter mechanism, involving rule enforcement through in-group aggression, is especially relevant to the current investigation and implies an underlying moral competition beneath the pleasant veneer of in-group cooperation.

Evolution and Spirituality

Rossano (2010) noted that a group possessing a cultural norm of reciprocal helpfulness, combined with standards for *aggressively punishing* non-helpers, will out-perform a group possessing a cultural norm of only individualism if people are permitted to switch and choose between groups. For cooperation in a group to evolutionarily work, the cooperation must be kept cheap, the number of cheaters must be minimal (in order to prevent setting a standard of frequent punishment), and non-cooperation must be aggressively punished by large coalitions where the cost of membership to individuals is low, the rewards

of membership are slightly higher, and the aggression threatened against non-cooperators is extremely high (Rossano, 2010). In fact, it is believed that this is how organized religions and spiritual groups develop, function, and succeed (Altran, 2004; Broom, 2003; Kirkpatrick, 2005; Rossano, 2010; Teehan, 2010; Wilson, 2002).

Some evolutionary psychologists, Kessler and Cohrs (2008), have highlighted the value of in-group members displaying aggression toward other members, "[A]ggression against norm violators has an adaptive value in increasing rates of cooperation in groups [e.g., religions]… intergroup competition plays a major role in the development of the punishment tendency and, hence, for high levels of cooperation in social groups… [which] may, in turn, increase intergroup competition and conflict" (pp. 75-79), thereby leading to a vicious cycle of sowing more and more mutual aggression both among and within groups. In other words, organized groups like religions tend to evolve through cultivation of aggression against both in-group deviants and out-group members as a way to compete better for survival in their cultural competitions against other religions or social groups. Although most evolutionary research has focused on the relationship of aggression to religion and religious in-group membership, rather than "spirituality" proper, a clearer view of this relationship can illuminate the ways in which aggression is linked to spirituality, since religiosity is a major component of it.

The most common elements of evolutionary traits in religions include the commitment to meet all high moral standards of in-group membership, belief in a nepotistic god who shows special love for the in-group and little concern for the out-group, and general distrust and antipathy felt toward out-group members (Teehan, 2010). There are myriad benefits to religious membership and practice, such as decreased likelihood of anxiety,

hopelessness, depression, abnormal physiological functioning, immunodeficiency disorders, disease or illness, and premature death (Broom, 2003). The many advantages to social aggregation include decrease in threat of predation, assistance with child-rearing, and increase in knowledge and availability of resources like food, clothes, and shelter, among other things. And, religious groups may serve a similar purpose through social aggregation. Wilson (2003) delineated several theories of the evolution of religion, and these include understanding religion as: a group-level adaptation, an individual-level adaptation, a cultural parasite that feeds on both individuals and groups, and an unintended byproduct (i.e. spandrel, exaptation, and/or co-opted adaptation) of the evolution of other things.

Kirkpatrick (2005) was one theorist who held the view that religion did not evolve per se, but merely represents a compilation of accidental byproducts of other adaptations that indeed evolved for domain-specific and highly-specialized psychological functions. These psychological functions are based on the human attachment system, which Kirkpatrick (2005) believes religion hijacked from parent-child relations and mate pair-bonding to use for the unintended purpose of attachment to a supernatural figure as a tool for self-soothing, feeling of secure base, and tolerance of distress related to fear of death and/or predation. The three main types of attachment are the avoidant style (due to insecure base), the anxious/ambivalent style (due to insecure base), and the secure style (due to secure base). From an evolutionary attachment perspective of why religion exists, "It is easy to see why: An attachment figure who is simultaneously omnipresent, omniscient, and omnipotent would provide the most secure of secure bases" (Kirkpatrick, 2005, p. 70). It should be noted that Buddhism and Taoism are exceptions to this rule of thumb, in that they replace the omnipotent personal attachment figure with an omnipotent universal force of nature.

Evolutionary psychologist Gregory Webster (2008) wrote,

"Thus, the fundamentals of coalitions [e.g., religions] that are learned in childhood through kin-based interaction are generalized to larger coalitions that can include non-kin… it seems that inclusive fitness theory may be fundamental to the evolved psychology of coalitions, which, in turn, may have an impact on more modern social psychological notions such as social identities, social categorization, ingroup/outgroup dynamics, and stereotyping and prejudice. Only recently, however, has evolutionary psychology begun to provide some much-needed insight into the possible precursors of *coalitional aggression*. Stereotypes about out-groups, particularly negative ones, may lead to prejudice and discrimination [emotional, cognitive, verbal, and relational aggression] against out-groups, which may, in turn, lead to violence [physical aggression]… Manipulating perceptions of kinship, or lack thereof, may be the key to facilitating *intergroup aggression*" [italics added] (pp. 29-34).

The evolutionary attachment theory of religion helps explain the "manipulated perceptions of kinship" found pervasively throughout certain Western religions, like Catholicism and Protestantism. For instance, God is called "Father", devotees are called "children of God", the laity call their priests "Father", the priests call their laity "children", devotees call each other "brothers" and "sisters", and the golden rule of behavior is called "brotherly love" (Kirkpatrick, 2005). For these reasons, Crippen and Machalek (1989) referred to religion as a "hypertrophied kin recognition process" (p. 74), whereby the biological instrument of kinship recognition is seized in the service of religion to produce a subculture of artificial or surrogate kin. The religious in-group mentality works through a spiritual kinship selection theory in that members of the community are surrogate brothers and sisters in the "family" of religious believers, which can thus result in inter-group competition and consequent aggression toward non-family members and out-groups.

This has been a discussion of the in-group behaviors leading to aggression in religion, but the mechanisms can also operate on an individual or personal level. Ana Maria Rizzuto's

(1979) research showed that a person's image of God often carries an uncanny resemblance to one's parents (i.e. early attachment figures). But as persons age and grow older, in contrast to Ana Maria Rizzuto's research, their God images become more and more like themselves (presumably as a projection of their own self-perception and positive models of oneself rather than their parents) (Atran, 2002). Kirkpatrick (2005) has cited significant evidence that a person who believes God to be loving and compassionate is more likely to have higher positive self-regard. The probability of someone accepting God as a substitute attachment figure is directly related to the level of which they view themselves as undeserving of love by other humans (Kirkpatrick, 2005). In other words, a developmental model for understanding beliefs in God across the lifespan would suggest that, whereas children perceive God to resemble their parents, adults perceive God to resemble themselves, whether good or bad depending on their self-image. And their self-image, in return, can lead them to aggressive or non-aggressive behavior with others.

Putting It All Together: Evolution, Aggression, and Spirituality

Evolutionary biologist Richard Dawkins (1993) viewed religion as an unfortunate "virus of the mind", which does not markedly differ from Karl Marx's famous proclamation of religion as the "opiate" of the people. Although religiosity is not the same as morality, most religious groups do preach a code of morality given it supports conformity to their social norms of preferentially helping other in-group members, and it clearly distinguishes in-group from out-group members (Atran, 2004; Broom, 2003; Teehan, 2010; Rossano, 2010; Wilson, 2002). As noted earlier, the rise of spiritual groups and their religious morality is believed to be due to kinship selection, the attachment system or parental investment in child care, cultural group selection or inter-group aggression, conformity to

social norms, and the detection and punishment of norm violations through in-group aggression (Joyce, 2007; Katz, 2000; Kirkpatrick, 2005; Rossano, 2010; Wilson, 2003).

Rossano (2010) pointed out that, while religious or spiritual groups can evolve a morality, two particularly important mechanisms are: (1) setting social norms to which members are expected to conform, and (2) *aggressively punishing* members who fail to follow these rules. Hence, aggression and punishment, often motivated by "righteous" anger, are intrinsically part of the membership process of religious groups and inevitably lead to out-group hostility and sometimes "holy" wars or religious crusades against non-members. Several authors (Alexander, 1987; De Waal, 2009) have suggested that group morality evolved over time through a process of out-group hostility reinforcing in-group solidarity until specific codes of morals and taboos were written as a line drawn to separate in-group from out-group members. According to Laland, Odling-Smee, and Feldman (Katz, 2000), cultural group selection works and succeeds by selecting competitive groups, rather than specific aggressive individuals. As such, these groups replicate through group-level traits that work by producing inter-group aggression, tribal conflict, xenophobia (fear of outsiders), hostility toward out-group members, and sometimes reciprocal antagonism (Katz, 2000).

Although organized religion can lead to large-scale terrorism, this "in-group moral mentality" (Teehan, 2010, p. 184) can also lead to small-scale harm through different forms of aggression: the demonization or utter devaluation of the out-group, the acceptance or encouragement of moral cruelty toward out-group members, socially fracturing into artificial divisions between people, and harsh public or private humiliation of norm violators in the in-group, who make mistakes or fail to meet the high (and often unrealistic) moral expectations required of members (Teehan, 2010). Broom (2003) stated the worst harms caused by

religion have been the excessive repression of people and the instigation of militaristic conflicts between groups, which he compares to primitive tribalism. The tendency of some religions to be violent is, in the view of Teehan (2010), due to two factors: 1) the perceived special relationship of the in-group with a supernatural judge and law enforcer, and 2) the infinitely high costs versus benefits of being judged on the right side of the law (in most religions, eternal heaven versus hell in the cosmic battle of good against evil; in Buddhism and Taoism, the everlasting peace of nirvana or ultimate reality versus the perpetual suffering of rebirth or reincarnation). When these two factors coincide in religion, the stage is set for aggression, militarism, terrorism, and violence.

This has been an exploration of evolutionary theory and its foundation for aggression and spirituality in the form of religiosity. It has been observed that evolutionary theory provides a number of explanations for how religion and some aspects of spirituality evolved, and how aggression is provoked toward both in-group and out-group members. But religion is not the same as spirituality, so the question remains about what particular dimensions of spirituality, whether religiosity or other dimensions, are positively versus negatively associated with the five forms of aggression, namely physical, verbal, cognitive, emotional, and relational aggression. The current psychological literature will now be reviewed to learn what past research indicates about the relations between aggression and spirituality. As Leach, Berman, and Eubanks (2008) stated, "Empirical studies investigating religion, spirituality, and aggression are sparse… Results of these studies provide conflicting evidence regarding the role of religiosity [or spirituality] in overt aggressive behavior, with positive, inverse, and no relationships reported" (p. 312). Since past research offers such mixed results on the subject, each of the five forms of aggression will soon be examined from

research that suggests an inverse relationship (i.e. lower aggression correlates with higher spirituality), a positive relationship (i.e. higher aggression correlates with higher spirituality), and no relationship at all (i.e. aggression does not correlate with spirituality). But first, the definition and categories of aggression will be explored as they are found within the professional and scientific literature.

The Definition and Categories of Aggression

As has been seen, aggression evolved in humans as a mechanism of self-protection and external threat-reduction and, the more it developed, the further it spurred human evolution (Alexander, 1987; Bigelow, 1970; Eibl-Eibesfeldt, 1977; Keith, 1947). At present, there are five recognized forms of aggression, including physical, verbal, cognitive, emotional, and relational. Psychologist Albert Bandura (1973) once defined general aggression in the following broad terms, "Aggression is characterized as a kind of destructive and injurious behavior which is socially defined as aggressive" (p. 8). The different forms of aggression are organized along lines drawn by cognitive-behavioral theory and therapy (Epps & Kendall, 1995). "Cognitive-behaviorism synthesizes the cognitive, conative, affective, and social domains of human functioning… Accordingly, the essential descriptive features of this constellation may be seen as primarily affective (anger), cognitive (hostility), and behavioral ([physical and verbal] aggression), acted upon within a social [relational] context (Epps & Kendall, 1995, p. 159-160). So although each particular form of aggression may have its own unique features, all are harmful to the recipient of the aggression and sometimes to the bearer as well. Aggression toward self or others, which is harmful, should be clearly distinguished from *assertion* of oneself or others, which is helpful (Galassi & Galassi, 1978; Huey & Rank, 1984; McCampbell & Ruback, 1985; Ruby, 1983; Smith-Jentsch, Salas, &

Baker, 1996; Wyrick, Gentry, & Shows, 1977). It is productive for someone who suffers injustice to be self-assertive and stand up for oneself, but it is counter-productive and likely to incite further mistreatment if one were to try fighting aggression with still more aggression, in the same way that one cannot extinguish a fire by adding more fire. Hence, aggression is different from assertion in that it desires to harm, and the five forms of aggression and their harmful effects will now be reviewed.

To begin, physical aggression may be understood as the instrumental component of motor behavior that harms someone through bodily assault or the threat thereof (Buss & Perry, 1992). This can involve fighting, hitting, striking, throwing objects, breaking things, physically threatening, or committing violence against another (Buss & Perry, 1992). Both physical aggression and verbal aggression are "typically defined as attacking, destructive, or hurtful actions" (Smith, 1994, p. 26). Verbal aggression may be understood as the instrumental component of motor behavior that harms someone through abusive words or word delivery (Buss & Perry, 1992). This can involve being argumentative, confrontational, disagreeable, insensitive, and offensive when speaking with others (Buss & Perry, 1992).

Cognitive aggression, i.e. hostility, includes malice toward others, a spiteful interpretation of events, and preoccupation with injustices allegedly committed against oneself (Buss & Perry, 1992). Hostility may be defined as a "negative attitude toward others consisting of enmity, denigration, and ill will" (Smith, 1994, p. 26) and, as a cognitive process, involves "a devaluation of the worth and motives of others, an expectation that others are likely sources of wrong-doing, a relational view of being in opposition toward others, and a desire to inflict harm or see others harmed" (Smith, 1994, p. 26). Hostility

comprises a hostile attributional style, which is "the tendency to construe the actions of others as involving aggressive intent" (Smith, Glazer, Ruiz, & Gallo, 2004, p. 1218). Hostility may include being consumed with bitterness, envying others, thinking one got a raw deal in life, suspecting friends and strangers alike of malevolent intentions, and believing others conspire to hurt or exploit one (Buss & Perry, 1992). But such cognitive aggression is more proactive and less reactive than emotional aggression for, as Caprara, Barbaranelli, and Zimbardo (1996) stated, "Despite the seemingly clear distinction between cognitive and affective [emotional] aggression… it is appropriate to posit that impulsive-reactive aggression is more under the guidance of excitatory-automatic processes, while proactive aggression is more under the guidance of self-regulatory-intentional processes" (p. 135). In other words, cognitive aggression is more calculated and intentional, but emotional aggression is more automatic and instinctual.

Emotional aggression, namely anger, is the affective component which underlies and often precedes the other forms of aggression (Buss & Perry, 1992). Anger can sometimes precipitate other forms of aggression because anger is an episodic emotion that is a strong predictor of reactive aggression, which is felt when there is a desire to harm or punish a person who has offended or upset one (Robinson & Wilkowski, 2010). Anger may be defined as "an unpleasant emotion ranging in intensity from irritation or annoyance to fury or rage" (Smith, 1994, p. 25). Anger is a physiological reaction that may involve being easily irritated and letting it show, feeling explosive, growing enraged, failing to be even-tempered, experiencing flare-ups, and being perceived as a hot-head by others (Buss & Perry, 1992).

Relational aggression has been studied as far back as the late 1960s and has also been called covert, indirect, and social aggression (Archer & Coyne, 2005; Coyne, Archer, &

Eslea, 2006; Feshbach, 1969). This kind of aggression may be understood as relational behaviors "intended to significantly damage another [person's] friendships or feelings of inclusion by the peer group" (Crick & Grotpeter, 1995, p. 711) and involves "use of the social structure in order to harm the target" (Bjorkqvist & Nimela, 1992, p. 52). These relationally aggressive behaviors can include character assassinations through malicious gossip, the advertisement of personal secrets to induce rejection by others, interpersonal exploitation or manipulation, threats of terminating a relationship in order to control the individual, intentional ignoring or neglect of someone, and banishment from a social group (Crick & Grotpeter, 1995; Simmons, 2002). The above descriptions of different forms of aggression have attempted to define and categorize them according to the scientific literature. However, since past research offers such mixed results on the association of aggression to spirituality (Leach, Berman, & Eubanks, 2008), each of the five forms of aggression will now be examined individually beginning with research that suggests an inverse relationship (i.e. lower aggression correlates with higher spirituality), then research that suggests a positive relationship (i.e. higher aggression correlates with higher spirituality), and finally research that suggests no relationship at all (i.e. aggression does not correlate with spirituality). The three studies (Burns, 2004; Curby, 2004; MacDonald, 1997) that assessed aggression with respect to the five ESI dimensions of spirituality will not be included here, but reserved for now in order to pay special attention to their findings later.

The Inverse Relationship between Physical Aggression and Spirituality

Some research has indicated an inverse relationship involving lower levels of physical aggression and higher levels of spirituality (Dervic, Oquendo, Grunebaum, Ellis, Burke, & Mann, 2004; Holmes, 2008; Kaslow et al., 2004; Marcelli, 2002; Scarnati, 1991;

Spalek & El-Hassan, 2007; Walker, 2000). In the cases where the relationship between these factors is constructive and healthy, the research suggests this may be related to peripheral factors, but not spirituality per se itself. Specifically, the social support obtained by attending church services and the spiritual support obtained by perceiving oneself to have a personal relationship with God appear to help reduce physical aggression (including suicidal aggression against oneself) in at-risk populations like inner-city minority youth, incarcerated prison inmates, and depressed psychiatric inpatients, according to the following studies.

For instance, higher church attendance was found to be significantly related to holding fewer beliefs that support physical aggression in a sample of African American adolescents (Marcelli, 2002). Higher church attendance was found to be significantly negatively related to physical aggression in a sample of pre-adolescent African American children (Holmes, 2008). Higher spiritual support, as opposed to parent or peer support, was significantly related to lower physical aggression in an inner-city adolescent sample (Walker, 2000). Conversion to a religion was significantly associated with lower propensity for physical aggression in a sample of British prison inmates (Spalek & El-Hassan, 2007). Treatment at a residential facility encouraging religion within a bio-psycho-socio-spiritual model was found to be significantly associated with reduction in levels of physical aggression among a sample of violent psychiatric prison inmates (Scarnati, 1991).

In regard to self-aggression, higher levels of physical aggression along with lower levels of spirituality were found in an African American sample of suicide attempters (Kaslow et al., 2004). And, religiously affiliated persons had significantly fewer suicide attempts and lower levels of aggression than non-religiously affiliated persons among a depressed inpatient sample (Dervic, Oquendo, Grunebaum, Ellis, Burke, & Mann, 2004). As

observed in all of these studies, the social support obtained by attending church services and the spiritual support obtained by perceiving oneself to have a personal relationship with God appear to help reduce physical aggression (including suicidal aggression against oneself) in at-risk populations like inner-city minority youth, incarcerated prison inmates, and depressed psychiatric inpatients. None of these studies, however, showed there is an inverse relationship between physical aggression and spirituality in populations who are not at-risk. In fact, the opposite occurrence was found.

The Positive Relationship between Physical Aggression and Spirituality

Oftentimes, higher levels of physical aggression may be related to higher levels of spirituality. Whereas spirituality is associated with reduced aggression in at-risk populations in need of social support from others or spiritual support from a caring and protective supernatural attachment figure, spirituality has the opposite relationship with physical aggression in other samples: When it comes to not-at-risk populations like higher-functioning or seemingly stable adults, parents, romantic partners, and religious believers, spirituality seems to increase physical aggression (Bottoms, Nielsen, Murray, & Filipas, 2004; Bushman et al., 2007; Dor-Shav, Friedman, & Tchereonogura, 1978; Good, 1999; Kanin, 1971; Murray-Swank, Mahoney, & Pargament, 2006; Shor, 1998). Furthermore, in contrast to how spirituality decreases suicidal aggression in certain samples mentioned earlier, it actually increases suicidal aggression if the person believes others are a threat against her or him and one's religious community, and if the person believes he or she can eliminate the danger posed by others through a suicide attack against them (Fischer, Greitemeyer, & Kastenmuller, 2007; Ginges, Hansen, & Norenzayan, 2009).

Regular attendance at religious services was found to significantly predict support for suicide attacks and, among 6 religions in 6 nations (Israeli Jews, Mexican Catholics, British Protestants, Russian Orthodox Christians, Indian Hindus, and Indonesian Muslims), religious attendance was found to significantly predict one's willingness for self-martyrdom in a suicide attack (Ginges, Hansen, & Norenzayan, 2009). Strong religious identification, when perceived to be under threat, was significantly related to attitudes supportive of terrorism by out-group perpetrators in a German study (Fischer, Greitemeyer, & Kastenmuller, 2007). Reading religious scriptures in which God sanctions violence was significantly related to increases in physical aggression by Bible believers (Bushman et al., 2007). Higher degrees of religiosity were significantly associated with the tendency for men to blame women for their sexual aggression against an unwilling partner (Kanin, 1971). Adult intimate partner violence (IPV) was significantly related to punitive or wrathful images of God in one's religious belief (Good, 1999). In one particularly interesting study, religious participants were found to deliver significantly more electric "shocks" to non-religious as opposed to religious participants that incorrectly answered a series of questions, and the victims received significantly more simulated shocks when incorrect answers were given to questions about religion (Dor-Shav, Friedman, & Tchereonogura, 1978).

Higher degrees of religiosity were found to be significantly associated with committing and condoning physical child abuse (Bottoms, Nielsen, Murray, & Filipas, 2004; Shor, 1998). Religious belief in the sanctification of parenting by God was significantly related to more physical aggression, in the form of increased use of corporal punishment, toward children by conservative but not liberal religious mothers (Murray-Swank, Mahoney, & Pargament, 2006). One reason for the increased physical aggression of religious persons,

at least as it pertains to child abuse, is that they tend to have high expectations for everyone's behavior, and their religious norms and values encourage them to harshly punish others for their moral shortcomings (Shor, 1998). For instance, the Bible verse, "Spare the rod, spoil the child," is a strong conviction held in many religious communities. The above studies have demonstrated that higher levels of physical aggression may be related to higher levels of spirituality for many not at-risk and otherwise stable adults, parents, romantic partners, and religious believers.

The Lack of Relationship between Physical Aggression and Spirituality

But it also happens that spirituality is sometimes found to have no relationship with physical aggression. This most seems to happen when spirituality is defined by personal matters of spiritual practice, such as private meditation or prayer and memorization of inspiring scriptures. In one study, the practice of meditation, memorization of Bible verses, and levels of spiritual transcendence were not associated with increases or decreases in physical aggression (Leach, Berman, & Eubanks, 2008). Specifically, the intrinsic versus extrinsic religious orientations were not associated with higher or lower physical aggression in a laboratory task, although the intrinsic as opposed to extrinsic religious orientation did result in self-reports of lower physical aggression (Leach, Berman, & Eubanks, 2008). Another time, the practice of prayer was not found to be related whatsoever to one's sympathy or support for suicide attacks among samples of Israelis and Palestinians (Ginges, Hansen, & Norenzayan, 2009).

Among 6 religions in 6 nations (Israeli Jews, Mexican Catholics, British Protestants, Russian Orthodox Christians, Indian Hindus, and Indonesian Muslims), the practice of prayer was not found to predict one's willingness for self-martyrdom in a suicide attack (Ginges,

Hansen, & Norenzayan, 2009). Another study found that levels of religiosity were unrelated to levels of physical aggression in a sample of male pre-adolescents and adolescents (Landau, Bjorkqvist, Lagerspetz, Osterman, & Gideon, 2002). As indicated by these studies, there is no relationship between physical aggression and spirituality, in contrast to studies presented earlier that did indicate a relationship, whether positive or negative. Clearly, more research is needed to understand these mixed results.

The Inverse Relationship between Verbal Aggression and Spirituality

In studies indicating an inverse relation between verbal aggression and spirituality, it has been found that religious belief in the sanctification of an interpersonal relationship by God is associated with lower levels of verbal aggression (Mahoney et al., 1999). Specifically, holding religious beliefs about the sacred qualities of one's marriage under God was found to be significantly related to less verbal aggression in a sample of married couples (Mahoney et al., 1999). However, it is unclear if the researchers measured the degree of physical aggression in these marriages, which is relevant in that physical aggression has been known to substitute for verbal aggression in other research (Murray-Swank, Mahoney, & Pargament, 2006). In another study, higher levels of religiosity were positively related to lower levels of verbal aggression in a sample of male pre-adolescents and adolescents (Landau, Bjorkqvist, Lagerspetz, Osterman, & Gideon, 2002).

According to other research, religious belief in the sanctification of parenting by God was significantly related to less verbal aggression toward children by conservative religious mothers, though this was perhaps because the mothers acknowledged using more physical aggression (Murray-Swank, Mahoney, & Pargament, 2006). It is noteworthy that, in this latter study, the same parents who held religious beliefs about the sanctification of parenting

by God and as a result used less verbal aggression against their children also used significantly more physical aggression to induce child obedience. Having physically frightened but obedient children might, in the eyes of the parents, lead them to report having a happier and less verbally aggressive relationship with their children, despite exhibiting physical aggression toward them. Thus, even if religious beliefs about the sanctification of an interpersonal relationship by God help to reduce verbal aggression, it may only occur because such religious beliefs endorse the use of physical aggression instead.

The Positive Relationship between Verbal Aggression and Spirituality

Higher levels of verbal aggression have been tied to higher levels of spirituality when a personal relationship with God is triangulated against one's relationship with others. That is, using God as a defense or ally against someone, even for the claimed purpose of forgiving that person for an offense, can elevate one's level of verbal aggression (Krumrei, Mahoney, & Pargament, 2008). For example, the experience of turning to God to forgive an ex-spouse following divorce was significantly related to more verbal aggression one year later in a sample of adult men and women (Krumrei, Mahoney, & Pargament, 2008). Theistic triangulation, or invoking God and religious faith as an ally or defense during conflict, was also significantly related to higher levels of verbal aggression in samples of college students and their parents (Brelsford & Mahoney, 2009). Thus, some research indicates a link between higher levels of verbal aggression and higher levels of spirituality.

The Lack of Relationship between Verbal Aggression and Spirituality

But at times, no relationship whatsoever has been found between verbal aggression and spirituality. In one study, levels of religiosity were not associated with levels of verbal aggression in a sample of female pre-adolescents and adolescents (Landau, Bjorkqvist,

Lagerspetz, Osterman, & Gideon, 2002). This is in contrast to the other studies presented earlier that did indicate a relationship, whether positive or negative. Apparently, more research is needed to understand these mixed results.

The Inverse Relationship between Cognitive Aggression and Spirituality

From the following survey of research, cognitive aggression (most often defined as hostility) appears to have an inverse relationship with spirituality. The use of contemplative prayer in solitude was found to be associated with significantly lower levels of cognitive aggression in a sample of religious persons (Stavros, 1998). The level of universality experienced in one's spirituality was significantly related to lower cognitive aggression in another sample of religious persons (Goodman, 2003). Relaxation response-based meditation practice was associated with significant increases in spiritual well-being and, simultaneously, significant decreases in cognitive aggression in one study (Chang, Casey, Dusek, & Benson, 2010). Higher levels of spiritual mindfulness were significantly associated with lower levels of cognitive aggression in a sample of long-term practitioners of mindfulness meditation (Yi, 2009). And, higher quest religion was found to be significantly associated with lower cognitive aggression (i.e. authoritarianism) in a sample of religious persons (Ji & Kyung, 2008).

In another study, increased religiosity was significantly inversely linked to decreased cognitive aggression through greater forgiveness (Lutjen, Silton, & Flannelly, 2012). Having received an upbringing in a formal religion was found to be significantly predictive of lower levels of cognitive aggression in an incarcerated adult sample (Lonczak et al., 2006). In an inmate sample of recovering addicts, it was found that participants' levels of cognitive aggression were more significantly reduced in a recovery program that offered an

experiential-spiritual component rather than just a social support component (Chen, 2006). Treatment at a residential facility encouraging religion within a bio-psycho-socio-spiritual model was found to be significantly associated with reduction in levels of cognitive aggression among a sample of violent psychiatric prison inmates (Scarnati, 1991). Also, higher levels of spiritual perspective (i.e. spiritual thinking) were associated with lower levels of cognitive aggression in a sample of battered women living in shelters (Humphreys, 2000). The above studies have suggested an inverse relationship between cognitive aggression and spirituality.

The Positive Relationship between Cognitive Aggression and Spirituality

On the other hand, numerous studies indicate higher levels of cognitive aggression (most often hostility) are associated with higher levels of spirituality (e.g., religiosity). For instance, prayer fulfillment was significantly associated with higher levels of cognitive aggression in a sample of self-identified religious persons (Goodman, 2003). Among 6 religions in 6 nations (Israeli Jews, Mexican Catholics, British Protestants, Russian Orthodox Christians, Indian Hindus, and Indonesian Muslims), regular attendance at religious services was found to positively predict cognitive aggression and out-group hostility (Ginges, Hansen, & Norenzayan, 2009). In a sample of university students and their parents, higher levels of religious fundamentalism and non-questing religion were significantly associated with higher levels of cognitive aggression (i.e. authoritarianism and prejudice) toward an array of minority communities (Altemeyer & Hunsberger, 1992). Intrinsic religion was found to significantly increase cognitive aggression (i.e. authoritarianism) in several samples of self-identified religious persons (Ji & Kyung, 2008). Religious conservatism was found to be a significant predictor of cognitive aggression (i.e. vengeful attitudes) in an adult sample

(Cota-McKinley, Woody, & Bell, 2001). In addition, the experience of turning to God to forgive an ex-spouse was significantly associated with increased cognitive aggression (i.e. demonizing attitudes) toward the ex-spouse (Krumrei, Mahoney, & Pargament, 2008). Higher levels of cognitive aggression, therefore, seem to be related to higher levels of spirituality.

The Lack of Relationship between Cognitive Aggression and Spirituality

Yet, the following study seems to suggest that levels of cognitive aggression are not related whatsoever to levels of spirituality. Both doctrinal faith and quest religion were found not to be associated with cognitive aggression (i.e. authoritarianism) among several samples of self-identified religious persons (Ji & Kyung, 2008). As indicated by this study, there is no relationship between cognitive aggression and spirituality, in contrast to other studies presented earlier that did indicate a relationship, whether positive or negative. Evidently, more research is needed to understand these mixed results.

The Inverse Relationship between Emotional Aggression and Spirituality

From the following survey of research, emotional aggression (most often defined as anger) appears to have an inverse relationship with spirituality. In one study, higher levels of religiosity were significantly related to lower feelings and needs of emotional aggression among religious leaders-in-training as compared with a normative group of the general sample (Blass, 1979). In another religious sample, it was found that stronger feelings of emotional aggression were a significant negative predictor of higher levels of spirituality (Zainuddin, 1993). A religious prime (memory cue) was found to decrease feelings of emotional aggression resultant from social rejection in several samples of self-identified religious persons (Aydin, Fischer, & Frey, 2010). And, weekly church attendance was

significantly related to fewer feelings of emotional aggression in a sample of pre-adolescent religious children in Britain (Abbotts et al., 2004). Further, religious concerns were found to be significantly negatively related to feelings and needs of emotional aggression in a sample of psychiatric patients (Lowe, 1968). The above studies have suggested an inverse relationship between emotional aggression and spirituality.

The Positive Relationship between Emotional Aggression and Spirituality

On the other hand, one study indicated that higher levels of emotional aggression (i.e. anger) were associated with higher levels of spirituality (i.e. religiosity). In a study that likely revealed feelings of anger projected onto others, religious participants were found to perceive and rate feelings of anger or needs for emotional aggression among out-group members as significantly higher than their fellow religious members (Husain, 1984). Higher levels of emotional aggression, therefore, seem to be related to higher levels of spirituality.

The Lack of Relationship between Emotional Aggression and Spirituality

Yet, the following study seems to suggest that levels of emotional aggression are not related whatsoever to levels of spirituality. Specifically, daily spiritual experiences and religious support were not found to predict emotional aggression in a sample of veterans with combat-related PTSD (Didion, 2009). As indicated by this study, there is no relationship between emotional aggression and spirituality, in contrast to other studies presented earlier that did indicate a relationship, whether positive or negative. Obviously, more research is needed to understand these mixed results.

The Inverse Relationship between Relational Aggression and Spirituality

Some studies seem to suggest that relational aggression and spirituality are inversely related (Landau, Bjorkqvist, Lagerspetz, Osterman, & Gideon, 2002; Mahoney et al., 1999;

Murray-Swank, Mahoney, & Pargament, 2006). According to one study, higher levels of religiosity were positively related to lower levels of relational aggression in a sample of male pre-adolescents and adolescents (Landau, Bjorkqvist, Lagerspetz, Osterman, & Gideon, 2002). In other research, holding religious beliefs about the sacred qualities and sanctification of one's marriage under God was found to be significantly related to less relational aggression (i.e. marital conflict) in a sample of married couples (Mahoney et al., 1999). However, it is unclear if the researchers of this latter study measured the degree of physical aggression in these marriages, which is relevant in that physical aggression has been known to substitute for relational aggression in other research (Murray-Swank, Mahoney, & Pargament, 2006). For instance, religious belief in the sanctification of parenting by God was significantly related to less relational aggression toward children by conservative religious mothers, though this was perhaps because the mothers acknowledged using more physical aggression (Murray-Swank, Mahoney, & Pargament, 2006). Thus, even if religious beliefs about the sanctification of an interpersonal relationship by God help to reduce relational aggression, it may only occur because such religious beliefs endorse the use of physical aggression instead.

The Positive Relationship between Relational Aggression and Spirituality

The connection between relational aggression and spirituality can also be unhealthy when a personal relationship with God is triangulated against one's relationship with others. Theistic triangulation, or invoking God and religious faith as an ally or defense during conflict, was significantly related to higher levels of relational aggression (i.e. stonewalling and intentionally ignoring someone) in samples of college students and their parents

(Brelsford & Mahoney, 2009). Thus, there is some research indicating a positive relationship between higher levels of relational aggression and higher levels of spirituality.

The Lack of Relationship between Relational Aggression and Spirituality

In one study, however, spirituality did not correlate at all with relational aggression. Religious adults were found to not rely on relational aggression when managing hypothetical minor problems of daily life (Saroglou et al., 2005). This may be the case because the issues of daily life presented to the participants did not necessarily involve conflicts in their relationships with others, so they did not need to triangulate their relationship with God in opposition to their relationship with an offending person who hurt them. In these minor scenarios of daily annoyances, which do not involve great offenses that threaten a relationship with someone, spirituality does not seem to be associated with relational aggression. As indicated by this study (Saroglou et al., 2005), there is no relationship between relational aggression and spirituality, in contrast to the other studies presented earlier that did indicate a relationship, whether positive or negative. Undoubtedly, more research is needed to understand these mixed results.

The Definition and Dimensions of Spirituality

As observed in this review of the literature, the connection between aggression and spirituality is anything but simple, and one reason for the complexity may be due to the troubling nature of trying to define and measure spirituality. In fact, one of the most prominent concerns in the study of spirituality is the difficulty encountered in defining it, and researchers have previously noted there are numerous semantic issues around the presumed meaning of the term "spirituality" (Miller & Thoresen, 2003; Wildman & McNamara, 2010). Without an adequate definition, it is difficult to measure spirituality and its various

dimensions, because it is a vague and loosely used word that has come to mean everything from church attendance to cosmic consciousness. There are many definitions of spirituality but, according to one study, the exact number is 40 (Hill et al., 2000). Another study found the precise number of definitions to be 92 (Bregman, 2006). Spirituality has historically been synonymous with religiosity, and it was not until the broader cultural trends toward increased individualization, the proliferation of religious pluralism, and the emergence of secularism at the beginning of the 20th century that spirituality began to mean something other than mere religiosity (Bregman, 2006; Pargament, 1999; Zinnbauer et al., 1997). As late as 1902, psychologist William James was still defining religion as "the feelings, acts, and experiences of individual men in their solitude… in relation to whatever they may consider the divine" (1961, p. 42). However, this definition more closely resembles what would today be considered spirituality, because religiosity and spirituality were still highly conflated at the time that James penned his words and were not perceived to be sufficiently distinct until shortly thereafter.

For the purposes of this study, spirituality was defined as, "The feelings, thoughts [or beliefs], experiences, and behaviors that arise from a search for the sacred. The term "search" refers to attempts to identify, articulate, maintain, or transform. The term "sacred" refers to a divine being, divine object, Ultimate Reality, or Ultimate Truth as perceived by the individual" (Hill et al., 2000, p. 66). This is in contrast to religion, which is also a search for the sacred as described above but additionally includes, "A search for non-sacred goals (such as identity, belongingness, meaning, health, or wellness)… [and] The means or methods (e.g., rituals or prescribed behaviors) of the search [for the sacred] that receive validation and support within an identifiable group of people" (Hill et al., 2000, p. 66). An

extremely similar definition that captures the importance of the expressive nature of spirituality is by Family Therapist Jeff Power, who wrote, "Spirituality is the individual *expression* (primarily through action, ritual, art, etc.) of the felt sense of there being a profound mystery at the heart of all existence [italics added]" (Crago, 2003, p. iii). It is for this reason that the Expressions of Spirituality Inventory focuses on the external manifestations of spirituality and, thus, succeeds in making quantifiable something seemingly qualitative. According to MacDonald (2000a), there are certain assumptions of the definition, dimensions, meaning, and measurement of spirituality, in particular as construed by the ESI:

> "These assumptions can be summarized as follows: (a) spirituality is a multidimensional construct that includes complex experiential, cognitive, affective, physiological, behavioral, and social components; (b) spirituality is inherently an experiential phenomenon/construct that includes experiences labeled spiritual, religious, peak, mystical, transpersonal, transcendent, and numinous; (c) spirituality is accessible to all people and qualitative and quantitative differences in the expressions of spirituality can be measured across individuals; (d) spirituality is not synonymous with religion but reflects a construct domain that includes intrinsic religiousness; and (e) spirituality includes paranormal beliefs, experiences, and practices" (p. 158).

Although it is difficult to take direct measurements of spirituality, which is by its very nature a personal and subjective experience (Miller & Thoresen, 2003), this does not mean spirituality cannot be quantified. Consistent with MacDonald's (2000a) assumptions listed above, spirituality has "cognitive, affective, physiological, behavioral, and social components" (p. 158) that can indeed be measured, for the purpose of the present study, in order to correlate them with cognitive, emotional, physical, verbal, and relational aggression. As Miller and Thoresen (2003) noted, "Throughout its history, science has studied phenomena that were or are not directly observable but that could be inferred indirectly

through predicted effects. A current example is string theory in the field of physics… [it] has 11 dimensions, none of which have yet been observed" (p. 25). There are many phenomena in the world that are invisible and intangible while still being measurable through inferential means.

Hence, spirituality can be scientifically measured by its outward expressions and manifested effects (MacDonald et al., 1995; MacDonald, 1997, 2000a, 2000b; Power, in Crago, 2003). The Expressions of Spirituality Inventory (ESI) model is comprised of five quantifiable dimensions, spanning Cognitive Orientation toward Spirituality (COS), Existential Well-Being (EWB), Experiential-Phenomenological Dimension (EPD), Paranormal Beliefs (PAR), and Religiousness (REL) (MacDonald, 2000a). The five dimensions of the ESI will now be reviewed individually, along with the findings of the three studies (Burns, 2004; Curby, 2004; MacDonald, 1997) that assessed each of their specific relations to aggression. In addition, another study (Huber & MacDonald, 2012) that assessed the relations of the ESI dimensions to the opposite factors of aggression, namely altruism and empathy, will also be reviewed.

Cognitive Orientation toward Spirituality (COS)

The COS dimension of the ESI refers to expressions of spiritualty which can be described as cognitive-perceptual in quality, including attitudes, beliefs, thoughts, and points of view about spirituality (MacDonald, 2000a). This cognitive-perceptual component pertains to one's understanding of the nature and importance of spirituality and its degree of relevance to personal functioning. COS does not directly deal with the expression of religious beliefs, but it has been shown to be strongly linked to it (MacDonald, 2000a). In terms of the relation of COS to aggression, some research has indicated that COS is not

associated to relational aggression in a sample of college students (Curby, 2004). In one study, higher levels of COS were significantly related to lower levels of emotional aggression in a sample of adolescent males in high school (statistics unavailable) (Burns, 2004). Other research suggested that COS is significantly negatively correlated with emotional aggression in a sample of college students ($r = -.16$, $p < .01$) (MacDonald, 1997). For the opposite factors of aggression, altruism was significantly positively related to COS (partial $r = .23$, $p < .05$), and empathy was significantly positively related to COS (partial $r = .33$, $p < .001$) in a sample of college students (Huber & MacDonald, 2012).

Existential Well-Being (EWB)

The EWB dimension of the ESI refers to one's sense of meaning or purpose for life (MacDonald, 2000a). It also suggests a view of oneself as adaptable, competent, resilient, and capable of coping with the boundaries, challenges, and finitude of human existence (MacDonald, 2000a). In terms of the relation of EWB to aggression, some research has indicated a significant inverse relationship between EWB and relational aggression ($r = -.19$, $p < .05$) in a sample of male and female college students (Curby, 2004). In another study, higher levels of EWB were significantly related to lower levels of emotional aggression in a sample of adolescent males in high school (statistics unavailable) (Burns, 2004). Other research suggested that EWB is significantly negatively correlated with emotional aggression in a sample of college students ($r = -.39$, $p < .001$) (MacDonald, 1997). For the opposite factors of aggression, altruism was not found to relate and empathy was found to significantly negatively relate to EWB (partial $r = -.24$, $p < .001$) in a sample of college students (Huber & MacDonald, 2012). According to a literature review by Niesta, Fritsche, and Jonas (2008) on mortality salience and its relation to peace and violence, the effects of

mortality salience (anxious awareness of death; i.e. low existential well-being) include physical, verbal, relational, and emotional aggression. This may explain why previous studies have found an association between high existential well-being (EWB) and low emotional aggression (Burns, 2004) as well as low empathy for others (Huber & MacDonald, 2012), with the latter finding because high EWB persons may tend to accept or feel undisturbed by not only their own negative emotions but also that of others.

Despite the assumption that aggression is bad, Fletcher and Milton (2010) suggest that aggression is not bad per se and, in fact, is quite healthy when the associated feelings (i.e. anger) are acknowledged and embraced to enable the option of accepting them and letting them go without acting upon them. Aggression only becomes bad when acted upon because it initiates an aggression cycle, in which the recipient of aggression in turn retaliates and thereby increases one's original aggression (Fletcher & Milton, 2010). That is to say, a moderate amount of emotional aggression is a normal part of living and thus a healthy experience when admitted and accepted, while other forms of aggression (i.e. physical, verbal, and relational) involve acting out one's feelings of (emotional) aggression and are thus unhealthy experiences to be rejected. This may explain why persons high on the ESI Existential Well-Being scale, which measures acceptance of and comfort with one's feelings, tend to have low scores on emotional aggression (Burns, 2004) as well as low scores on empathy for others (Huber & MacDonald, 2012), the latter indicating that high EWB persons accept not only their own but others' bad emotions without feeling the need to change them or act upon them.

Experiential-Phenomenological Dimension (EPD)

The EPD dimension of the ESI refers to expressions of spirituality that involve experiences which might be called divine, mystical, numinous, peak, religious, sacred, self-transcendent, or transpersonal (MacDonald, 2000a). There is some indication that EPD might share minimal overlap with certain altered states of consciousness and other unusual experiences, but extensive research nevertheless suggests that EPD is still a distinct and discernable factor (MacDonald, 2000a). In terms of the relation of EPD to aggression, one study did not find any relationship between EPD and relational aggression in a sample of college students (Curby, 2004). In another study, EPD was not related to emotional aggression in a sample of adolescent males in high school (Burns, 2004). Other research suggested that EPD is not linked to emotional aggression in a sample of college students (MacDonald, 1997). For the opposite factors of aggression, both altruism and empathy were found to significantly positively relate to EPD (partial $r = .32$, $p < .001$; partial $r = .18$, $p < .05$) (Huber & MacDonald, 2012).

Paranormal Beliefs (PAR)

The PAR dimension of the ESI refers to expressions of spirituality that involve faith in or the witnessing of paranormal events (MacDonald, 2000a). This may include belief in paranormal phenomena with a psychological slant (such as astral projection, extra sensory perception, precognition, and psychokinesis) or with a spiritual slant (such as ghosts, witchcraft, demonic possession, and communication with the dead) (MacDonald, 2000a). In terms of the relation of PAR to aggression, one study found that PAR was significantly positively related to relational aggression ($r = .21$, $p < .05$) in a sample of women but not men (Curby, 2004). In another study, PAR was not related to emotional aggression in a sample of adolescent males in high school (Burns, 2004). Other research suggested that PAR is not

linked to emotional aggression in a sample of college students (MacDonald, 1997). For the opposite factors of aggression, neither altruism nor empathy was found to relate to PAR in a sample of college students (Huber & MacDonald, 2012).

Religiousness (REL)

The REL dimension of the ESI refers to expressions of spirituality that involve religious beliefs, practices, and rituals, and most pertains to intrinsic rather than extrinsic religiosity (MacDonald, 2000a). REL seems to capture more Western-style (Judeo-Christian) religiosity and is strongly linked to the COS dimension of spirituality, but is nonetheless a divergent and unique factor (MacDonald, 2000a). In terms of the relation of REL to aggression, one study found that REL was significantly positively related to relational aggression ($r = .19$, $p < .05$) in a sample of women but not men (Curby, 2004). In another study, REL was not related to emotional aggression in a sample of adolescent males in high school (Burns, 2004). Other research suggested that REL is not linked to emotional aggression in a sample of college students (MacDonald, 1997). For the opposite factors of aggression, altruism was not found to relate and empathy was found to significantly positively relate to REL (partial $r = .26$, $p < .001$) in a college student sample (Huber & MacDonald, 2012).

The Present Study and Hypotheses

It has by now been observed that there are many gaps in past research on aggression and spirituality and major problems with the interpretation of conflicting results. This collision of findings has produced a number of mixed outcomes, with constructive, destructive, and no relations found on various occasions. These past outcomes have been ambiguous and incomplete at best, and it seems evident that the relations between aggression

and spirituality, whatever they are, must be complex and interwoven. The main reasons for all of the conflicting results have been the lack of attention to and measurement of the different forms of aggression and the unique dimensions of spirituality, although the previously described studies may give clues as to what should be expected. But more research on the subject is warranted, and the current study is needed to help determine the direction and extent of the associations between these factors. Consequently, the present study sought to fill these gaps and resolve these problems by approaching them in a way that has never been attempted: It examined the relationships among five different forms of aggression and five unique dimensions of spirituality.

Given the earlier literature review, it was conjectured that significant correlations would indeed be found, and the following three hypotheses were tested. First, it was hypothesized that results would indicate significant positive correlations between all five forms of aggression (physical, verbal, cognitive, emotional, and relational) and one ESI dimension of spirituality (REL). Second, it was hypothesized that results would indicate significant negative correlations observed between all five forms of aggression and three ESI dimensions of spirituality (COS, EPD, and EWB). Third, it was hypothesized that results would indicate no correlation at all between any form of aggression and one ESI dimension of spirituality (PAR).

A Path Model of Aggression and Spirituality

As described above, it was believed that significant correlations would be observed among certain forms of aggression and certain dimensions of spirituality. But it was also believed that their connections would extend beyond mere correlations, and that particular forms of aggression would cause other forms of aggression while spirituality influences this

causal relationship. Some past research has supported a theoretical model, called the revised frustration-aggression hypothesis, which suggests that frustration results in emotional and cognitive aggression, which in turn results in physical, verbal, and relational aggression (Berkowitz, 1988, 1989). In other words, there may be a causal pathway from lower forms of aggression, like emotional or cognitive, to higher forms of aggression, such as physical, verbal, or relational. But, no previous studies have explored all of the five kinds of aggression individually within the same study, nor have they searched for a comprehensive pathway model as the present inquiry does.

The current study tested the revised frustration-aggression hypothesis to determine if emotional and cognitive aggression does in fact lead to physical, verbal, and relational aggression. In addition, there was research to suggest that spirituality may moderate the causes of aggression (Saslow, Willer, Feinberg, Piff, Clark, Keltner, & Saturn, 2012). Since it was believed that some forms of aggression would be found to cause others, and since it was believed that spirituality would be related to both increases and decreases in these various forms of aggression, the present research examined the moderation effects that spirituality had on aggression. Not only was the current study the first to assess all five forms of aggression individually within the same study and try to map out a comprehensive causal pathway model, it was also the first to assess the moderation effects of spirituality upon such a model. The literature on the relations between different forms of aggression will be reviewed first, followed by a review of the literature on the moderating role played by spirituality on the directional pathways of different kinds of aggression.

The Revised Frustration-Aggression Hypothesis

Dollard, Doob, Miller, Mowrer, and Sears (1939) first developed the frustration-aggression hypothesis, which posited that a negative stimulus, like frustration, will increase the tendency toward aggression, whether or not the frustration is justified in the situation. The frustration-aggression hypothesis has been confirmed by a number of researchers over the years (Berkowitz, 1958, 1988, 1989; Dill & Anderson, 1995; Gustafson, 1989a, 1989b; Hokanson, 1961; Thompson & Kolstoe, 1974; Worchel, 1974), with only slight modifications to the original premise. For instance, Dill & Anderson (1995) found that unjustified frustration cultivates more aggression than justified frustration, and justified frustration cultivates more aggression than no frustration whatsoever. Also, Gustafson (1989a) found that unsuccessful attempts of aggression toward a frustrating stimulus only serve to increase aggression until the stimulus is finally aggressed against successfully. Due to his extensive studies of it, Berkowitz (1988; 1989) reformulated the frustration-aggression hypothesis to clarify that frustration only causes aggression to the extent that it generates negative affect or cognitions. This negative affect involves feelings of anger, rage, and emotional aggression, and these negative cognitions involve hostile thoughts, vengeful attitudes, and cognitive aggression. According to the revised frustration-aggression hypothesis, the emotional or cognitive aggression that results from frustration can lead to physical, verbal, and relational aggression (Berkowitz, 1988, 1989).

For emotional aggression, a number of studies have indicated that it can predict and sometimes mediate other kinds of aggression, including physical, verbal, and relational (Fives, Kong, Fuller, & DiGiuseppe, 2011; Guerra, Huesmann, & Zelli, 1993; Lajunen & Parker, 2001; Peterson, 1997; Smits & Kuppens, 2005). Emotional aggression was found to predict physical and verbal aggression in a sample of incarcerated juveniles (Peterson, 1997).

Emotional aggression (i.e. anger-out coping style) was found to be associated with physical and verbal aggression in a sample of adults (Smits & Kuppens, 2005). Another study suggested that emotional aggression predicted physical, verbal, and relational aggression in a sample of adolescent students (Fives, Kong, Fuller, & DiGiuseppe, 2011). Emotional aggression, combined with cognitive aggression, was found to predict physical aggression in a sample of delinquent institutionalized boys, but not in non-delinquent high school boys (Guerra, Huesmann, & Zelli, 1993). Furthermore, emotional aggression has been found to mediate the effects of verbal aggression on physical aggression (in the form of road rage while driving) (Lajunen & Parker, 2001). Hence, there is sufficient evidence to suggest that emotional aggression may lead to other kinds of aggression.

For cognitive aggression, some research suggests that it can predict and sometimes mediate other kinds of aggression, including physical, verbal, and relational (DeWall, Twenge, Gitter, & Baumeister, 2009; Fives, Kong, Fuller, & DiGiuseppe, 2011; Gentile, Coyne, & Walsh, 2011; Guerra, Huesmann, & Zelli, 1993; Lento-Zwolinski, 2007; Quiggle, Garber, Panak, & Dodge, 1992). Cognitive aggression (in the form of hostility) was related to physical aggression in a sample of male but not female college students, while cognitive aggression (in the form of exclusivity) was related to relational aggression in a sample of female but not male college students (Lento-Zwolinski, 2007). Another study suggested that cognitive aggression (i.e. irrational belief of intolerance of rules frustration) predicted physical and relational aggression in a sample of adolescent students (Fives, Kong, Fuller, & DiGiuseppe, 2011). Cognitive aggression was also found to be associated with physical and verbal aggression in a sample of adults who experienced social exclusion in several experiments (DeWall, Twenge, Gitter, & Baumeister, 2009). Cognitive aggression was tied

to increased likelihood of physical and verbal aggression in a sample of middle school children (Quiggle, Garber, Panak, & Dodge, 1992). In addition, cognitive aggression was found to mediate the effects of exposure to media violence on higher levels of physical, verbal, and relational aggression in a sample of middle school children (Gentile, Coyne, & Walsh, 2011). Moreover, cognitive aggression, combined with emotional aggression, was found to predict physical aggression in a sample of delinquent institutionalized boys, but not in non-delinquent high school boys (Guerra, Huesmann, & Zelli, 1993). As can be seen in the research cited, there is reason to believe that cognitive aggression may lead to other kinds of aggression. For the other kinds of aggression, however, no previous studies have examined if they are causally linked, if relational aggression causes verbal aggression, or if verbal aggression causes physical aggression.

Spirituality Moderates the Path of Aggression

By now it has been shown that psychological aggression in the form of emotional and cognitive aggression (resulting from any frustration) can lead to behavioral aggression in the form of physical, verbal, and relational aggression. However, little research has explored these directional links between the forms of aggression as they are moderated by the dimensions of spirituality. Just one previous study (Saslow, Willer, Feinberg, Piff, Clark, Keltner, & Saturn, 2012) is known to have examined the moderation effects of religiousness on the relationships of emotion to behavior, although in this case it was pro-social rather than anti-social (aggressive) emotion and behavior. Saslow et al. (2012) found that religiosity had a significant moderation effect on the relationship between compassion and pro-social behavior, and religious people were actually less generous than non-religious people. In terms of particular dimensions of spirituality, it has been previously demonstrated that the

religiousness (REL) dimension is predictive of increased emotional aggression (Husain, 1984), cognitive aggression (Ginges, Hansen, & Norenzayan, 2009), physical aggression (Bottoms, Nielsen, Murray, & Filipas, 2004; Bushman et al., 2007; Kanin, 1971), verbal aggression (Krumrei, Mahoney, & Pargament, 2008), and relational aggression (Curby, 2004). But more studies are needed in order to more fully understand the moderating role played by spirituality, especially religiosity, on the pathways of all forms of aggression, not just cognitive and emotional.

Additional Hypotheses of the Present Study

Given this review of the current literature, it appeared reasonable to expect that a significant directional association would be found between emotional, cognitive, relational, verbal, and physical aggression, with the emotional and cognitive forms predicting the physical, verbal, and relational forms. With this expectation in mind, it was hypothesized that spirituality would serve a moderating role between the former two forms of psychological aggression and the latter three forms of behavioral aggression. Religiousness was specifically expected to demonstrate a significant moderating effect. It was believed that religiousness would interact with psychological aggression (emotional and cognitive forms) to significantly predict behavioral aggression (physical, verbal, and relational forms), such that the relationship would hold true for people high versus low in religiousness.

Chapter 3

Methods

Participants

This study utilized archival data gathered by the present author from a sample of 209 volunteer students that were enrolled at a Mid-Western Catholic university. The age range was 18 years and older, and the only exclusionary criteria were ages younger than 18 years.

Measures

The instruments used for this research included the self-report Expressions of Spirituality Inventory – Revised (ESI; MacDonald, 2000a; 2000b), Aggression Questionnaire (AQ; Buss & Perry, 1992), Revised Self-Report of Aggression & Social Behavior Measure (SRASBM; Morales, 1999), and the Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1984; 1991).

Expressions of Spirituality Inventory (ESI; MacDonald, 2000a; 2000b). The ESI comes in two forms, a parent 98 item test and an abbreviated 30 item test, both of which have 2 additional items that measure face validity and respondent honesty. The shorter ESI version was used for the present research and asked participants to rate their answers to such questions as, "Spirituality is an important part of who I am as a person," on a 5 point Likert scale ranging from 0 (Strongly Disagree) to 4 (Strongly Agree). The ESI measures five distinct dimensions of spirituality, developed through factor analysis of 18 available tests of spirituality and related constructs, and includes Cognitive Orientation toward Spirituality (COS), Experiential- Phenomenological Dimension (EPD), Existential Well-Being (EWB), Paranormal Beliefs (PAR), and Religiousness (REL). COS is a construct relating to a

person's attitudes and beliefs (cognitions) about the nature and importance of spirituality, in addition to a person's values and views (perceptions) about the relevance and significance of spirituality for one's global life functioning. EPD relates to a person's spiritual expressions through mystical or self-transcendent experiences. EWB concerns a person's sense of meaning, spiritual life purpose, and one's acceptance as well as personal security in facing the inevitable difficulties of human existence. PAR is a construct measuring a person's belief in para-psychological phenomenon (e.g., precognition). REL concerns a person's spiritual expression through conventional religious faith and devotional practice (e.g., church attendance), and this seems to correspond with more Judeo-Christian Western religiosity as well as intrinsic-oriented rather than extrinsic-oriented religiosity. The ESI has strong inter-item reliability, ranging from .80 to .89 for the different scales, and strong item-to-corrected-dimension correlations, ranging from .40 to .80 for the different scales. All five scales of the ESI also have strong construct (convergent) validity with other related instruments, including the Assessment Schedule for Altered States of Consciousness (Van Quekelberghe, Alstotter-Gleich, & Hertwick, 1991), Death Transcendence Scale (Hood & Morris, 1983; Vandecreek & Nye, 1993), Ego Permissiveness Inventory (Taft, 1969), Intrinsic-Extrinsic Religious Orientation Scale (Allport & Ross, 1967), Spirituality Self-Assessment Scale (Whitfield, 1984; Corrington, 1989), Spiritual Well-Being Questionnaire (Moberg, 1984), and the Spiritual Well-Being Scale (Ellison, 1983; Paloutzian & Ellison, 1982).

Aggression Questionnaire (AQ; Buss & Perry, 1992). The AQ is a 29 item survey where participants rate their answers to questions on a 5 point Likert scale ranging from 1 (Extremely uncharacteristic) to 5 (Extremely characteristic). The AQ is comprised of four subscales, including Physical Aggression, Verbal Aggression, Anger, and Hostility. The

Physical Aggression subscale includes such questions as, “Once in a while I can’t control my urge to strike another person”. The Verbal Aggression subscale includes such questions as, “I can’t help getting into arguments when people disagree with me”. The Cognitive Aggression (i.e. Hostility) subscale includes such questions as, “I am suspicious of overly friendly strangers”. The Emotional Aggression (i.e. Anger) subscale includes such questions as, “I sometimes feel like a powder keg ready to explode”. The AQ has satisfactory internal consistency and scale reliability of .85 for physical aggression, .72 for verbal aggression, .82 for anger, and .80 for hostility. The AQ has satisfactory concurrent and construct validity and test-retest reliability for each subscale ranging from .72 to .80.

Revised Self-Report of Aggression & Social Behavior Measure (SRASBM; Morales, 1999). The SRASBM is a 56 item survey where participants rate their answers to questions on a 7 point Likert scale ranging from 1 (Not at all true) to 7 (Very true). If respondents have not been involved in a romantic relationship within the last year, they are instructed to pass the romantic partner-related questions, which are identified with an asterisk. This measure was designed to assess peer-directed proactive and reactive relational aggression, peer relational victimization, romantic partner relational aggression, romantic partner relational victimization, proactive and reactive physical aggression, and peer and romantic partner physical victimization (Crick & Grotpeter, 1995, 1996; Linder, Crick, & Collins, 2002; Morales, 1999). The three subscales of the SRASBM that will be used include the Peer-Directed Proactive Relational Aggression subscale, the Peer-Directed Reactive Relational Aggression subscale, and the Romantic Partner Relational Aggression subscale. The Peer-Directed Proactive Relational Aggression subscale is comprised of such questions as, “I have threatened to share private information about my friends with other people in order to get

them to comply with my wishes". The Peer-Directed Reactive Relational Aggression subscale is comprised of such questions as, "When someone does something that makes me angry, I try to embarrass that person or make them look stupid in front of her or his friends". The Romantic Partner Relational Aggression subscale is comprised of such questions as, "I have threatened to break up with a romantic partner in order to get her or him to do what I wanted". The SRASBM has been shown to have satisfactory reliability (above .70) and one month test-retest reliability (over .75). Individual subscales have demonstrated satisfactory inter-item consistency ranging from .67 to .83.

Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1984; 1991). Zahn-Waxler (1991) criticized the work of other researchers on social attitudes for the potential effects of social desirability when measuring persons' self-reported level of empathy, which would also apply to level of altruism. In order to protect against such social impression management, the BIDR was administered to research subjects in order to detect participants' attempts at deliberate deceit (through impression management) and self-deception (through unconscious denial). The BIDR is a 40 item survey where participants rate their answers to such questions as, "I sometimes tell lies if I have to," on a 7 point Likert scale ranging from 1 (Not True) to 7 (Very True). The BIDR has a strong internal consistency (reliability) of .83, adequate retest interval reliability ranging from .65 to .69, strong concurrent and convergent validity of .80 with the Multi-dimensional Social Desirability Inventory (Jacobson, Kellogg, Cauce, & Slavin, 1977), and satisfactory discriminant validity.

Procedure

The present author recruited 209 participants through a short presentation given to undergraduate-level psychology courses. As an incentive for participation, potential recruits

were offered course extra credit from the instructor. IRB approval was obtained prior to data collection. All interested students were given informed consent forms and self-report questionnaires to complete on their own time and return to their Professor or the Principal Investigator.

Chapter 4

Planned Data Analyses

Means, standard deviations, and minimum and maximum scores would be calculated for all measures used. Product-moment correlation, partial correlations (controlling for the effects of age, gender, and social desirability), standard multiple regressions, and path analyses would be conducted on the data that were obtained from participants. Data analyses would be controlled for age, gender, and social desirability, given each of these three factors could unduly confound and influence results for aggression and spirituality (Landau, Bjorkqvist, Lagerspetz, Osterman, & Gideon, 2002). The aforementioned statistical procedures would be used to test three main hypotheses. First, it was hypothesized that results would indicate significant positive correlations between all five forms of aggression (physical, verbal, cognitive, emotional, and relational) and one ESI dimension of spirituality (REL). Second, it was hypothesized that results would indicate significant negative correlations observed between all five forms of aggression and three ESI dimensions of spirituality (COS, EPD, and EWB). Third, it was hypothesized that results would indicate no correlation at all between any form of aggression and one ESI dimension of spirituality (PAR).

The present study had five independent (predictor) variables, which were the five ESI dimensions of spirituality (COS, EWB, EPD, PAR, REL). There were also five dependent (outcome) variables comprised of the five forms of aggression (physical, verbal, cognitive, emotional, and relational). Product-moment correlations would provide a good index of how linear the relationship is between components of aggression and spirituality, and what degree

of strength may exist between the variables (Tabachnick & Fidell, 2001). Partial correlations would provide a good summary of the degree of strength between the variables by controlling for the effects of other variables, namely age, gender, and social desirability (Tabachnick & Fidell, 2001). Without adjusting for these extraneous factors, the results may be skewed since each is known to affect aggression and spirituality (Landau, Bjorkqvist, Lagerspetz, Osterman, & Gideon, 2002). And, standard multiple regressions would provide a good indicator of the predictive value of independent variables and the possibility of linear predictions of one outcome for a dependent variable (Tabachnick & Fidell, 2001). Taken together, all of the above statistical procedures would be able to analyze the links between the different independent and dependent variables and test the three hypotheses, in order to determine the nature and extent of any relationships between the five forms of aggression and five dimensions of spirituality.

In conducting the statistical analyses, the presence of any outliers in the data would need to be identified, an explanation attempted, and then, if appropriate, the outlier might need to be deleted, scored again, or transformed into another variable (Tabachnick & Fidell, 2001). In addition, pre-screening procedures prior to the regression analyses would be implemented through testing assumptions needed for normality (normal distribution of the error term and the constancy of error variance), linearity (as opposed to randomness), and homoscedasticity of residuals (the difference between observed values and predicted values of variables) (Tabachnick & Fidell, 2001). Singularity happens when a single independent variable is actually hiding an amalgamation of other independent variables, and multicollinearity happens when multiple independent variables are strongly associated with one another (Tabachnick & Fidell, 2001). The potential for singularity and multicollinearity

would be examined and duly addressed, for instance, by deleting problematic variables or utilizing ridge regression (stabilizing regression coefficients by amplifying the variance) where necessary if variables were not all independent linearly (Tabachnick & Fidell, 2001).

Tabachnick and Fidell (2001) suggest that, for testing multiple correlation and individual predictors with an assumption of medium effect size ($\alpha = .05$ and $\beta = .20$), one must calculate the minimal sample size (N) needed using two formulas and then choose the higher number of cases. The formula for testing multiple correlations is $N \geq 50 + 8m$, with m being the number of IVs. Given the present study had 5 IVs, then $N \geq 90$. The formula for testing individual predictors is $N \geq 104 + m$. Given the present study had 5 individual predictors, then $N \geq 109$. Since 109 is the higher number of cases, 109 participants were thus the minimal sample size required, which was satisfied by the 209 participants included in the archival data. Detection of statistical significance would be set at the 0.05 level of significance. By following all of the statistical analyses proposed, the three main hypotheses of this study would either be rejected or failed to be rejected.

Then after rejecting or failing to reject the three main hypotheses, the two additional hypotheses of this study would be tested to determine if the different forms of aggression can cause one another and if spirituality moderates any of these effects. A statistical procedure known as moderation path analysis would be used in addition to the standard multiple regressions, in order to decode the predictive sequencing of variables and test the revised frustration-aggression theory. The benefits of a path analysis are that it provides parameter estimates of the discernible magnitude of the causal effects, and it confirms or disconfirms that a specific model is congruent with the data observations (Grimm & Yarnold, 2004). The use of moderation path analysis makes certain assumptions, which include that all variables

have been correctly measured, all variables which belong in the model are present, no variables which do not belong in the model are present, the causal ordering of variables in the model is accurate, and there are no more than slim amounts of multi-collinearity (Grimm & Yarnold, 2004). If it was suspected that there were interaction effects between two or more independent variables and the dependent variable, then an interaction term would be introduced to the multiple regressions prior to conducting the moderation path analysis (Grimm & Yarnold, 2004). For sample size, Tabachnick and Fidell (2001) instructed that approximately 200 participants are helpful to have for a medium-sized path analysis. The 209 participants of the present study met this recommendation for the small to medium-sized directional model that was tested herein.

Chapter 5

Results

Data-Cleaning

There were a total of 209 questionnaires collected from participants. Data screening required the omission of twenty-six surveys that contained incomplete or spoiled answers as identified by at least one of the following: failure to answer the most fundamentally relevant questions (e.g., age and gender); recurring patterns of no responses, consistently extreme responses, or repetitious responses of a single answer; or evidence of untruthful responding (as indicated by a response to an ESI test item that asked participants if they answered truthfully). Since the sample overwhelmingly self-identified as Christian, the twenty-six surveys by persons with non-Christian religious affiliations were removed from the sample to strengthen the internal validity of the study. Of the remaining 157 participants, there were 38 males and 119 females with a mean age of 22.72 years (SD= 6.78, range of 18 to 62). In terms of ethnicity, the sample was comprised of 97 Caucasians, 40 African-Americans, 2 Asians/Pacific Islanders, 6 Hispanics, 5 Middle-Easterners, 3 Bi-racial, 2 American Indians/Alaskan Natives, and 2 Unspecified.

For the calculation of spirituality variables, there was an ESI scale that corresponded to each factor, including Cognitive Orientation toward Spirituality, Experiential-Phenomenological Dimension, Existential Well-Being, Paranormal, and Religiousness. For the calculation of aggression variables, there was an AQ scale that corresponded to four factors of aggression, including Physical, Verbal, Cognitive, and Emotional. A total AQ Aggression score was also calculated. For relational aggression, the two scales on the

SRASBM for peer-directed proactive and peer-directed reactive relational aggression were scored separately as well as combined to form one variable that represented a total peer-directed relational aggression score.

Descriptive Statistics and Reliabilities

Means, standard deviations, minimum and maximum scores, and inter-item reliability coefficients were calculated for all measures (see Table 1). Inspection of the descriptive statistics reveals that all measures produced adequate scores with acceptable score ranges. In terms of inter-item response consistency, reliability coefficients were found to be acceptable for all tests except Verbal Aggression, which was somewhat low (α=.58). All other reliability coefficients were satisfactory, including Cognitive Orientation toward Spirituality (α=.91), Experiential-Phenomenological Dimension (α=.81), Existential Well-Being (α=.81), Paranormal Beliefs (α=.71), Religiousness (α=.87), Physical Aggression (α=.79), Emotional Aggression (α=.75), Cognitive Aggression (α=.77), AQ Total Aggression (α=.88), Proactive Relational Aggression (α=.79), Reactive Relational Aggression (α=.74), and Total Relational Aggression (α=.85).

Correlations with Age, Gender, and Social Desirability

Next, correlations were calculated to examine the inter-relation of age, gender, and social desirability to the measures of aggression and spirituality (see Table 2). As can be seen in Table 2, age, gender, and social desirability were all significantly correlated with multiple variables. Age was significantly positively correlated with Cognitive Orientation toward Spirituality ($r=.18$, $p<.05$), Existential Well-Being ($r= .16$, $p<.05$), and Religiousness ($r=.25$, $p<.01$), and significantly negatively associated with Reactive Relational Aggression ($r= -.19$, $p<.05$) and Total Relational Aggression ($r= -.18$, $p<.05$). Gender (coded 1 for male

and 2 for female) was significantly positively correlated with Religiousness (r=.26, p<.001) and negatively correlated with Physical Aggression (r=-.24, p<.01), Proactive Relational Aggression (r= -.27, p<.01), Reactive Relational Aggression (r= -.19, p<.05), and Total Relational Aggression (r=-.25, p<.01).

Social desirability was significantly correlated with Cognitive Orientation toward Spirituality (r=.26, p<.01), Existential Well-Being (r=.39, p<.001), and Religiousness (r=.23, p<.01), and negatively correlated with Physical Aggression (r=-.29, p<.001), Verbal Aggression (r=-.28, p<.001), Emotional Aggression (r=-.41, p<.001), Cognitive Aggression (r=-.45, p<.001), Total AQ Aggression (r= -.46, p<.001), Proactive Relational Aggression (r= -.27, p<.01), Reactive Relational Aggression (r= -.45, p<.001) and Total Relational Aggression (r=-.41, p<.001).

Table 1

Descriptive Statistics and Reliabilities for all Variables of Interest

	Mean	SD	Min	Max	Alpha
ESI-Cognitive Orient. toward Spirituality	18.01	4.82	5	24	.91
ESI-Experiential-Phenom. Dimension	10.29	4.94	0	23	.81
ESI-Existential Well-Being	15.92	4.45	4	24	.81
ESI-Paranormal Beliefs	9.68	4.59	0	22	.71
ESI-Religiousness	18.22	4.66	2	24	.87
AQ-Physical Aggression	19.34	6.36	9	36	.79
AQ-Verbal Aggression	13.54	3.17	6	21	.58
AQ-Emotional Aggression	15.12	4.78	7	32	.75
AQ-Cognitive Aggression	18.43	5.66	8	34	.77
AQ-Total Aggression	66.43	15.69	38	107	.88
SRASBM-Proactive Relational Aggress.	6.34	3.16	4	18	.79
SRASBM-Reactive Relational Aggress.	9.47	4.39	5	22	.74
SRASBM-Total Relational Aggression	15.81	6.97	9	40	.85

Table 2

Correlations with Age, Gender, and Social Desirability with all Variables of Interest

	Age	Gender	Social Desirability
ESI-Cognitive Orientation toward Spirituality	.18*	.15	.26**
ESI-Experiential-Phenomenological Dimension	.12	.06	-.01
ESI-Existential Well-Being	.16*	.03	.39***
ESI-Paranormal Beliefs	-.07	.10	- .04
ESI-Religiousness	.25**	.26**	.23**
AQ-Physical Aggression	.02	-.24**	- .29***
AQ-Verbal Aggression	-.01	-.09	-.28***
AQ-Emotional Aggression	.02	-.05	-.41***
AQ-Cognitive Aggression	-.08	-.05	-.45***
AQ-Total Aggression	-.02	-.15	-.46***
SRASBM-Proactive Relational Aggression	-.14	-.27**	-.27**
SRASBM-Reactive Relational Aggression	-.19*	-.19*	-.45***
SRASBM-Total Relational Aggression	-.18*	-.25**	-.41***

Note. Gender was coded 1 for male and 2 for female in dataset. *= p<.05, **= p<.01, ***= p<.001.

Scale Inter-correlations

Correlations were also calculated to examine the inter-relation of the various dimensions of spirituality to each other (see Table 3) and the different facets of aggression to each other (see Table 4). Inspection of Table 3 reveals numerous significant correlations between the five dimensions of spirituality measured by the ESI. Cognitive Orientation toward Spirituality was significantly correlated with Experiential-Phenomenological Dimension ($r=.44$, $p<.001$) and Religiousness ($r=.85$, $p<.001$). Experiential-Phenomenological Dimension was significantly correlated with Paranormal Beliefs ($r=.30$, $p<.001$) and Religiousness ($r=.40$, $p<.001$). Lastly, Existential Well-Being was negatively correlated with Paranormal Beliefs ($r=-.18$, $p<.05$).

Examination of Table 4, which presents the correlations between the Aggression Questionnaire (AQ) and the Revised Self-Report of Aggression and Social Behavior Measure (SRASBM), shows numerous significant associations. In fact, all of the aggression variables were highly correlated with one another. Physical Aggression was significantly correlated with every other form of aggression, including Verbal ($r=.46$,$p<.001$), Emotional ($r=.54$, $p<.001$), Cognitive ($r=.44$, $p<.001$), Proactive Relational Aggression ($r= .28$, $p<.001$), Reactive Relational Aggression ($r= .37$, $p<.001$), and Total Relational Aggression ($r=.36$, $p<.001$). Verbal Aggression was significantly correlated with Emotional ($r=.54$, $p<.001$), Cognitive ($r=.41$, $p<.001$), Proactive Relational ($r= .32$, $p<.001$), Reactive Relational ($r= .31$, $p<.001$), and Total Relational ($r=.34$, $p<.001$). Emotional Aggression was significantly correlated with Cognitive ($r=.50$, $p<.001$), Proactive Relational ($r= .21$, $p<.01$), Reactive Relational ($r= .34$, $p<.001$), and Total Relational ($r=.31$, $p<.001$). Cognitive Aggression was significantly correlated with Proactive Relational ($r= .32$, $p<.001$), Reactive Relational ($r=$

.36, p<.001), and Total Relational (r=.37, p<.001). Proactive Relational Aggression was significantly associated with Reactive Relational Aggression (r= .69, p<.001) and the AQ Total Aggression Score (r= .36, p<.001). Reactive Relational Aggression was significantly correlated to the AQ Total score (r= .45, p<.001). Finally, Total Relational Aggression was significantly correlated to the AQ Total Score (r= .44, p<.001).

Table 3. Inter-correlations of Spirituality Variables

	COS	EPD	EWB	PAR
Cognitive Orientation toward Spirituality (COS)				
Experiential-Phenomenological Dimension (EPD)	.44***			
Existential Well-Being (EWB)	.13	.00		
Paranormal Beliefs (PAR)	.02	.30***	-.18*	
Religiousness (REL)	.85***	.40***	.11	.02

Note. *= p<.05, **= p<.01, ***= p<.001.

Table 4. Inter-correlations of Aggression Variables

	PA	VA	EA	CA	PRA	AQ Total
Physical Aggress. (PA)						
Verbal Aggress. (VA)	.46***					
Emotional Aggress. (EA)	.54***	.54***				
Cognitive Aggress. (CA)	.44***	.41***	.50***			
Proact. Relational Aggress. (PRA)	.28***	.32***	.21**	.32***		.36***
Reactive Relational Aggress. (RRA)	.37***	.31***	.34***	.36***	.69***	.45***
Total Relational Aggression (RA)	.36***	.34***	.31***	.37***		.44***

Note. AQ Total= Aggression Questionnaire Total Score. *= p<.05, **= p<.01, ***= p<.001.

Confirmatory Factor Analyses

In order to determine if the aggression and spirituality measures were performing in a manner consistent with their underlying theories for the sample, confirmatory factor analyses (CFAs) were conducted on the Expressions of Spirituality Inventory (ESI), the Aggression Questionnaire (AQ) and the SRASBM. The fact that a test may have demonstrated satisfactory psychometric properties with one sample does not imply it will necessarily be valid with any new sample. Since psychometric data does not automatically generalize across different samples, it is sensible to assess the reliability and validity of a measurement test to ensure that it is operating as intended. In particular, CFAs using maximum likelihood estimation were done in this study to evaluate the goodness of fit of four and five factor models for the ESI, two and four factor model for the AQ, and one and two factor models for the SRASBM. When attempting to confirm or disconfirm the quality of goodness of fit for a measurement model, it is considered best to test it against a competing, opposing model (Grimm & Yarnold, 2004). As such, multiple models were assessed for each of the measures.

For the ESI, while the measure has five discrete dimensions, the correlation between Cognitive Orientation toward Spirituality and Religiousness was sufficiently high (r=.85) with the present sample to suggest it would be relevant to also test a four factor model where both COS and Religiousness were assigned to a single factor. For the SRASBM, since proactive and reactive relational aggression are treated as two separate constructs on the test, it was deemed appropriate to test a two factor model. A one factor model, however, was also evaluated since the correlation between the two components of relational aggression was notably large. For the AQ, a four factor model was tested since the questionnaire is designed

to assess four unique forms of aggression. A two factor model made up of the items from the cognitive and emotional aggression scales on one factor and physical and verbal aggression items on the other was also evaluated in response to the fact that the present study was aimed at testing how psychological aggression predicted behavioral aggression. For all models involving more than one factor, factors were allowed to inter-correlate (see Figure 1 for the five factor CFA model for the ESI, Figure 2 for the four factor model of the AQ, and Figure 3 for the two factor model of the SRASBM).

CFA results for the ESI.

Considering the CFA results for the ESI first, Table 5 presents the standardized regression weights for both the four and five factor models as well as the overall model goodness-of-fit statistics. For the five factor model, all regression weights (analogous to factor loadings) were found to be significant at $p<.05$ or lower. Examination of estimated correlations in the five factor model show that five of 10 coefficients were significant at $p<.05$ or lower and includes COS and EPD (r= .58), COS and REL (r= .98), EPD and PAR (r= .32), EPD and REL (r= .51), and EWB and PAR (r= -.26). Model fit statistics provide somewhat mixed support for the correlated five factor model. On the negative side, chi-square emerged significant (χ^2=675.28, df= 395, $p<.001$) and multiple indices of fit which are generally expected to fall .90 or higher to reflect good fit did not produce acceptable values (e.g., GFI=.78, AGFI=.74, CFI=.88, IFI=.88, NFI=.75, RFI=.72, TLI=.86). But on the other hand, the chi-square/df ratio fell below the conventional cut off of 3.0 (x^2/df=1.69) and the Root Mean Square Error of Approximation fell below .08 (RMSEA= .07).

Looking at the findings for the correlated four factor model of the ESI, a virtually identical pattern of results was obtained to that with the five factor model. In particular, all

regression weights were significant at p<.05 or lower. With factor inter-correlations, three of the six coefficients emerged significant (p<.05 or lower) including those with the combined COS/REL and EPD (r= .55), EPD and PAR (r= .32), and EWB and PAR (r= -.26). Lastly, fit statistics for the correlated four factor model for the ESI showed similar values and provided the same mixed support. (χ^2=675.28, p<.000, x^2/df=1.69, GFI=.78, AGFI=.74, CFI=.88, IFI=.88, NFI=.75, RFI=.72, TLI=.86, RMSEA=.07).

Since the four and five factor models use the same observed variables, the two models can be conceived as nested. Consequently, they can be directly compared to each other to evaluate whether or not one model demonstrates superior fit to the other by determining if the change in chi-square between the models is statistically significant. The change in chi-square between four and five factor models is 6.06 with the five factor model having the smaller value. Using the change in degrees of freedom (change in df from five to four factor model = 4) to assess significance, this difference in chi-square between four and five factor models is not significant (p>.05), thus indicating that neither model is better than the other in fitting the data.

Figure 1. Correlated Five Factor Model for Expressions of Spirituality Inventory (ESI)

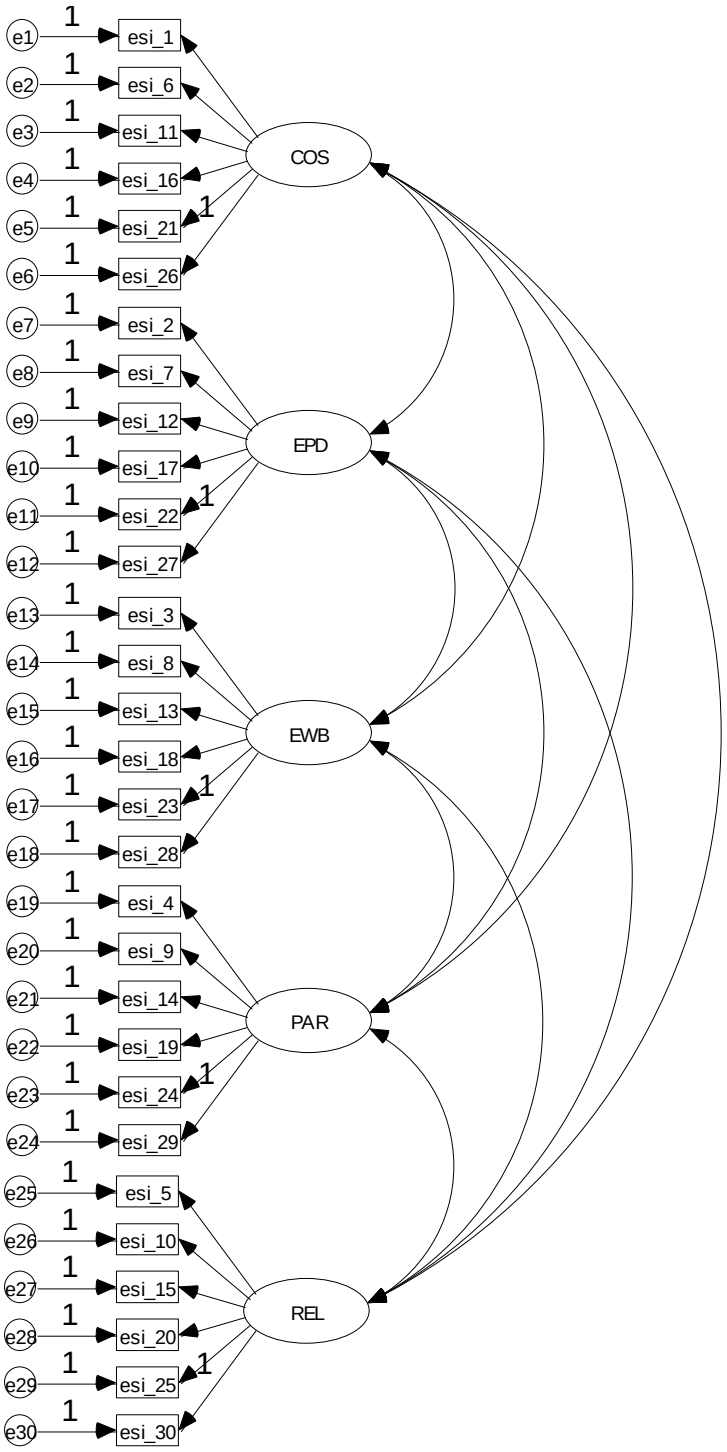


Figure 2. Correlated Four Factor Model of Aggression Questionnaire (AQ)

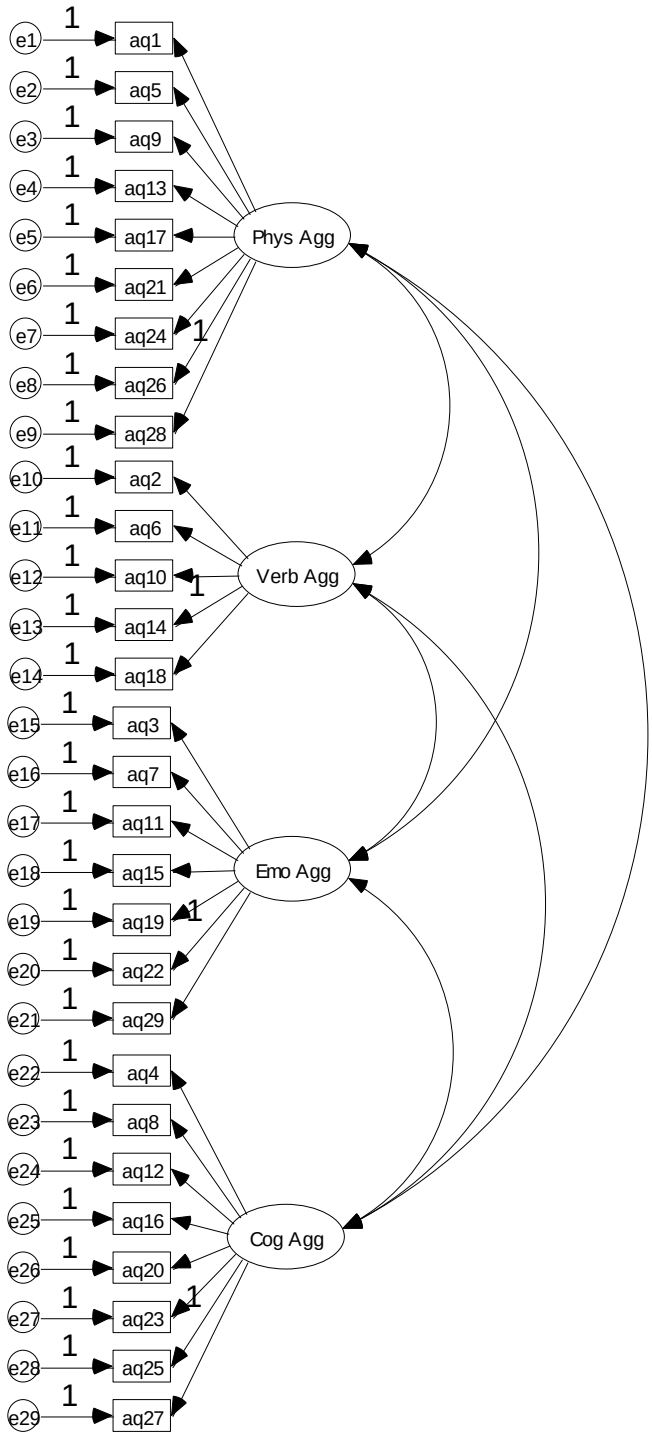


Figure 3. Correlated Two Factor Model of Revised Self-Report of Aggression & Social Behavior Measure (SRASBM) for Relational Aggression

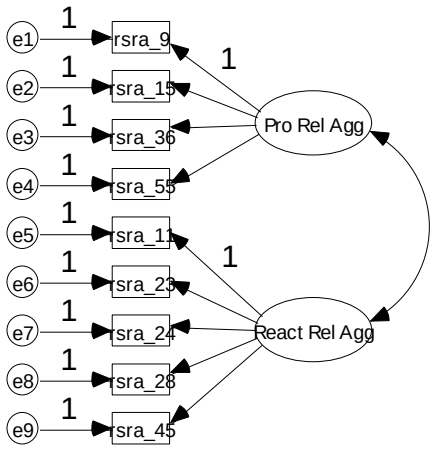


Table 5. Confirmatory Factor Analyses of ESI: Standardized regression weights and fit statistics for correlated five and four factor models

	Five Factor					Four Factor			
	1	2	3	4	5	1	2	3	4
Item									
Cognitive Orientation toward Spirituality									
1	.84	---	---	---	---	.84	---	---	---
6	.70	---	---	---	---	.70	---	---	---
11	.85	---	---	---	---	.85	---	---	---
16	.62	---	---	---	---	.62	---	---	---
21	.84	---	---	---	---	.84	---	---	---
26	.88	---	---	---	---	.88	---	---	---
Experiential-Phenomenological Dimension									
2	---	.60	---	---	---	---	.57	---	---
7	---	.47	---	---	---	---	.47	---	---
12	---	.57	---	---	---	---	.57	---	---
17	---	.79	---	---	---	---	.80	---	---
22	---	.67	---	---	---	---	.68	---	---
27	---	.73	---	---	---	---	.72	---	---
Existential Well-Being									
3	---	---	.54	---	---	---	---	.54	---
8	---	---	.63	---	---	---	---	.63	---
13	---	---	.76	---	---	---	---	.76	---
18	---	---	.64	---	---	---	---	.64	---
23	---	---	.70	---	---	---	---	.70	---
28	---	---	.65	---	---	---	---	.65	---
Paranormal Beliefs									
4	---	---	---	.62	---	---	---	---	.62
9	---	---	---	.57	---	---	---	---	.57
14	---	---	---	.54	---	---	---	---	.55
19	---	---	---	.30	---	---	---	---	.30
24	---	---	---	.67	---	---	---	---	.67
29	---	---	---	.57	---	---	---	---	.57

Table 5 continues…

	Five Factor					Four Factor			
	1	2	3	4	5	1	2	3	4
Item									
Religiousness									
5	---	---	---	---	.63	.62	---	---	---
10	---	---	---	---	.84	.83	---	---	---
15	---	---	---	---	.77	.75	---	---	---
20	---	---	---	---	.71	.72	---	---	---
25	---	---	---	---	.73	.72	---	---	---
30	---	---	---	---	.72	.71	---	---	---
Factor inter-correlations									
COS						COSREL			
EPD	.58*					EPD	.55*		
EWB	.15	.00				EWB	.14	.00	
PAR	.01	.32*	-.26*			PAR	.01	.32*	-.26*
REL	.98*	.51*	.11	.02					
Fit indices									
χ^2		669.22					675.28		
Df		395					399		
χ^2/df		1.69					1.69		
GFI		.78					.78		
AGFI		.74					.74		
NFI		.75					.75		
RFI		.72					.72		
IFI		.88					.88		
TLI		.86					.86		
CFI		.88					.88		
RMSEA		.07					.07		

Note. All regression weights significant at p<.05 or lower. For factor inter-correlations *= significant at p<.05 or lower

CFA results for the AQ.

Looking next at the CFA results for the AQ, Table 6 presents the standardized regression weights, correlations, and fit statistics for both the correlated two and four factor models. Considering the four factor model first, all regression weights were found to be significant at $p<.05$ or lower as were all correlations between the factors. However, overall model fit statistics show mixed-to-poor support for the model. Chi-square came out significant ($\chi^2=771.59$, df= 371, $p<.001$) and, other than the chi-square/df ratio falling below 3.0 and the RMSEA falling at the minimum acceptable value, all other fit indices are values that fall well below acceptability.

The correlated two-factor model, where items from physical and verbal aggression were assigned to a behavioral aggression factor and items from cognitive and emotional aggression were assigned to a psychological aggression factor, produced significant regression weights for all items and a significant correlation between the two factors. However, like the four-factor model, overall fit indices provide only marginal support for the model. In fact, the only acceptable value came from the chi-square/df ratio, which falls below 3.0. Given that the two models were nested, the change in chi-square was evaluated for significance. Based upon the difference (change in chi-square= 96.04, change in df= 1, $p<.001$), it appeared that the two-factor model demonstrates a significantly poorer fit to the data as compared to the four-factor model.

Table 6. Confirmatory Factor Analyses of Aggression Questionnaire: Standardized regression weights and fit statistics for correlated four and two factor models

	Four Factor				Two Factor	
	1	2	3	4	1	2
Item						
Physical Aggression (PA)						
1	.50	---	---	---	.49	---
5	.58	---	---	---	.58	---
9	.50	---	---	---	.47	---
13	.41	---	---	---	.42	---
17	.46	---	---	---	.44	---
21	.76	---	---	---	.71	---
24	.28	---	---	---	.24	---
26	.63	---	---	---	.63	---
28	.72	---	---	---	.71	---
Verbal Aggression (VA)						
2	---	.22	---	---	.22	---
6	---	.47	---	---	.42	---
10	---	.36	---	---	.34	---
14	---	.56	---	---	.49	---
18	---	.64	---	---	.49	---
Emotional Aggression (EA)						
3	---	---	.37	---	---	.39
7	---	---	.41	---	---	.42
11	---	---	.52	---	---	.61
15	---	---	.71	---	---	.60
19	---	---	.77	---	---	.69
22	---	---	.74	---	---	.66
29	---	---	.50	---	---	.42
Cognitive Aggression (CA)						
4	---	---	---	.49	---	.44
8	---	---	---	.57	---	.47
12	---	---	---	.46	---	.36
16	---	---	---	.65	---	.68
20	---	---	---	.48	---	.40
23	---	---	---	.52	---	.37

Table 6 continues…

	Four Factor				Two Factor	
	1	2	3	4	1	2
Item						
25	---	---	---	.54	---	.42
27	---	---	---	.59	---	.46
Factor inter-correlations						
PA					Behavioral	
VA	.70*				Psychological	.81*
EA	.70*	.84*				
CA	.61*	.61*	.60*			
Fit indices						
χ^2	771.59				867.61	
Df	371				376	
χ^2/df	2.08				2.31	
GFI	.75				.71	
AGFI	.71				.67	
NFI	.56				.51	
RFI	.52				.47	
IFI	.71				.65	
TLI	.68				.61	
CFI	.71				.64	
RMSEA	.08				.09	

Note. All regression weights significant at p<.05 or lower. For factor inter-correlations, *= significant at p<.05 or lower

CFA results for the SRASBM.

Finally, results for the one- and two-factor models for the SRASBM can be found in Table 7. Looking at the findings for the correlated two factor model first, all regression weights emerged significant at $p<.05$ or lower as did the correlation between the two factors ($r= .90$). Overall fit statistics are similar to those for the two-factor model and, while chi-square came out significant ($p<.05$), all other fit statistics provide evidence of satisfactory fit. Examination of the change in chi-square (difference= 6.42, difference in df= 1) showed that the two-factor model provides a significantly better fit to the data ($p<.05$).

Table 7. Confirmatory Factor Analyses of SRASBM: Standardized regression weights and fit statistics for correlated two and one factor models

	Two Factor		
	1	2	One Factor
Item			
Proactive Relational Aggression (Proactive)			
9	.60	---	.59
15	.72	---	.70
36	.81	---	.80
55	.67	---	.66
Reactive Relational Aggression (Reactive)			
11	---	.54	.54
23	---	.68	.65
24	---	.69	.66
28	---	.54	.51
45	---	.58	.57
Factor inter-correlation			
Proactive Reactive	.90*		
Fit indices			
χ^2	40.40		46.82
Df	26		27
χ^2/df	1.55		1.73
GFI	.94		.94
AGFI	.90		.89
NFI	.92		.90
RFI	.88		.87
IFI	.97		.96
TLI	.96		.94
CFI	.97		.96
RMSEA	.06		.07

Note. All regression weights significant at $p<.05$ or lower. For factor inter-correlations, *= significant at $p<.05$ or lower

Correlations between Aggression and Spirituality

Bivariate, multiple, and partial correlations (controlling for age, gender, and social desirability) were all calculated to examine the relations of the different forms of aggression (Physical, Verbal, Emotional, Cognitive, Relational) to the various dimensions of spirituality (Cognitive Orientation toward Spirituality, Experiential-Phenomenological Dimension, Existential Well-Being, Paranormal Beliefs, Religiousness).

Bivariate and multiple correlations.

Bivariate correlations looked at the zero-order correlations between aggression and spirituality. Multiple correlations were also calculated using standard regressions to examine how the combination of all five ESI dimensions was associated with each form of aggression and, alternatively, how the combination of all six forms of aggression (i.e., physical, verbal, cognitive, emotional, proactive relational, and reactive relational) was associated with each dimension of spirituality. Examination of Table 8 shows numerous significant correlations between the forms of aggression and expressions of spirituality.

Cognitive Orientation toward Spirituality was negatively correlated with Physical Aggression ($r= -.20$, $p<.05$), Cognitive Aggression ($r= -.30$, $p<.001$), Reactive Relational Aggression ($r= -.28$, $p<.001$), the Total AQ score ($r= -.23$, $p<.01$) and Total Relational Aggression ($r= -.23$, $p<.01$). When using the six aggression subscales as predictors of Cognitive Orientation, the multiple correlation emerged significant ($R= .42$, $p<.001$, $R^2= .18$). Existential Well-Being was significantly negatively correlated to Physical Aggression ($r= -.29$, $p<.001$), Verbal Aggression ($r= -.32$, $p<.001$), Emotional Aggression ($r= -.40$, $p<.001$), Cognitive Aggression ($r= -.52$, $p<.001$), Proactive Relational Aggression ($r= -1.9$, $p<.05$), Reactive Relational Aggression ($r= -.26$, $p<.01$), AQ total score ($r= -.49$, $p<.001$),

and Total Relational Aggression (r=-.23, p<.01). When using the six forms of aggression as predictors of Existential Well-Being, the multiple correlation came out significant (R= .55, p<.001, R^2= .31). Religiousness was significantly negatively correlated with Physical Aggression (r=-.17, p<.05), Verbal Aggression (r=-.16, p<.05), Cognitive Aggression (r=-.29, p<.001), Reactive Relational Aggression (r= -.30, p<.001), AQ total score (r= -.22, p<.01), and Total Relational Aggression (r= -.25, p<.01). When using the six forms of aggression as predictors of Religiousness, the multiple correlation was significant (R= .41, p<.001, R^2= .17).

Paranormal Beliefs produced significant positive correlations with Verbal Aggression (r= .17, p<.05), Emotional Aggression (r= .21, p<.01), Cognitive Aggression (r= .25, p<.01) and the AQ total (r= .22, p<.01). In a regression with the aggression scores as predictors and Paranormal Beliefs as the criterion, the multiple correlation was significant (R= .22, p<.01, R^2= .10). The Experiential/Phenomenological Dimension was the only component of spirituality that did not generate any significant correlations. When using the five ESI dimensions as predictors in regressions, the multiple correlations emerged significant for Physical Aggression (R= .35, p<.01, R^2= .12), Verbal Aggression (R= .37, p<.001, R^2= .14), Emotional Aggression (R= .43, p<.001, R^2= 18), Cognitive Aggression (R= .61, p<.001, R^2= .37), Proactive Relational Aggression (R= .27, p<.05, R^2= .08), Reactive Relational Aggression (R= .43, p<.001, R^2= .18), AQ total score (R= .55, p<.001, R^2= .30), and Total Relational Aggression (R= .39, p<.001, R^2= .15).

Table 8. Bivariate and Multiple Correlations between Aggression and Spirituality

	ESI Dimensions						
	COS	EPD	EWB	PAR	REL	Mult. R	R^2
Aggression subscales							
Physical	-.20*	.00	-.29***	.07	-.17*	.35**	.12
Verbal	-.10	-.01	-.32***	.17*	-.16*	.37***	.14
Emotional	-.06	.06	-.40***	.21**	-.05	.43***	.18
Cognitive	-.30***	.02	-.52***	.25**	-.29***	.61***	.37
Proact. Relational	-.12	.09	-.19*	.13	-.15	.27*	.08
React. Relational	-.28***	.06	-.26**	.07	-.30***	.43***	.18
Multiple R	.42***	.13	.55***	.31*	.41***		
R^2	.18	.02	.31	.09	.17		
Aggression Total Scores							
AQ Total	-.23**	.02	-.49***	.22**	-.22**	.55***	.30
Total Relational	-.23**	.08	-.25**	.10	-.25**	.39***	.15

Note. COS= Cognitive Orientation toward Spirituality, EPD= Experiential-Phenomenological Dimension, EWB= Existential Well-Being, PAR= Paranormal Beliefs, REL= Religiousness, Mult. R= Multiple R. Psychological and Behavioral Aggression scores were not included in the standard regressions as predictors. *= p<.05, **= p<.01, ***= p<.001.

Partial correlations.

Considering the fact that many spirituality and aggression variables were found to correlate significantly with social desirability and several also correlated significantly with age and gender, partial correlations were calculated to examine the inter-relation of aggression and spirituality while controlling for the effects of these potential confounding variables (see Table 9). Examination of the partial correlations in the table shows a variety of significant coefficients. However, in comparison with the bivariate correlations reported in Table 8, the number and magnitude of significant partial correlations is notably smaller in virtually all cases except Paranormal Beliefs and Experiential-Phenomenological Dimension.

For instance, while Cognitive Orientation toward Spirituality (COS) was found to produce significant negative zero-order correlations with Physical, Cognitive, Reactive Relational aggression scores as well as the AQ total and Total Relational scores, COS only produced one significant negative partial correlation with Cognitive Aggression (partial $r = -.21$, $p < .05$). Existential Well-Being (EWB) generated significant negative zero-order correlations with all aggression scores but with the partial correlations was found to produce significant negative coefficients with Physical Aggression (partial $r = -.21$, $p < .01$), Verbal Aggression (partial $r = -.25$, $p < .01$), Emotional Aggression (partial $r = -.30$, $p < .001$), Cognitive Aggression (partial $r = -.42$, $p < .001$), and the AQ total score (partial $r = -.39$, $p < .001$). While obtaining significant negative zero-order correlations with Physical, Verbal, Cognitive, and Reactive Relational Aggression along with the AQ total and Total Relational Aggression scores, Religiousness was found to produce a significant negative partial correlation with only Cognitive Aggression (partial $r = -.20$, $p < .05$). Paranormal Beliefs obtained significant positive zero-order correlations with Verbal, Emotional and Cognitive Aggression as well as

the AQ total score. With the partial correlations, Paranormal Beliefs was again found to be significantly positively correlated with Verbal Aggression (partial r= .18, p<.05), Emotional Aggression (r= .23, p<.01), Cognitive Aggression (partial r= .27, p<.01), and the AQ total (partial r= .25, p<.01). Similar to the zero-order bivariate correlations, the ESI Experiential-Phenomenological Dimension did not produce any significant partial correlations.

Table 9. Partial Correlations between Spirituality and Aggression Controlling for Age, Gender, and Social Desirability

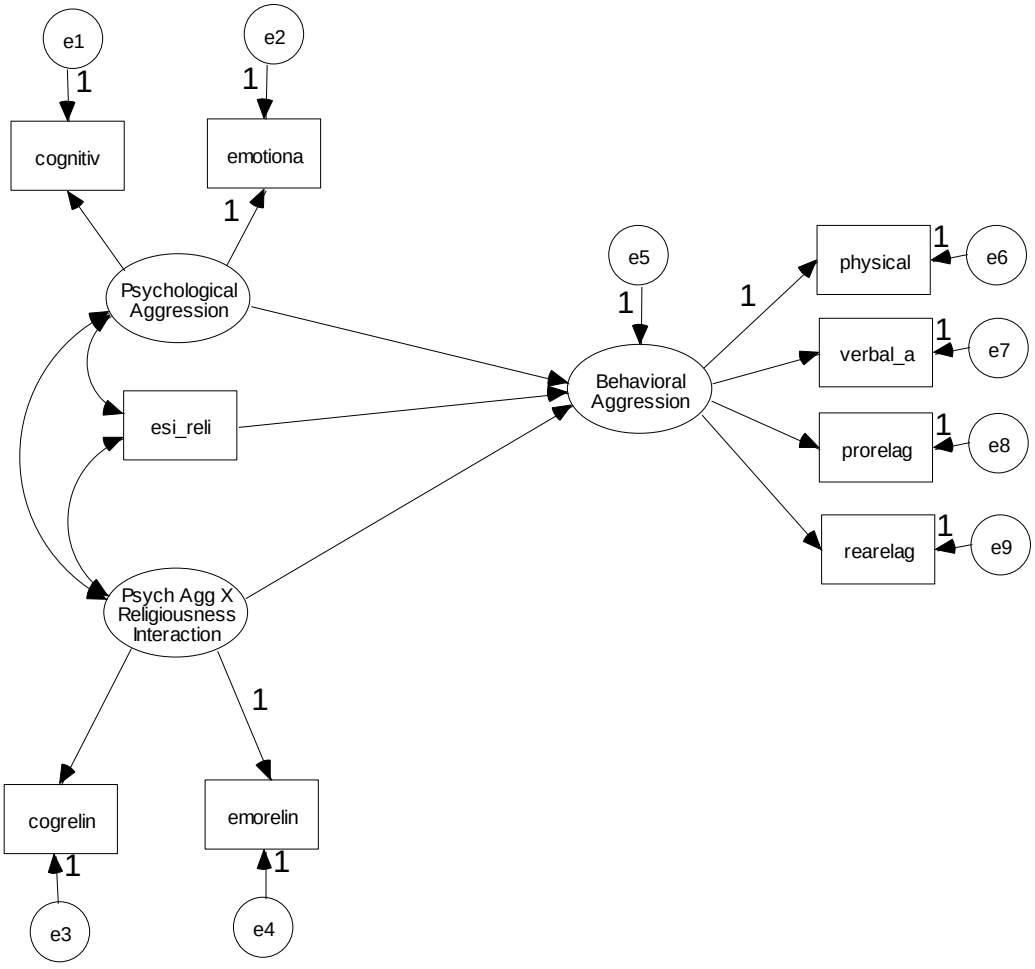
	ESI Dimensions				
	COS	EPD	EWB	PAR	REL
Aggression					
Physical	-.12	.01	-.21**	.10	-.07
Verbal	-.02	-.00	-.25**	.18*	-.09
Emotional	.05	.06	-.30***	.23**	.05
Cognitive	-.21*	.03	-.42***	.27**	-.20*
AQ Total	-.12	.04	-.39***	.25**	-.11
Proactive Relational	.01	.13	-.07	.15	.01
Reactive Relational	-.15	.11	-.08	.08	-.15
Total Relational	-.09	.13	-.08	.12	-.09

Note. COS= Cognitive Orientation toward Spirituality, EPD= Experiential-Phenomenological Dimension, EWB= Existential Well-Being, PAR= Paranormal Beliefs, REL= Religiousness. df= 152. *= p<.05, **= p<.01, ***= p<.001.

Moderation Analyses

In order to test the potential moderation effects of religiousness on the relationship between psychological and behavioral aggression, a directional hybrid structural equation model where the latent construct of psychological aggression, operationalized as a measurement model comprised of emotional and cognitive aggression, ESI Religiousness as an observed variable, and a latent interaction variable comprised of the products of religiousness with emotional and cognitive aggression respectively, were used to predict behavioral aggression. In the model, behavioral aggression was specified with a measurement model made up of verbal aggression, physical aggression, proactive relational aggression, and reactive relational aggression. The complete model can be seen in Figure 4.

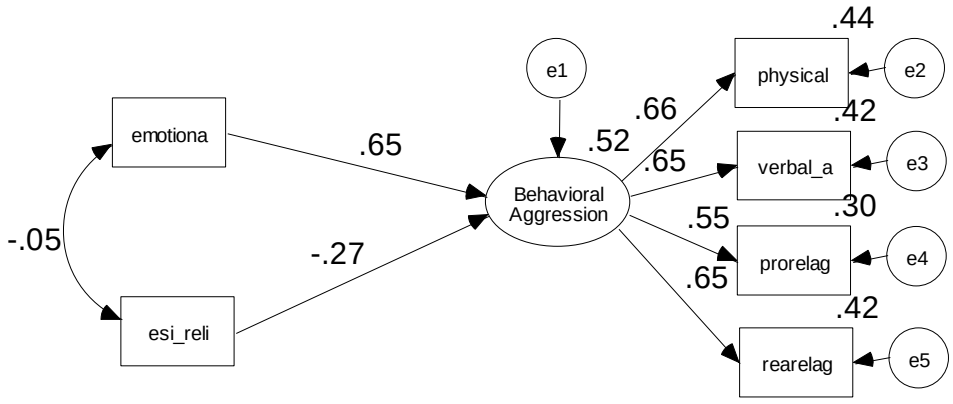
Figure 4. Directional hybrid model testing for the moderation effect of religiousness on the relation of psychological aggression to behavioral aggression.



When running the analysis to generate maximum likelihood estimates for model parameters and overall model goodness of fit statistics, it was discovered that the covariance matrix was nonpositive definite. Experts in SEM (e.g., Kline, 1998) state this usually occurs due to high correlatedness between variables in the model suggesting problems with bivariate and/or multivariate multicollinearity. Given this fact, and following the advice of Kline (1998), the model was revised in order to eliminate any variables that were not absolutely needed to test the hypothesized moderation effect. In particular, when considering the two forms of aggression used to represent psychological aggression (i.e., cognitive and emotional), it was decided to create and test two separate models using cognitive and emotional aggression as observed exogenous variables. It was also decided that the models would be first be tested in a simplified form by examining the predictive power of each aggression variable along with religiousness without the inclusion of the interaction term. Afterwards, the model was re-tested with the interaction term included.

Considering first the model involving emotional aggression and religiousness as direct linear predictors of behavioral aggression without the inclusion of the interaction term, maximum likelihood estimates emerged significant at $p<.05$ or less for all parameters except for the covariance between emotional aggression and religiousness which was found to be non-significant. Religiousness emerged as a significant negative predictor of behavioral aggression (see Figure 5 for standardized parameter estimates, i.e., correlations, path coefficients, and factor loadings).

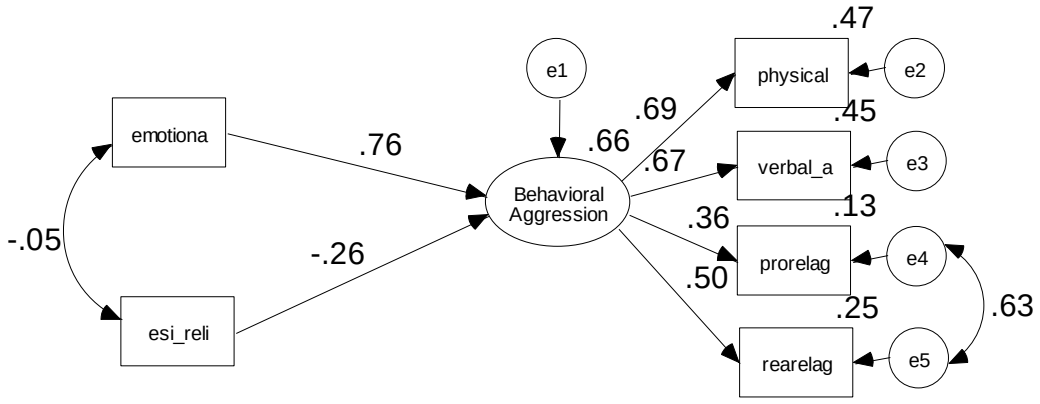
Figure 5. Path model examining the effects of emotional aggression and religiousness on behavioral aggression with standardized parameter estimates



Despite the finding of significant parameter estimates, examination of overall model fit statistics revealed that the model did not demonstrate a very good fit to the data (e.g., Chi-square= 84.53, df= 8, p<.001, Chi-square/df= 10.57, GFI= .85, AGFI= .61, NFI= .69, RFI= .42, IFI= .71, TLI- .44, CFI= .70, RMSEA= .25). In an effort to re-specify the model so as to improve model fit, modification indices (i.e., a statistic akin to a chi-square with 1 degree of freedom, which indicates the extent to which a change in a model parameter will result in a change in model fit; Byrne, 2001) were calculated. Inspection of these indices revealed that if the error terms associated with reactive and proactive relational aggression were permitted to correlate, the model would demonstrate improved fit. Since these two forms of relational aggression have been found to be significantly inter-correlated (see Table 4), it appeared reasonable to think that they would not only share common variance due to their ostensible conceptual similarity but that they would also be likely to share unintended systematic variance as a function of item and test content and format. As a result, the model was re-specified allowing these error terms to be correlated. Figure 6 presents the re-specified model along with parameter estimates.

Consistent with the initial model, all parameter estimates save the correlation between emotional aggression and religiousness came out significant at p<.05 or less. The correlation between the relational aggression error terms also came out significant. Overall model fit, however, was substantially improved as reflected in considerably better fit indices (e.g., Chi-square= 15.60, df= 7, p<.05; chi-square/df= 2.23; GFI= .97, AGFI= .91, NFI= .94, RFI= .88, IFI= .97, TLI= .93, CFI= .97, RMSEA= .09). Based upon this, it was decided that the relational aggression error terms would be allowed to correlate for all remaining models.

Figure 6. Revised path model examining the effects of emotional aggression and religiousness on behavioral aggression with standardized parameter estimates



Next, the path model for emotional aggression and religiousness with the interaction term included was tested. Figure 7 presents the model along with standardized parameter estimates. All parameter estimates came out significant at $p<.05$ or lower except for the correlation between religiousness and emotional aggression as well as the path coefficients from religiousness to behavioral aggression and the interaction term (i.e., emorelin) and behavioral aggression. This indicates that religiousness does not have a significant moderating effect on the relationship of emotional aggression to behavioral aggression. In fact, given that the path between religiousness and behavioral aggression came out non-significant, the results suggest that the interaction term is having a suppressor effect on religiousness. Examination of overall fit statistics show that the model fit to the data is very satisfactory (e.g., Chi-square= 17.61, df= 10, $p>.05$; Chi-square/df= 1.76, GFI= .97, AGFI= .92, NFI= .98, RFI= .95, IFI= .99, TLI= .98, CFI= .99, RMSEA= .07).

The directional model involving cognitive aggression and religiousness as predictors of behavioral aggression without the inclusion of the interaction term was tested next. Figure 8 presents the model as well as the standardized parameter estimates. All parameter estimates save the path between religiousness and behavioral aggression emerged significant at $p<.05$ or lower. Model fit indices all fall within acceptable ranges, indicating that the model provides a good fit to the data (e.g., Chi-square= 10.48, df= 7, $p>.05$; Chi-square/df= 1.50, GFI= .98, AGFI= .94, NFI= .96, RFI= .91, IFI= .99, TLI= .97, CFI= .99, RMSEA= .06). Figure 9 presents the path model of cognitive aggression and religiousness with the interaction term included. The figure shows all standardized parameter estimates.

For this moderated model, all estimated parameters came out significant at $p<.05$ or lower except for the paths between religiousness and behavioral aggression and the

interaction term (i.e., cogrelin) and behavioral aggression. Akin to the model with emotional aggression, this model indicates that religiousness does not have a moderating effect on the relation of cognitive aggression to behavioral aggression. Model fit indices indicate excellent fit of the overall model to the data (e.g., Chi-square= 13.42, df= 10, $p>.05$; Chi-square/df= 1.34, GFI= .98, AGFI= .93, NFI= .98, RFI= .96, IFI= 1.0, TLI= .99, CFI= 1.0, RMSEA= .05).

Figure 7. Standardized parameter estimates for model testing moderating effect of religiousness on relation of emotional aggression to behavioral aggression.

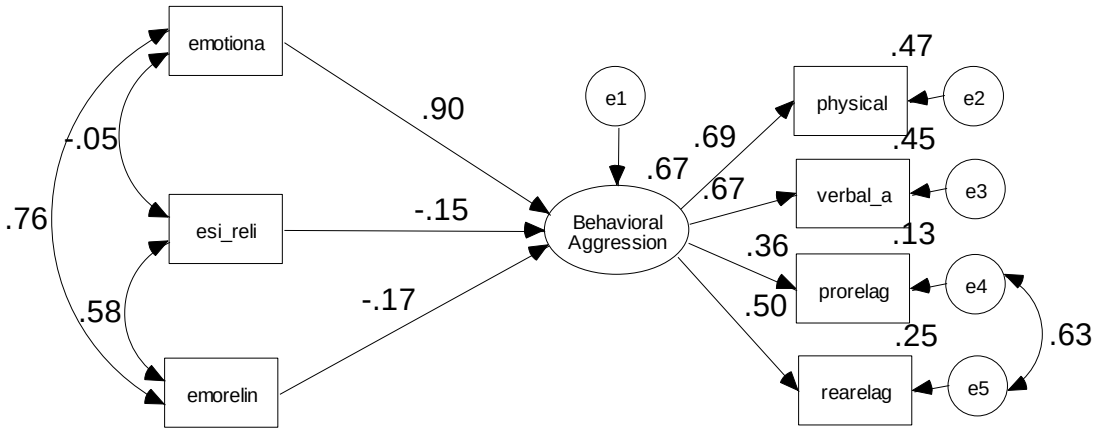


Figure 8. Path model examining the effects of cognitive aggression and religiousness on behavioral aggression with standardized parameter estimates

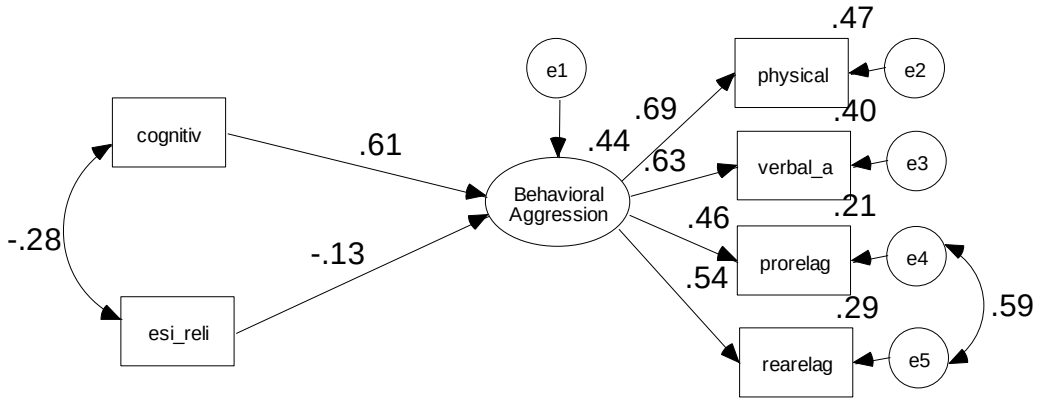
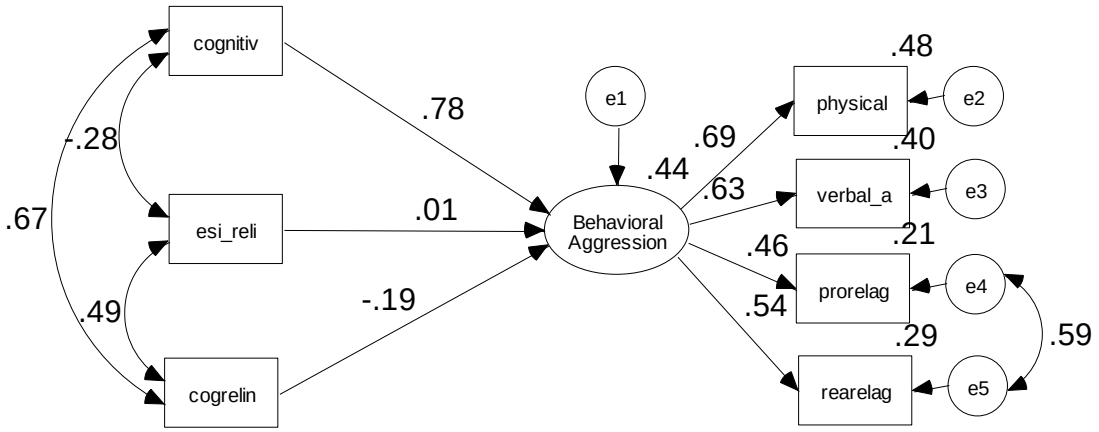


Figure 9. Standardized parameter estimates for model testing the moderating effect of religiousness on relation of cognitive aggression to behavioral aggression.



Mediation Analyses

Given that previous models did not uncover any significant moderating effects, it was decided that a re-specified model would be tested where religiousness would be treated as a mediating rather than as a moderating variable in a model testing for the direct and indirect effects of cognitive aggression on behavioral aggression. Some literature provides evidence that religiousness may be better specified as a mediator between psychological and behavioral aggression (e.g., Fischer, Greitemeyer, & Kastenmuller, 2007). In order to specify a mediation model, the proposed mediator must be shown to be significantly correlated to both the predictor and the criterion variable (Baron & Kenny, 1986). Inspection of the bivariate correlations reported in Table 4 shows that all aggression measures were significantly inter-correlated. Table 8 shows that religiousness was significantly negatively correlated to all forms of aggression except emotional aggression and proactive relational aggression. Based upon this, a re-specified model using cognitive aggression as the main predictor of behavioral aggression and religiousness as a mediating variable was created and tested. This model along with its standardized parameter estimates can be found in Figure 10. All parameter estimates came out significant at $p<.05$ or lower except for the path between religiousness and behavioral aggression. This indicates that religiousness does not have a significant mediating effect on the relation of cognitive aggression to behavioral aggression. Despite this result, fit statistics provide strong evidence of good fit of the overall model to the data (e.g., Chi-square= 10.48, df= 7, $p>.05$; Chi-square/df= 1.50; GFI= .98, AGFI= .94, NFI= .96, RFI= .91, IFI= .99, TLI= .97, CFI= .99, RMSEA= .06).

Given the lack of a significant mediating effect of religiousness, it seems that one potential reason for this finding may relate to the fact that social desirability might be

distorting the actual relations of religiousness to aggression as well as the relations of different forms of aggressions to each other. As reported in Table 2, religiousness and all aggression measures were found to be significantly correlated to social desirability. Extensive research has indicated that social desirability may have a mediating effect on aggression (Bell & Naugle, 2007; Biaggio, 1980; Devon, Colley, & Walker, 2004; Holden & Passey, 2010; Vigil-Colet, Ruiz-Pamies, Anguiano-Carrasco, & Lorenzo-Seva, 2012). Given this evidence, a second model was developed where both religiousness and social desirability were used as mediators of the relation of cognitive aggression to behavioral aggression. Figure 11 presents the model as well as the standardized parameter estimates.

In this mediational model, all parameter estimates emerged significant at $p<.05$ or lower except for the path between religiousness and behavioral aggression. Despite the lack of evidence for religiousness as a mediator, the overall fit statistics suggest that the model demonstrates generally satisfactory fit to the data (e.g., Chi-square= 24.82, df= 11, $p<.05$, Chi-square/df= 2.26, GFI= .95, AGFI= .88, NFI= .92, RFI= .84, IFI= .95, TLI= .91, CFI= .95, RMSEA= .09).

Figure 10. Path model with standardized parameter estimates examining religiousness as a mediator of the relation of cognitive aggression to behavioral aggression.

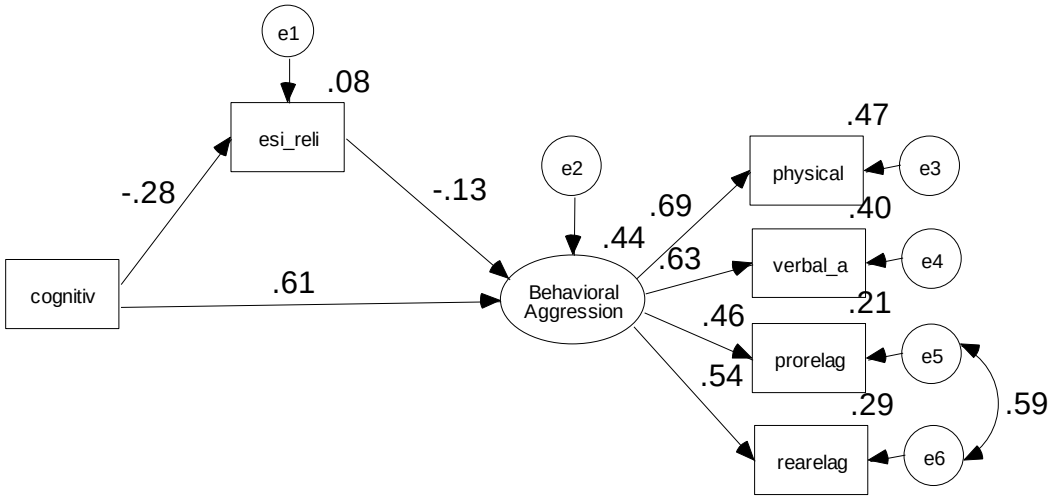
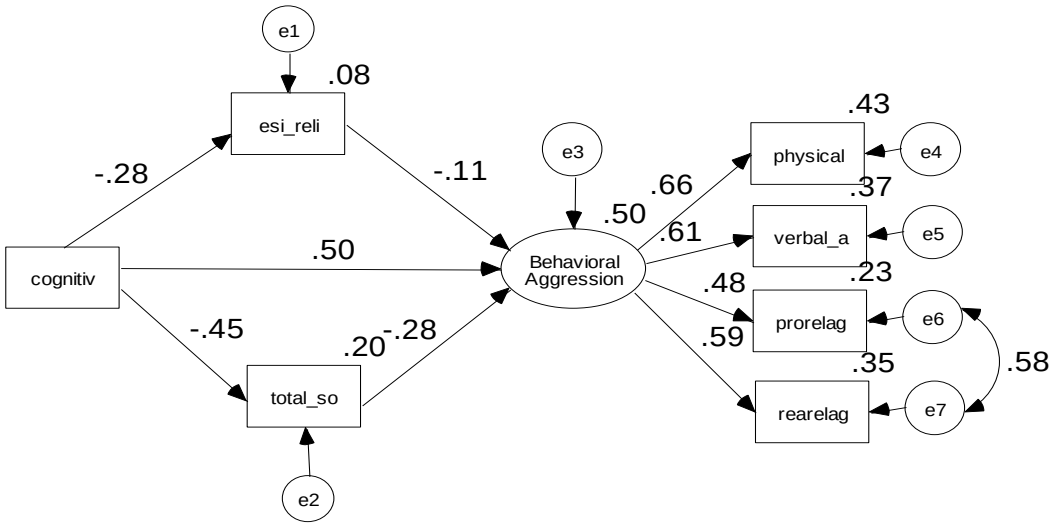


Figure 11. Path model with standardized parameter estimates examining religiousness and social desirability as mediators of the relation of cognitive aggression to behavioral aggression



As a set of final analyses, examination of the bivariate correlations reported in Tables 2 and 8 indicates that Existential Well-Being is significantly associated to all forms of aggression as well as social desirability. Given these results, two mediation models where religiousness was replaced with existential well-being were specified and tested. One model used cognitive aggression as the main predictor and the second model used emotional aggression. These model and their standardized parameter estimates can be found in Figures 12 and 13, respectively. Examination of parameter estimates in Figure 12 revealed that all were significant at $p<.05$ or lower except for the path between existential well-being and behavioral aggression. This indicates that existential well-being does not have a significant mediating effect on the relation of cognitive aggression to behavioral aggression. Nevertheless, fit statistics provide generally adequate support for the fit of the total model to the data (e.g., Chi-square= 24.44, df= 11, $p<.05$; Chi-square/df= 2.22; GFI= .96, AGFI= .89, NFI= .93, RFI= .86, IFI= .96, TLI= .92, CFI= .96, RMSEA= .09). Results of the mediation model using emotional aggression as presented in Figure 13 show a virtually identical pattern of results; all parameter estimates save the path between existential well-being and behavioral aggression were significant at $p<.05$ or lower. Overall fit statistics show that the model provides a fairly good fit to the data (e.g., Chi-square= 35.66, df= 11, $p<.001$; Chi-square/df= 3.24, GFI= .94, AGFI= .85, NFI= .90, RFI= .80, IFI= .93, TLI= .86, CFI= .92, RMSEA= .12).

Figure 12. Path model with standardized parameter estimates examining existential well-being and social desirability as mediators of the relation of cognitive aggression to behavioral aggression

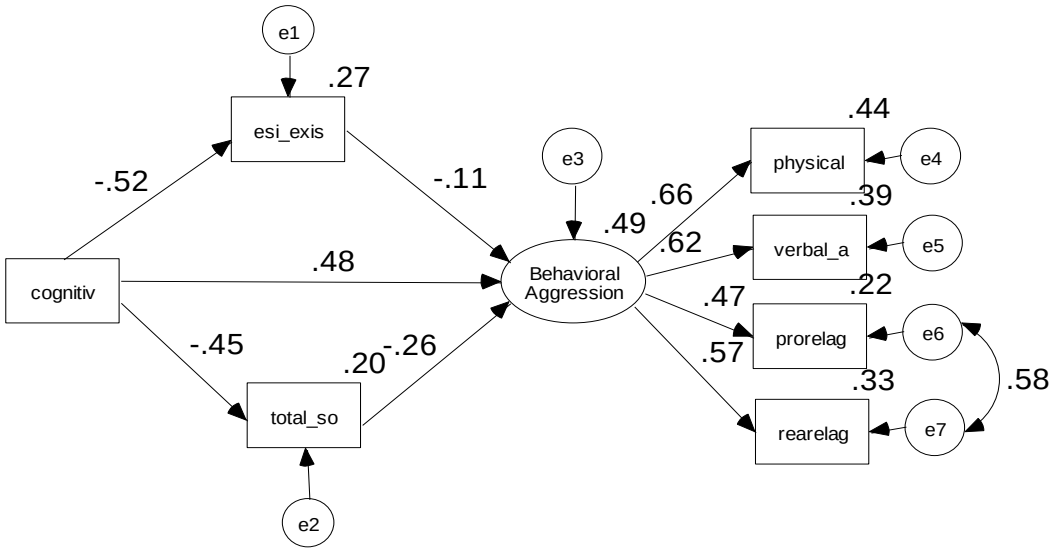
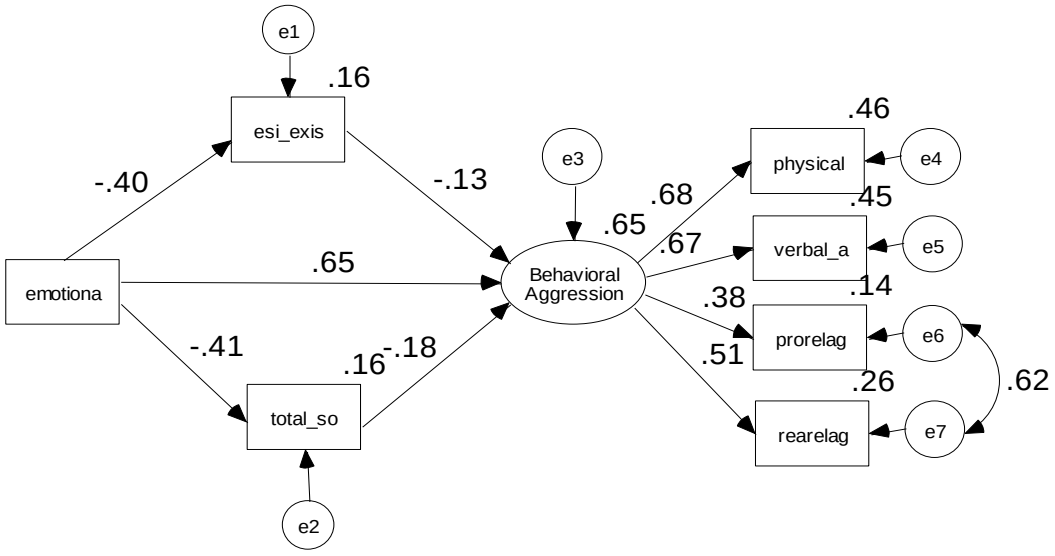


Figure 13. Path model with standardized parameter estimates examining existential well-being and social desirability as mediators of the relation of emotional aggression to behavioral aggression



Chapter 6

Discussion

In this chapter, the findings of the present research will be considered in the context of past research on the topic, hypotheses will be examined in the light of evidence that supported or failed to support them, new directions for future research will be suggested, the implications of the current findings for different fields of psychology will be reviewed, and the limitations of the present study impacting its validity and generalizability of results will be noted. The overall results of this study revealed somewhat interesting findings. Bivariate correlations were calculated to assess the relation of the different forms of aggression (Physical, Verbal, Emotional, Cognitive, and Relational) to the various dimensions of spirituality (Cognitive Orientation toward Spirituality, Experiential-Phenomenological Dimension, Existential Well-Being, Paranormal Beliefs, and Religiousness). Multiple correlations were also calculated using standard regressions to examine how the combination of all five ESI dimensions was associated with each form of aggression and, alternatively, how the combination of all six forms of aggression (i.e., Physical, Verbal, Cognitive, Emotional, Proactive Relational, and Reactive Relational) was associated with each dimension of spirituality. For the analyses using all five ESI dimensions as predictors in regressions, the multiple correlations emerged significant for Physical Aggression, Verbal Aggression, Emotional Aggression, Cognitive Aggression, Proactive Relational Aggression, Reactive Relational Aggression, AQ total score, and Total Relational Aggression. Numerous significant bivariate correlations between the forms of aggression and expressions of

spirituality were found. The overall results of the correlations in this study provide partial but incomplete support for several hypotheses, which will be examined more closely below.

First Hypothesis

H_1: Results will indicate significant positive correlations observed between all five forms of aggression and one ESI dimension of spirituality (REL).

The first hypothesis suggesting Religiousness would be positively correlated with all of the aggression variables was rejected, since Religiousness was not found to positively correlate with any of them and even negatively correlated with most. Religiousness was significantly negatively correlated with Physical Aggression, Verbal Aggression, Cognitive Aggression, Reactive Relational Aggression, AQ total score, and Total Relational Aggression. When using the six forms of aggression as predictors of Religiousness, the multiple correlation was significant. These results are not consistent with past research, which has shown Religiousness to be significantly positively related to Relational Aggression in a sample of women, but unrelated in a sample of men (Curby, 2004). However, the present study's finding of no relation between Religiousness and Emotional Aggression was consistent with two other studies, which have also found no relation between them in samples of male high school students and male and female college students (Burns, 2004; MacDonald, 1997). For the opposite factors of aggression, altruism was not found to relate and empathy was found to significantly positively relate to Religiousness in a college student sample (Huber & MacDonald, 2012). The findings of the present study about a negative relationship between Religiousness and most forms of aggression are congruent with these findings about the significant positive relationship between Religiousness and pro-social behavior, but are incongruent with past research on other forms of aggression.

Second Hypothesis

H_2: Results will indicate significant negative correlations observed between all five forms of aggression and three ESI dimensions of spirituality (COS, EPD, and EWB).

The second hypothesis indicating Cognitive Orientation toward Spirituality, Experiential-Phenomenological Dimension, and Existential Well-Being would all be negatively correlated with the main five aggression variables was rejected, since Cognitive Orientation toward Spirituality was not negatively correlated with all but merely some of the aggression variables, and Experiential-Phenomenological Dimension was not correlated with any aggression variables. However, it is worth noting that Cognitive Orientation toward Spirituality was indeed negatively correlated with most forms of aggression, and the Existential Well-Being portion of the second hypothesis must fail to be rejected, since Existential Well-Being was indeed negatively correlated with every form of aggression.

For Cognitive Orientation toward Spirituality, it was negatively correlated with Physical Aggression, Cognitive Aggression, Reactive Relational Aggression, the Total AQ score, and Total Relational Aggression. When using the six aggression subscales as predictors of Cognitive Orientation, the multiple correlation emerged significant. These results are somewhat inconsistent with past research, which has indicated that Cognitive Orientation toward Spirituality is not associated to Relational Aggression in a sample of college students (Curby, 2004). Two other studies have indicated Cognitive Orientation toward Spirituality is negatively associated with Emotional Aggression in samples of male high school students and male and female college students (Burns, 2004; MacDonald, 1997). For the opposite factors of aggression, altruism was significantly positively related to Cognitive Orientation toward Spirituality, and empathy was significantly positively related to

Cognitive Orientation toward Spirituality in a sample of college students (Huber & MacDonald, 2012). It is interesting that the present study found no inverse relation between Cognitive Orientation toward Spirituality and Emotional Aggression, given the other studies cited above that have suggested this inverse relationship.

For the Experiential-Phenomenological Dimension, it was the only component of spirituality that did not produce any significant correlations. These findings are consistent with past research, which has shown no relationship between the Experiential-Phenomenological Dimension and Relational Aggression in a sample of college students (Curby, 2004) or Emotional Aggression in a sample of male high school students and male and female college students (Burns, 2004; MacDonald, 1997). For the opposite factors of aggression, both altruism and empathy were found to significantly positively relate to Experiential-Phenomenological Dimension (Huber & MacDonald, 2012). It is interesting that the present findings are also congruent with the fact that the Experiential-Phenomenological Dimension may be significantly positively related to pro-social behavior and pro-social emotion.

For Existential Well-Being, it was significantly negatively correlated to Physical Aggression, Verbal Aggression, Emotional Aggression, Cognitive Aggression, Proactive Relational Aggression, Reactive Relational Aggression, AQ total score, and Total Relational Aggression. When using the six forms of aggression as predictors of Existential Well-Being, the multiple correlation emerged significant. These results are somewhat consistent with past research, which has found a significant inverse relationship between Existential Well-Being and Relational Aggression in a sample of college students (Curby, 2004). Two other studies have found Existential Well-Being to be significantly negatively correlated to Emotional

Aggression in samples of male high school students and male and female college students (Burns, 2004; MacDonald, 1997). For the opposite factors of aggression, altruism was not found to relate and empathy was found to significantly negatively relate to Existential Well-Being in a sample of college students (Huber & MacDonald, 2012). The findings of the present study on Existential Well-Being are also consistent with previous research showing a significant relationship between low Existential Well-Being (i.e., high anxious awareness of death, or mortality salience) and high levels of Physical, Verbal, Relational, and Emotional Aggression (Niesta, Fritsche, & Jonas, 2008). This may help explain why previous studies have found an association between high Existential Well-Being and low Emotional Aggression (Burns, 2004) as well as low empathy for others (Huber & MacDonald, 2012), with the latter finding because persons with high Existential Well-Being levels may tend to accept or feel undisturbed by not only their own negative emotions but also that of others.

Third Hypothesis

H_3: Results will indicate no correlation at all between any form of aggression and one ESI dimension of spirituality (PAR).

The third hypothesis suggesting Paranormal Beliefs would not be significantly correlated with any aggression variables was rejected, since Paranormal Beliefs was indeed positively correlated with some. Paranormal Beliefs produced significant positive correlations with Verbal Aggression, Emotional Aggression, Cognitive Aggression, and the AQ total. In a regression with the aggression scores as predictors and Paranormal Beliefs as the criterion, the multiple correlation was significant. These results are not consistent with past research, which has shown Paranormal Beliefs to have a significant positive relationship with Relational Aggression in a sample of women (Curby, 2004). It is also not consistent

with two other studies, which have found Paranormal Beliefs was not related to Emotional Aggression in a sample of male high school students and male and female college students (Burns, 2004; MacDonald, 1997). For the opposite factors of aggression, neither altruism nor empathy was found to relate to Paranormal Beliefs in a sample of college students (Huber & MacDonald, 2012). The present findings are congruent with the evidence suggesting Paranormal Beliefs is not related to pro-social behavior or pro-social emotion.

Fourth Hypothesis

> H_4: Results will indicate Religiousness demonstrates a significant moderating effect on the relationship of Emotional and Cognitive Aggression to Behavioral Aggression (comprised of Physical, Verbal, and Relational Aggression).

The results of the moderation path analyses from the structural equation models suggested that Religiousness does not have a significant moderating effect on the relationship of Emotional Aggression to Behavioral Aggression, or on the relationship of Cognitive Aggression to Behavioral Aggression. The fourth hypothesis indicating there would be a significant moderation effect of Religiousness on the relationship of Emotional and Cognitive Aggression to Behavioral Aggression was therefore rejected, since the models were found to have satisfactory goodness-of-fit but lacked significance for the pathways between religiousness and each form of aggression. These results are not consistent with the only previous study known to have examined the moderation effects of religiousness on the relationships of emotion to behavior, although in this case it was pro-social rather than anti-social (aggressive) emotion and behavior. Saslow, Willer, Feinberg, Piff, Clark, Keltner, and Saturn (2012) wrote an article called, "My brother's keeper? Compassion predicts generosity more among less religious individuals". Their study found that religiosity had a significant

moderation effect on the relationship between compassion and pro-social behavior, and religious people were actually less generous than non-religious people. The fourth hypothesis of the present study was rejected, yet it was the first study to investigate this subject and will hopefully spur other research to either confirm or deny these findings.

Other Hypotheses

As previously noted, some research has offered evidence that Religiousness may be better specified as a mediator, rather than moderator, between psychological and behavioral aggression (Fischer, Greitemeyer, & Kastenmuller, 2007). For this reason, Religiousness was next tested for its mediating effects in the path analyses. Since the proposed mediator must be significantly correlated to both the predictor and the criterion variable (Baron & Kenny, 1986), the re-specified model used Cognitive Aggression as the main predictor of Behavioral Aggression and Religiousness as the mediating variable. This test indicated that Religiousness did not have a significant mediating effect on the relation of Cognitive Aggression to Behavioral Aggression. Given the lack of a significant mediating effect of Religiousness, it seemed one reasonable explanation was that social desirability was unduly altering the actual relations of Religiousness to aggression and the relations of different forms of aggression to one another, since past literature indicates social desirability may have a mediating effect on aggression (Bell & Naugle, 2007; Biaggio, 1980; Devon, Colley, & Walker, 2004; Holden & Passey, 2010; Vigil-Colet, Ruiz-Pamies, Anguiano-Carrasco, & Lorenzo-Seva, 2012). Due to this evidence, a second model was created where both Religiousness and social desirability were used as mediators of the relation of Cognitive Aggression to Behavioral Aggression although, once again, results suggested only social desirability and not Religiousness mediated the relations between Cognitive Aggression and

Behavioral Aggression.

Finally, since Existential Well-Being was so significantly associated in the bivariate correlations with all forms of aggression and social desirability, a model was tested where Existential Well-Being and social desirability were treated as mediators in the relationships of Cognitive and Emotional Aggression to Behavioral Aggression. Results of these tests indicated Existential Well-Being did not have a significant mediating effect between psychological forms of aggression and behavioral aggression. Although they were not formal hypotheses, the informal hypotheses indicating that Religiousness, Religiousness and social desirability, and Existential Well-Being have mediation effects on the relationship between Cognitive and/or Emotional Aggression to Behavioral Aggression were rejected, given these models were found to have satisfactory goodness-of-fit but lacked significance for the pathways between Religiousness, Religiousness and social desirability, and Existential Well-Being, and each form of aggression.

These results are not consistent with the only previous study known to have examined the mediation effects of Religiousness on Cognitive Aggression. Fischer, Greitemeyer, and Kastenmuller (2007) wrote an article called, "What do we think about Muslims? The validity of westerners' implicit theories about the associations between Muslims' religiosity, religious identity, aggression potential, and attitudes toward terrorism". This study found that strength of religious identity showed a significant mediating effect on cognitive aggression and attitudes toward terrorism. Yet another study was found that examined the mediation effects of religious identity on the opposite of antisocial (aggressive) behavior, namely altruism and pro-social behavior. The investigator’s results suggested that religious identity had a significant, but weak, mediation effect on the relationship between altruism and personal

well-being (Grayman, 2006). The current findings of the present study are, therefore, incongruent with expectations based on certain past research (Fischer, Greitemeyer, & Kastenmuller, 2007), but not wholly unexpected when giving attention to other constructs like pro-social behavior (Grayman, 2006).

Supplemental Findings

Beginning with the correlational analyses, there were many significant correlations found. It should be first noted, though, that the following correlations (particularly for age and gender) should be interpreted with caution given that most of them demonstrated a weak to moderate effect size, or only small to medium magnitude of correlation. And, significant levels for increased type 1 error were not adjusted due to the completion of multiple simultaneous comparisons.

Age findings.

That said, age was significantly positively correlated with Cognitive Orientation toward Spirituality, Existential Well-Being, and Religiousness, and significantly negatively associated with Reactive Relational Aggression and Total Relational Aggression. Despite these correlations, all effect sizes were small and essentially negligible, except for Religiousness which had a slightly higher effect size than the others ($r=.25$, $p<.01$). These results are consistent with MacDonald's (2000a, 2000b) finding that age was significantly related to Cognitive Orientation toward Spirituality ($r=.16$, $p<.01$), but inconsistent with his finding that age was significantly related to the Experiential-Phenomenological Dimension ($r=.10$, $p<.05$) and not significantly related to Religiousness. However, MacDonald (2000a, 2000b) used a much larger sample of Canadian university students and, given the small effect sizes, he interpreted the correlations as minimal and trivial.

The present study's finding that age was significantly negatively associated with Reactive Relational Aggression and Total Relational Aggression and that age was not associated with Physical and Verbal Aggression was inconsistent with Landau, Bjorkqvist, Lagerspetz, Osterman, and Gideon's (2002) finding that age was significantly positively associated with Relational Aggression, Physical Aggression, and Verbal Aggression in an Israeli Jewish sample of pre-adolescent and adolescent children. Specifically, Landau et al. (2002) found that 11 year old children scored highest on all forms of aggression and 15 year old children scored lowest, thereby reflecting a potential developmental link between increased maturation and decreased aggression (statistics unavailable). The finding that none of the Buss-Perry AQ forms of aggression were significantly associated with age was further incongruent with other past research (Harris, 1996). Harris (1996) found every AQ scale score was negatively correlated with age in a sample of southwestern university students (statistics unavailable).

The issue of age-related outliers in the dataset should be briefly mentioned. Since there were a few much older participants in this study's traditional college-aged sample, including a 52 year old participant and a 62 year old participant, it was decided to remove these age-related outliers in order to determine if they were skewing the data in any direction, given age has been found to be significantly associated with aggression and spirituality in past studies (Harris, 1996; Landau, Bjorkqvist, Lagerspetz, Osterman, & Gideon, 2002). Upon removal of these outliers, however, there were no major differences detected between the sample that included them and the sample that did not. Specifically, all correlations remained essentially unchanged with just a few minor exceptions: the correlation between age and Existential Well-Being went from being mildly significant to non-significant (r=.16,

p<.05 versus r=.12, p=non-significant); the correlation between age and Cognitive Aggression went from being non-significant to mildly significant (r=-.08, p=non-significant versus r=-.20, p<.05); and the correlation between age and Proactive Relational Aggression went from being non-significant to mildly significant (r=-.14, p=non-significant versus r=-.17, p<.05).

When examining the effects of these changes on the partial correlations between aggression and spirituality that controlled for age, it was found that all partial correlations for Cognitive Aggression remained essentially the same and nothing notable changed, with the only minor exceptions being the two correlations between Cognitive Aggression and Cognitive Orientation toward Spirituality, and Cognitive Aggression and Religiousness, which both became slightly more significant than they already were (for COS, r=-.21, p<.05 versus r=-.24, p<.01; for REL, r=-.20, p<.05 versus r=-.22, p<.01). For the partial correlations of Existential Well-Being that controlled for age, it was also found that everything remained essentially the same and nothing significantly changed from the bivariate correlations. Thus, despite the existence of a few age-related outliers in the dataset, no statistical findings substantially changed as a result.

Gender findings.

The present study found gender was significantly positively correlated with Religiousness and negatively correlated with Physical Aggression, Proactive Relational Aggression, Reactive Relational Aggression, and Total Relational Aggression. Except for Religiousness, this is inconsistent with MacDonald's (2000a, 2000b) finding that gender significantly positively correlated with Cognitive Orientation toward Spirituality, Experiential-Phenomenological Dimension, and Paranormal Beliefs. MacDonald (2000a,

2000b) found all four correlations (except Existential Well-Being) were significant in a sample of Canadian university students, with females tending to score higher, but with no magnitude higher than r<.19. The present study's finding that gender significantly positively correlated with Physical Aggression, Proactive Relational Aggression, Reactive Relational Aggression, and Total Relational Aggression was consistent with Landau, Bjorkqvist, Lagerspetz, Osterman, and Gideon's (2002) study that found Physical and Relational aggression were both significantly positively correlated with gender in an Israeli Jewish sample of pre-adolescent and adolescent children, which showed males scoring higher than females with correlations of .91 versus .58 for religious participants and .81 versus .50 for secular participants.

Except for Verbal Aggression, the current finding is further consistent with the research of Buss and Perry (1992), who found gender was significantly related to Physical, Verbal, and Cognitive Aggression in a sample of undergraduate college students, with men scoring higher than women and the effect size of gender differences ranging from .89 for Physical Aggression, .44 for Verbal Aggression, and .19 for Cognitive Aggression. Likewise, Harris (1996) found gender was significantly related to Physical and Verbal Aggression as measured by the Buss-Perry Aggression Questionnaire, with men scoring higher than women in a southwestern university student sample (statistics unavailable). Also in congruence with the current study (except for Verbal Aggression), Crick and Grotpeter (1995) found gender was significantly related to Physical, Verbal, and Relational Aggression in a sample of mid-western middle school children, with males scoring higher on Physical and Verbal Aggression (for males, 15.6% of total sample, M=.77, SD=3.1; for females, 0.4% of total sample, M=-1.09, SD=1.6) and females scoring higher on Relational Aggression (for

females, 17.4% of total sample, M=.42, SD=3.4; for males, 2.0% of total sample, M=-.40, SD=2.9).

Overall, given females have tended to score lower on Physical Aggression and higher on Relational Aggression in most of the aforementioned past studies, it is interesting that the present study consisted of more than three times as many females than males and found gender significantly negatively correlated with Physical Aggression, which was expected, but also significantly negatively correlated with each form of Relational Aggression, which was unexpected. Nonetheless, the current finding that gender was significantly positively correlated with Religiousness in this predominantly female sample was consistent with the fact that women have traditionally been found to be more religious than men in previous research (Buchko, 2004; Gallup & Bezilla, 1992; Stoppa & Lefkowitz, 2010).

Social desirability findings.

In addition, the present study found social desirability was significantly correlated with Cognitive Orientation toward Spirituality, Existential Well-Being, and Religiousness, and negatively correlated with Physical Aggression, Verbal Aggression, Emotional Aggression, Cognitive Aggression, Total AQ Aggression, Proactive Relational Aggression, Reactive Relational Aggression, and Total Relational Aggression. This is consistent with MacDonald (2000a, 2000b), who found social desirability was significantly correlated with Cognitive Orientation toward Spirituality, Existential Well-Being, and Religiousness, but is inconsistent with his finding that social desirability is also significantly correlated with Experiential-Phenomenological Dimension and Paranormal Beliefs. The present study's finding that social desirability is negatively correlated with Physical Aggression, Verbal Aggression, Emotional Aggression, Cognitive Aggression, Total AQ Aggression, Proactive

Relational Aggression, Reactive Relational Aggression, and Total Relational Aggression is consistent with numerous past studies (Bell and Naugle, 2007; Biaggio, 1980; Devon, Colley, & Walkey, 2004; Holden & Passey, 2010; Selby, 1984; Vigil-Colet, Ruiz-Pamies, Anguiano-Carrasco, & Lorenzo-Seva, 2012), which have found that social desirability is indeed negatively correlated with the aforementioned forms of aggression.

Scale inter-correlation findings.

For scale inter-correlations, there were numerous inter-correlations found between different scales of the five ESI dimensions. Cognitive Orientation toward Spirituality was significantly correlated with Experiential-Phenomenological Dimension and Religiousness. Experiential-Phenomenological Dimension was significantly correlated with Paranormal Beliefs and Religiousness. Lastly, Existential Well-Being was negatively correlated with Paranormal Beliefs. These findings were generally consistent with MacDonald (2000a), who found that Cognitive Orientation toward Spirituality was significantly correlated with Experiential-Phenomenological Dimension and Religiousness; and Experiential-Phenomenological Dimension was significantly correlated with Paranormal Beliefs and Religiousness; although, Existential Well-Being was not significantly negatively correlated with Paranormal Beliefs. Thus, the current findings widely confirm most past research on the topic.

There were also numerous inter-correlations found between the different scales of the Aggression Questionnaire (AQ) and the Revised Self-Report of Aggression and Social Behavior Measure (SRASBM). In fact, all of the aggression variables were highly correlated with one another. Physical Aggression was significantly correlated with every other form of aggression, including Verbal, Emotional, Cognitive, Proactive Relational Aggression,

Reactive Relational Aggression, and Total Relational Aggression. Verbal Aggression was significantly correlated with Emotional, Cognitive, Proactive Relational, Reactive Relational, and Total Relational Aggression. Emotional Aggression was significantly correlated with Cognitive, Proactive Relational, Reactive Relational, and Total Relational Aggression. Cognitive Aggression was significantly correlated with Proactive Relational, Reactive Relational, and Total Relational Aggression. Proactive Relational Aggression was significantly associated with Reactive Relational Aggression and the AQ Total Aggression Score. Reactive Relational Aggression was significantly correlated to the AQ Total score. Finally, Total Relational Aggression was significantly correlated to the AQ Total Score.

These results for the inter-correlations between different forms of aggression were consistent with other studies. Namely, Buss and Perry (1992) found that Physical Aggression was significantly correlated with Verbal, Emotional, and less so Cognitive Aggression. Verbal Aggression was significantly correlated with Physical, Emotional, and less so Cognitive Aggression. Emotional Aggression was significantly correlated with Physical, Verbal, and Cognitive Aggression. And, Cognitive Aggression was significantly correlated with Emotional and less so with Physical and Verbal Aggression. For comparison of the inter-correlations of the different forms of relational aggression, there was no data available for comparison in previous studies.

CFA findings.

Confirmatory factor analyses (CFAs) were performed on the Expressions of Spirituality Inventory (ESI), the Aggression Questionnaire (AQ), and the Relational Aggression Measure (SRASBM). The CFAs using maximum likelihood estimation were done to evaluate the goodness of fit of four and five factor models for the ESI, two and four

factor model for the AQ, and one and two factor models for the SRASBM. In terms of the ESI, while the measure has five discrete dimensions, the correlation between Cognitive Orientation toward Spirituality and Religiousness was sufficiently high with the present sample so as to prompt a test of a four factor model where both Cognitive Orientation toward Spirituality and Religiousness were assigned to a single factor. In terms of the SRASBM, since proactive and reactive relational aggression are treated as two separate constructs on the test, it was deemed appropriate to test a two factor model. A one factor model, however, was also evaluated since the correlation between the two components of relational aggression was notably large. In terms of the AQ, a four factor model was tested since the questionnaire is designed to assess four unique forms of aggression. A two factor model made up of the items from the cognitive and emotional aggression scales on one factor and physical and verbal aggression items on the other was also evaluated in response to the fact that the present study was aimed at testing how psychological aggression predicted behavioral aggression.

For the CFA results of the ESI, model fit statistics provided somewhat mixed support for the correlated five-factor model, with some indices suggesting a good fit and other indices suggesting a poor fit. In assessing the correlated four-factor model of the ESI that combined Cognitive Orientation toward Spirituality and Religiousness because of their high inter-correlation, a nearly identical pattern of results was obtained to that with the five-factor model and overall mixed support was found. When directly comparing the two models to determine if one demonstrates a superior fit to the other, it was found that neither model was better than the other in fitting the data. The finding that there is a high inter-correlation between Cognitive Orientation toward Spirituality and Religiousness (r=.85), which

prompted the present study to combine the two factors and test a four-factor model, is generally consistent with previous research (MacDonald, 2000a, 2000b) that has also shown a high inter-correlation between these two factors (r=.63). Although Cognitive Orientation toward Spirituality and Religiousness seem to be highly inter-correlated, MacDonald (2000a, 2000b) found they are associated yet distinct factors, and he conducted a principal axis factor analysis that found a five-factor model best fit the data. In the current study, the four-factor model was supported, although the five-factor model was more strongly supported.

For the CFA results of the SRASBM, model fit statistics indicated satisfactory fit of the correlated two-factor model. In assessing the one-factor model, where items from Proactive and Reactive Relational Aggression were combined to produce a single Relational Aggression Total, overall fit indices provide acceptable support of satisfactory fit. When directly comparing the two models to determine if one demonstrated a superior fit to the other, it was found that the two-factor model was a better fit for the data. This result is consistent with the research of Murray-Close, Ostrov, Nelson, Crick, and Coccaro (2009), who also found high inter-correlations between Proactive and Reactive Relational Aggression and tested a one-factor model where these two factors were collapsed together to form a single unitary construct, although their results indicated these factors were quite distinct and should remain separate as part of a two-factor model, just as the present study suggested. In the current study, the one-factor model was supported, although the two-factor model was more strongly supported.

For the CFA results of the AQ, model fit statistics provided somewhat mixed support for the correlated four-factor model. In assessing the correlated two-factor model, where items from physical and verbal aggression were assigned to a behavioral aggression factor

and items from cognitive and emotional aggression were assigned to a psychological aggression factor, overall fit indices provided some support for the model. When directly comparing the two models to determine if one demonstrated a superior fit to the other, it was found that the four-factor model represented a better fit for the data as compared to the two-factor model. This is consistent with previous research (Buss & Perry, 1992), which suggested that the four-factor model demonstrates a better fit for the data than a model with fewer factors, namely a one-factor model that was tested by Buss and Perry. In the current study, the two-factor model was supported, although the four-factor model was more strongly supported.

SEM findings.

For the structural equation modeling (SEM) path analyses, it was observed that psychological aggression in the form of cognitive or emotional aggression was indeed a significant linear predictor of behavioral aggression in the form of physical, verbal, and relational aggression. According to the revised frustration-aggression hypothesis, the emotional or cognitive aggression that results from psychological frustration can directly lead to behaviors that involve physical, verbal, and relational aggression (Berkowitz, 1988, 1989). In this respect, the present findings from the SEM path analyses lend support for Berkowitz's revised frustration-aggression hypothesis that predicts a temporally directional relationship between psychological and behavioral aggression.

Potential Factors Responsible for Results

As earlier observed, most of the hypotheses in the present study had to be rejected. There are likely several reasons for this happening, which involve methodological and theoretical issues. For methodological issues, it is worth mentioning that the sample size was

relatively small, which thereby limited the detection and significance of results. Although some of the results were aligned in the general direction of the hypotheses, other parts were aligned in the opposite direction. Also, the type of sample used may have impacted results, given that only undergraduate students participated in this research and thus greatly restricted the age of participants, with higher age being associated with decreased aggression and increased spirituality in other research (Harris, 1996; Landau, Bjorkqvist, Lagerspetz, Osterman, & Gideon, 2002). With younger participants being over-represented in the present sample and still no strong relationship between most forms of aggression and most dimensions of spirituality being found, it would be even less likely if an older sample was used, which might have changed the findings by indicating a clearer and more salient inverse link between aggression and spirituality and suggesting a need to adjust the hypotheses accordingly at the start.

Yet another possibility is that the measures employed in the current investigation did not function as intended and their underlying conceptual models were flawed, since the CFA findings described previously all showed that there were multiple models of factors with satisfactory goodness of fit for each measure. A related issue to the CFA findings is that, as a result of the limited sample size of the study, it may have been difficult to produce reliable parameter estimates for the different measures, most of which had a moderate number of items on them. Finally, the possibility exists that the relations between aggression and spirituality are far more complex than anticipated and may not be amenable to research methods involving the use of self-report measures. Field or laboratory experiments might be needed in the future to sufficiently tease apart their subtle ties.

For theoretical issues, the rejection of most of the hypotheses in this study could

suggest there was a systematic flaw in the process of forming the hypotheses. In considering the broad background theory, namely evolutionary theory, which was used to generate hypotheses and test predictions, the prospect must be entertained that a fundamental shortcoming in this broad background theory resulted in incorrect notions of how aggression should be expected to relate to spirituality in general and religiousness in particular. It has already been described how the rise of spiritual groups and their religious behaviors is postulated to be due to kinship selection, parental investment in child care, sexual selection, cultural group selection, reciprocal altruism, indirect reciprocity, fair social exchange, conformity to social norms, and detection and punishment of cheating through in-group aggression (Joyce, 2007; Katz, 2000; Kirkpatrick, 2005; Rossano, 2010; Wilson, 2003). Some authors (Alexander, 1987; De Waal, 2009) have suggested that group morality (e.g., religious norms) evolved through a process of out-group hostility reinforcing in-group solidarity until specific codes of morals and taboos were written as a line drawn to separate in-group from out-group members.

Cultural group selection, as happens in the case of organized religion, is believed to work by selecting the most competitive cultural groups (Laland, Odling-Smee, & Feldman, in Katz, 2000), which then replicate through group-level traits that work by producing inter-group aggression, tribal conflict, xenophobia (fear of outsiders), hostility toward out-group members, and sometimes reciprocal antagonism (Katz, 2000). While organized religion can lead to large-scale terrorism, this "in-group moral mentality" (Teehan, 2010, p. 184) can also lead to small-scale harm through different forms of aggression: the demonization or utter devaluation of the out-group, the acceptance or encouragement of moral cruelty toward out-group members, socially fracturing into artificial divisions between people, and aggressive

punishment of in-group cheaters and traitors, who make mistakes or fail to meet the high (and often unrealistic) moral expectations of the in-group (Teehan, 2010).

Evolutionary psychologist Gregory Webster (2008) wrote about how evolutionary psychology is unraveling "the possible precursors of coalitional aggression. Stereotypes about out-groups, particularly negative ones, may lead to prejudice and discrimination [emotional, cognitive, verbal, and relational aggression] against out-groups, which may, in turn, lead to violence [physical aggression]… Manipulating perceptions of kinship, or lack thereof, may be the key to facilitating intergroup aggression" (pp. 29-34). That is to say, the tendency of many organized religions to encourage members to view each other as spiritual brothers and sisters serves to reinforce their religious identity and increase intergroup aggression toward out-group members, who are not considered their spiritual kin and thus deserve at least some forms of aggression, like relational (i.e. self-righteously viewing the out-group, slandering or talking negatively about them, alienating and ostracizing outsiders, etc.). For instance, in the Catholic and Protestant faiths, God is called "Father", devotees are called "children of God", the laity call their priests "Father", the priests call their laity "children", devotees call each other "brothers" and "sisters", and the golden rule of behavior is called "brotherly love" (Kirkpatrick, 2005). For these reasons, Crippen and Machalek (1989) referred to religion as a "hypertrophied kin recognition process" (p. 74), whereby the biological instrument of kinship recognition is seized in the service of religion to produce a subculture of artificial or surrogate kin. The religious in-group mentality works through a spiritual kinship selection theory in that members of the community are surrogate brothers and sisters in the "family" of religious believers, which can thus result in inter-group competition and consequent aggression toward non-family members and out-groups.

Some other evolutionary psychologists, Kessler and Cohrs (2008), have highlighted the value of in-group members displaying aggression toward other members, "[A]ggression against norm violators has an adaptive value in increasing rates of cooperation in groups [e.g., religions]… intergroup competition plays a major role in the development of the punishment tendency and, hence, for high levels of cooperation in social groups… [which] may, in turn, increase intergroup competition and conflict" (pp. 75-79), thereby leading to a vicious cycle of sowing more and more mutual aggression both among and within coalitions. In other words, organized groups like religions tend to evolve through cultivation of aggression against *both* in-group members and all out-group members as a way to compete better for survival in their cultural competitions against other religions or social groups.

However, the central question remains whether this evolutionary theory of aggression and religion and religiosity is viable and, most importantly, true or not. As famous evolutionary psychologist David Buss (1995) has asserted, evolutionary theory in psychology is merely a general meta-theory, which in turn can only produce middle-level theories, which in turn can only produce lower-level hypotheses, which in turn can produce specific predictions to be tested. But the translation process from general meta-theory to middle-level theory to lower-level hypotheses to specific predictions has a wide margin of error that can result in very disparate and even inaccurate research predictions to be tested. Evolutionary psychology has been previously criticized for successfully looking toward the past and piecing together phenomenon, but unsuccessfully looking toward the future and predicting other phenomenon (Coss & Charles, 2004). Although the evolutionary psychology perspectives presented earlier about the evolution of socio-cultural and religious groups through intra-group aggression and inter-group competition may make sense at face value

and offer strong explanations, it seems that their specific predictions for aggression and religiosity (or spirituality) may not be valid.

For instance, it is revealing how the evolutionary psychologist, Gregory Webster (2008), acknowledged that while evolutionary theory "has been a unifying meta-theory for much of human behavior, its theoretical perspectives on altruism and aggression remain as disparate as any… The ultimate, evolved mechanisms guiding altruistic and aggressive behavior may often be at least partially mediated by more proximal, social mechanisms" (p. 30). In other words, although evolutionary theory may have significant descriptive value for the distal causes of aggressive (antisocial) and pro-social emotion and behavior, its hypotheses for understanding and predicting these phenomena may be better accounted for by the proximal causes of such emotion or behavior. As one example, new research (Hardy, Walker, & Olsen, 2012) suggests that moral identity mediates the relationship of religiosity to aggression, or antisocial behavior, and empathy, or pro-social emotion. Several other recent pieces of evidence would seem to support this view that proximal causes, like moral identity, rather than distal causes, like evolutionary theory, can better explain antisocial versus pro-social emotion and behavior.

To begin, some research has tested portions of the evolutionary theory of aggression using the Buss-Perry Aggression Questionnaire, which was employed in the present study (Archer & Webb, 2006). These researchers found essentially no support for the evolutionary theory of competitiveness and competition based on aggression as measured by the Buss-Perry Aggression Questionnaire. Also noteworthy was that other evolutionary variables in the study, such as dominance, impulsiveness, and sexual jealousy, all showed little and limited support for the evolutionary theory of aggression (Archer & Webb, 2006), thus

indicating the theory may be inadequate or under-developed in major facets. Therefore, it stands to reason that evolutionary theory may offer incorrect hypotheses of the way that religiosity and spirituality are allegedly related to aggression. This problem is compounded further due to the lack of distinction in evolutionary theory between extrinsic versus intrinsic religiosity. At this point is where another theory, like as Alfred Adler's Individual Psychology, could shed some light on the subject.

Adler taught that social interest is the most important personality trait and the beacon of mental wellness, and that religiosity or spirituality is associated with social interest through a movement from less antisocial (aggressive) behaviors to more pro-social behaviors (Eriksson, 1992; Mosak & Dreikurs, 2000). A number of Adlerian psychologists agree that social interest, or low antisocial but high pro-social interest, is connected to higher levels of religiosity and spirituality (Leak, Gardner, & Pounds, 1992; Mansager, 2000; Peven, 2004). The Adlerian theories of social interest and spirituality differ from the evolutionary theories of social competition and kinship selection (e.g., inclusive fitness theory) in that the former predicts aggressive (antisocial) behaviors would decrease with higher levels of religiosity while the latter predicts aggressive behaviors would increase with higher levels of religiosity. Interestingly, one Adlerian researcher investigated if Adler's notion of social interest was positively related to measures of both religiosity and spirituality, and results indicated that social interest was indeed significantly linked to spirituality and intrinsic religiosity but, in addition, it was significantly negatively linked to extrinsic religiosity (Leak, 2006).

This evidence would seem to confirm the validity of the Adlerian theory of social interest and his hypothesis about its relation to spirituality. It successfully differentiated between intrinsic versus extrinsic forms of religiosity, where the former pertains to personal

motives that are embedded in genuinely living one's religion as an end unto itself, while the latter pertains to personal motives that are embedded outside of one's religion and use it as a means to another end. It is noteworthy that such evidence also confirms the results of the current investigation. Future research would do well to continue exploring how the construct of social interest from the theory of Alfred Adler's Individual Psychology is directionally linked to spirituality in general and intrinsic versus extrinsic religiosity in particular, given him and his adherents' predictions were significantly aligned with the results found in the present study. The issue of social interest has been seen as a major wedge between Adler's theory and evolutionary theory. To highlight the difference, one Adlerian wrote, "The assumption that the natural state of mankind is one of competition… remains unfounded. Fortunately… Adler's concept of social interest not only makes better sense of human nature, it also encourages… cherished values we have come to call humane" (Manarella, 1980, p. 53). This issue of pro-social versus antisocial (aggressive) tendencies is just one example of a prominent difference between Adler's theory and evolutionary theory and how they might divergently generate hypotheses and oppositely predict phenomenon to test. Future research in this domain could explore ways to better distinguish between various religious orientations in evolutionary theory, such as by acknowledging the distinction between intrinsic versus extrinsic religiosity.

Finally, since much of evolutionary theory focuses on religious group differences rather than religious individual differences in aggression, it could be argued that the hypotheses of the present study were flawed because they tested individual differences instead of group differences, which may represent a divergent level of analysis. While it is true that much of evolutionary theory focuses on group differences, it is also true that it

focuses on individual differences in aggression too (Buss, 2009; Nettle, 2006). For instance, evolutionary theory discusses and makes predictions about not only inter-group but intra-group aggression; in other words, aggression both between separate groups *and* among individuals within one and the same group (Broom, 2003; Joyce, 2007; Katz, 2000; Kessler and Cohrs, 2008; Rossano, 2010; Teehan, 2010; Wilson, 2003). In the present study, religious intra-group differences in aggression were tested by strictly examining participants that came from one religious group, Christianity, while excluding and removing all participants of other religious groups from analysis. This was believed to be an adequate approach for testing the evolutionary hypotheses. As Fischer & Mosquera (2001) stated, "[D]ifferences in aggression can be investigated at different levels of analysis, namely a biological (species), a psychological (individual), and a socio-cultural level… [all levels] interact with each other, thereby implying that evolutionary principles should become apparent at individual psychological levels" (p. 20). However, this assumption could be false, and future research may benefit from teasing apart and comparing religious intra-group versus inter-group differences in aggression. Although evolutionary psychology provides an appealing and overarching general meta-theory, this very fact undermines the accuracy and specificity of some of its lower-level hypotheses and atomized predictions, which at times can be difficult or uneasy to test.

As Coss and Charles (2004) fittingly wrote,

"Most evolutionary explanations… that are easy to state are often quite difficult to support with experimental evidence… When people challenge the role of evolutionary thinking in psychological research, their reservations seem to focus on whether or not evolutionary hypotheses as a group are correct. This misses the point: Some evolutionary hypotheses are correct, others are false. What matters more is that specific evolutionary hypotheses can be useful and, when phrased properly, they can lead researchers to uncover

evidence for or against their verisimilitude. There is exciting new interest in evolutionary thinking evidenced by the numerous articles published on evolutionary psychology, evolutionary psychiatry, and evolutionary developmental psychology, but none of these fields can afford to lose sight of the critical role their hypotheses have in the process of science. Evolutionary thinking can make an invaluable contribution to any area of psychology when evolutionary theories fit into progressive research programs. The veracity of evolutionary thinking must be based on successful prediction, and its value dependent on its continuing generation of utility" (p. 200, 232).

Therefore, despite the evolutionary hypotheses that had to be rejected on the basis of the evidence in the current investigation, one need not "throw the baby out with the bathwater" and stop testing other evolutionary psychology hypotheses or predictions. Obviously, more research is needed to either confirm or deny the present results and, should they receive support, it might suggest that the evolutionary psychology of aggression and spirituality should be reconsidered and revised. Evolutionary psychology is still an exciting new theory in its infancy, and it is capable of producing research that will sometimes be correct, sometimes incorrect, but always useful as part of the scientific method of repeat-analysis and self-correction.

Implications

This study on aggression and spirituality may have some limited implications for several fields of psychology, including clinical, counseling, health, and forensic psychology. Before examining these different fields of psychology, however, it is worth mentioning that the present study has implications for the field of evolutionary psychology. It has been shown in the results of the current investigation that the hypotheses of evolutionary psychology for aggression and religiosity (and spirituality) had to be rejected and may have offered initial poor predictions. That said, evolutionary psychology can take these present results into account in the future by modifying some tenets of its theories on aggression and

spirituality and striving to create more accurate hypotheses to be tested next time that would still fit past data.

For other fields of psychology, like clinical and counseling psychology, aggression is a grave problem for many clients and can lead one to abuse other people and to suffer psychological disorders. One such disorder, Intermittent Explosive Disorder (IED), is characterized by "several discrete episodes of failure to resist aggressive impulses… [and the] degree of aggressiveness expressed during the episodes is grossly out of proportion to any precipitating psychosocial stressors" (American Psychiatric Association, 2000, p. 667). One popular therapy for helping youth with this problem or chronic aggression is called Aggression Replacement Training (ART; Goldstein & Glick, 1994). The findings of the present study may have implications for anger management treatment in general and IED treatment or Aggression Replacement Training in particular. For instance, these therapies might benefit from locating ways to increase clients' existential well-being, helping them to think more openly and perceptively about spirituality (i.e., increase their cognitive orientation toward spirituality), and supporting their intrinsic religiosity development in order to reduce levels of their aggression; all of this while encouraging clients to critically evaluate and potentially limit their paranormal beliefs, which are associated with increased levels of aggression. Future studies could also test various treatment techniques that maximize or minimize each of these spiritual dimensions appropriately.

Spirituality is an important subject for clinical and counseling psychology, since both treat clients in psychotherapy. Research indicates that spirituality is conferred a high level of importance in the lives of many people, especially Americans. For instance, 95% of Americans report believing in God or a higher power, which is a figure that has not dipped

below 90% in the last half-century (Gallup & Lindsay, 1999). In addition, 90% of Americans report praying at times (Gallup & Lindsay, 1999), and 84% report having spiritual needs (Gallup & Lindsay, 1999; Myers, 2000). Despite the obvious importance of spirituality to most Americans, Porter (1995) said that, when it comes to psychology and psychotherapy, clinicians frequently avoid or neglect spirituality in their clients because it is perceived to be a private matter based on a personal, and not interpersonal, relationship with a higher power. Although three in four psychologists privately believe spirituality is centrally important to life (Shafranske, 1996), they are usually afraid to discuss it with their clients (Porter, 1995). Given the potential benefits of nurturing different dimensions of spirituality, as witnessed by their associations with lower levels of aggression in this study, clinical and counseling psychologists should consider inviting an open discussion about client's spirituality in treatment more often.

This study may also have implications for the field of health psychology, since aggression is often related to decreased health and physiological functioning (Friedman, 1992; Johnson, 1990; Miller, Smith, Turner, Guijarro, & Hallet, 1996; Smith, Glazer, Ruiz, & Gallo, 2004; Smith & MacKenzie, 2006). It has been well-documented that aggression of many kinds is significantly associated with health problems, including cardiovascular disease and reactivity, coronary heart disease, high cholesterol, increased heart rate, higher blood pressure, and hypertension among other illnesses, as well as higher general mortality rates (Friedman, 1992; Johnson, 1990; Miller, Smith, Turner, Guijarro, & Hallet, 1996; Smith, Glazer, Ruiz, & Gallo, 2004; Smith & MacKenzie, 2006; Suinn, 2001). But not only is there an established tie between aggression and poor health, there is also an established tie between spirituality and good health (Ellison & Levin, 1998; Hill & Butter, 1995; Larson, Swyers, &

McCullough, 1998; Levin & Vanderpool, 1992; Plante & Sherman, 2001; Seybold & Hill, 2001). Spirituality is commonly linked with increased health and physiological functioning, and has been found to relate to the prevention of and recovery from a multitude of physical illnesses (Ellison & Levin, 1998; Hill & Butter, 1995; Larson, Swyers, & McCullough, 1998; Levin & Vanderpool, 1992; Plante & Sherman, 2001; Seybold & Hill, 2001). As a result, the present study may bear on the field of health psychology by helping by signaling areas where people might improve their physical well-being through better modulating their healthy versus unhealthy levels of aggression and spirituality. For instance, they might consider methods for increasing their religious supports, cognitively thinking about spirituality in more flexible and less rigid ways, greater accepting their existential anxieties and mortality awareness, and subscribing to fewer paranormal beliefs that can lead to aggression.

Moreover, the present findings may have implications for forensic psychology. Aggression is among the cardinal features in many psychological disorders, like Conduct Disorder (in children and adolescents; CD), Oppositional Defiant Disorder (in children and adolescents; ODD), and Antisocial Personality Disorder (in adults; APD) (American Psychiatric Association, 2000). Since forensic populations and violent offenders are sometimes treated with Aggression Control Therapy (Hornsveld, 2005; Hornsveld, Nijman, & Kraaimaat, 2008), the current inquiry might have ramifications for this therapy and could suggest improvements to it. As has been seen, issues of aggression and spirituality are very relevant for both religious institutions and psychology, including the fields of evolutionary, clinical, counseling, health, and forensic psychology. Future research in the area could further explore the causal or directional links between spirituality and aggression, as well as strategies for increasing the former and decreasing the latter appropriately.

Limitations

The way in which the current study was undertaken may have some intrinsic limitations. First, the data for this study was collected from undergraduate students at a Mid-Western Catholic University and, therefore, the generalizability of the obtained results may be limited for other populations. Second, the reliance of this research on self-report questionnaires is another threat to its integrity. For this reason, a social desirability survey (BIDR) was administered to measure respondents' attempts at intentional deceit through impression management and unintentional deceit through self-denial. Lastly, a final limitation might be the challenge of trying to quantify constructs, like spirituality and psychological aggression, which may be considered qualitative or unquantifiable. Some researchers may assert it is not possible to correctly quantify these invisible variables (Skinner, 1953; 1976; Walsh & Vaughan, 1980), though this position is no more extreme than claiming that there is nothing qualitative about them. While different forms of aggression and dimensions of spirituality may indeed be difficult to measure, it does not render this task impossible, despite the challenge of it still limiting this study in some ways.

Conclusions

In summation, by studying the relations between aggression and spirituality, a better understanding of the ways in which they affect one another has been determined. This knowledge will not only strengthen the body of research on the topic and contribute to science, but it can also assist in finding methods for reducing the destructive aspects of aggression, like religious-inspired violence, enhancing the constructive aspects of spirituality, like a universal connection with others that leads more peaceful and less harmful behaviors. For instance, a number of things about the relations between aggression and spirituality were

learned in the present study. The combination of all dimensions of spirituality significantly predicted each form of aggression, and the combination of all forms of aggression significantly predicted nearly every dimension of spirituality (except the Experiential-Phenomenological dimension).

It was further learned that Cognitive Orientation toward Spirituality was negatively correlated with Physical Aggression, Cognitive Aggression, Reactive Relational Aggression, the Total AQ score, and Total Relational Aggression. Existential Well-Being was significantly negatively correlated to Physical Aggression, Verbal Aggression, Emotional Aggression, Cognitive Aggression, Proactive Relational Aggression, Reactive Relational Aggression, AQ total score, and Total Relational Aggression. Paranormal Beliefs produced significant positive correlations with Verbal Aggression, Emotional Aggression, Cognitive Aggression, and the AQ total. Religiousness was significantly negatively correlated with Physical Aggression, Verbal Aggression, Cognitive Aggression, Reactive Relational Aggression, AQ total score, and Total Relational Aggression. It was also learned that Experiential-Phenomenological Dimension was the only component of spirituality that did not produce any significant correlations. Generally speaking, most dimensions of spirituality (except Experiential-Phenomenological Dimension and Paranormal Beliefs) were negatively correlated with most forms of aggression.

The current findings would indicate that spiritually derived aggression, such as religious-inspired violence, may be mediated by other unrelated factors and is not a direct result of spirituality per se. This issue may involve the distinction between intrinsic versus extrinsic religiosity, whereby extrinsic-motivated individuals use religion for non-religious reasons as a means to an ulterior end. It may be that predisposed violent personalities happen

to be attracted to certain types of religious groups, like hate-mongering religions that are ethnocentric and fundamentalist, and, consequently, these persons seek to find spiritual excuses for them to act on their antisocial predispositions. Perhaps there are other mediating factors at work, but psychological research could explore these more of these possibilities in the future.

References

Abbotts, J. E., Williams, R. G. A., Sweeting, H. N., & West, P. B. (2004). Is going to church good or bad for you? Denomination, attendance, and mental health of children in West Scotland. *Social Science & Medicine, 58* (3), 645-656.

Adamovava, L., & Strizenec, M. (2004). Personality-structural correlates of cognitive orientation to spirituality. *Studia Psychologica, 46*(4), 317-325.

Alexander, R. D. (1987). The Biology of Moral Systems. New York: Aldine De Gruyter.

Alschuler, C. F., & Alschuler, A. S. (1984). Developing Healthy Responses to Anger: The Counselor's Role. *Journal of Counseling & Development, 63*(1), 26-29.

Altemeyer, B., & Hunsberger, B. (1992). Authoritarianism, religious fundamentalism, quest, and prejudice. *International Journal for the Psychology of Religion, 2* (2), 113-134.

American Psychiatric Association (2000). Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition (Text Revision). Washington D.C.: Author.

Archer, J., & Coyne, S. M. (2005). An integrated review of indirect, relational, and social aggression. *Personality and Social Psychology Review, 9*, 212-230.

Archer, J., & Webb, I. A. (2006). The relation between scores on the Buss-Perry Aggression Questionnaire and aggressive acts, impulsiveness, competitiveness, dominance, and sexual jealousy. *Aggressive Behavior, 32*, 464-473. Doi: 10.1002/ab.20146

Atran, S. (2004). In Gods We Trust: The Evolutionary Landscape of Religion. New York: Oxford University Press.

Auton, H. R., Pope, J., & Seeger, G. (2003). It isn't that strange: Paranormal belief and personality traits. *Social Behavior and Personality, 31*(7), 711-720.

Aydin, N., Fischer, P., & Frey, D. (2010). Turning to God in the face of ostracism: Effects of social exclusion on religiousness. *Personality and Social Psychology Bulletin, 36* (6), 742-753.

Bandura, A. (1973). Aggression: A Social Learning Analysis. New York: Prentice Hall.

Baron, R. M. & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51, 1173-1182.

Berkowitz, L. (1958). The expression and reduction of hostility. *Psychological Bulletin, 55*(5), 257-283.

Berkowitz, L. (1988). Frustrations, appraisals, and aversively stimulated aggression. *Aggressive Behavior, 14*(1), 3-11.

Berkowitz, L. (1989). Frustration-aggression hypothesis: Examination and reformulation. *Psychological Bulletin, 106*(1), 59-73.

Bigelow, R. S. (1970). The Dawn Warriors: Man's Evolution toward Peace. London: Hutchison.

Blass, J. H. (1979). Some personality correlates of religious orientation among Jewish seminarians. *Journal of Psychology & Judaism, 4* (2), 68-77.

Bottoms, B. L., Nielsen, M. E., Murray, R., & Filipas, H. (2004). Religion related child physical abuse: Characteristics and psychological outcome. *Journal of Aggression, Maltreatment, and Trauma, 8*, 87-114.

Bjorkqvist, K., & Nimela, P. (1992). New trends in the study of female aggression. In K. Bjorkvist & P. Nimela (Eds.), *Of mice and women: Aspects of female aggression.* San Diego, CA: Academic Press.

Boyd-Starke, K., Hill, O. W., Fife, J., & Whittington, M. (2011). Religiosity and HIV risk behaviors in African-American students. *Psychological Reports, 108*(2), 528-536.

Brady, M. J., Peterman, A. H., Fitchett, G., & Cella, D. (1999). The expanded version of Functional Assessment of Chronic Illness Therapy – Spiritual Well-Being Scale (FACIT-Sp-Ex): Initial report of psychometric properties. *Annals of Behavioral Medicine, 21*, 129.

Bregman, L. (2006). Spirituality: A glowing and useful term in search of a meaning. Omega, 53(1-2), 5-26.

Brelsford, G. M., & Mahoney, A. (2009). Relying on God to resolve conflict: Theistic mediation and triangulation in relationships between college students and mothers. *Journal of Psychology and Christianity, 28* (4), 291-301.

Broom, D. M. (2003). The Evolution of Morality and Religion. Cambridge, UK: Cambridge University Press.

Burns, J. P. (2004). The relationship of spirituality to adolescent male anger and aggression. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 64* (10-B), 5209.

Bushman, B. J., Ridge, R. D., Das, E., Key, C. W., & Busath, G. L. (2007). When God sanctions killing: Effect of scriptural violence on aggression. *Psychological Science, 18* (3), 204-207.

Buss, A. H., & Perry, M. (1992). The Aggression Questionnaire. *Journal of Personality and Social Psychology, 63* (3), 452-459.

Buss, D. M. (1995). Evolutionary psychology: A new paradigm for psychological science. *Psychological Inquiry, 6* (1), 1-30.

Butchko, K. J. (2004). Religious beliefs and practices of college women as compared to college men. *Journal of College Student Development, 45*, 89-98.

Byrne, B. M. (2001). Structural equation modeling with AMOS. Mahwah, NJ: Lawrence Erlbaum and Associates.

Caprara, G. V., Barbaranelli, C., & Zimbardo, P. G. (1996). Understanding the complexity of human aggression: Affective, cognitive, and social dimensions of individual differences in propensity toward aggression. *European Journal of Personality, 10*, 133-155.

Chang, B. H., Casey, A., Dusek, J. A., & Benson, H. (2010). Relaxation response and spirituality: Pathways to improve psychological outcomes in cardiac rehabilitation. *Journal of Psychosomatic Research, 69* (2), 93-100.

Chatters, L. M., Levin, J. S., & Taylor, R. J. (1992). Antecedents and dimensions of religious involvement among older Black adults. *Journal of Gerontology, 47*(6), S269-278.

Chen, G. (2006). Social support, spiritual program, and addiction recovery. *International Journal of Offender Therapy and Comparative Criminology, 50* (3), 306-323.

Clarke, J. (2009). A critical view of how nursing has defined spirituality. *Journal of Clinical Nursing, 18*, 1666-1673.

Coss, R. G., & Charles, E. P. (2004). The role of evolutionary hypotheses in psychological research: Instincts, affordances, and relic sex differences. *Ecological Psychology, 16* (3), 199-236.

Cota-McKinley, A. L., Woody, W. D., & Bell, P. A. (2001). Vengeance: Effects of gender, age, and religious background. *Aggressive Behavior, 27* (5), 343-350.

Coyne, S. M., Archer, J., & Eslea, M. (2006). "We're not friends anymore! Unless…": The frequency and harmfulness of indirect, relational, and social aggression. *Aggressive Behavior, 32*, 294-307.

Crago, M. (2003). What is spirituality? *Australian and New Zealand Journal of Family Therapy, 24*(4), iii-iiii.

Crick, N. R. & Grotpeter, J. K. (1995). Relational aggression, gender, and social-psychological adjustment. *Child Development, 66,* 710-722.

Crick, N. R., & Grotpeter, J. K. (1996). Children's treatment by peers: Victims of relational and overt aggression. *Child Development, 8,* 367-380.

Crippen, T., & Machalek, R. (1989). The evolutionary foundations of the religious life. *International Review of Sociology, 3,* 61-84.

Curby, M. S. (2004). Overt and Relational Aggression and Spirituality in a College Sample. Unpublished Master's Thesis.

Dawkins, R. (1976). The Selfish Gene. Oxford, UK: Oxford University Press.

Dawkins,R. (1993). Viruses of the mind. *Free Inquiry, 13* (3), 34-41.

Dervic, K., & Oquendo, M. A. (2004). Religious affiliation and suicide attempt. *The American Journal of Psychiatry, 161* (12), 2303-2308.

De Waal, F. (2009). Primates and Philosophers: How Morality Evolved. Princeton, NJ: Princeton University Press.

DeWall, C. N., Twenge, J. M., Gitter, S. A., & Baumeister, R. F. (2009). It's the thought that counts: The role of hostile cognition in shaping aggressive responses to social exclusion. *Journal of Personality and Social Psychology, 96*(1), 45-59.

Didion, L. M. (2009). Aggression and spirituality among veterans with chronic combat-related posttraumatic stress disorder. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 69* (12-B), 7806.

Dill, J. C., & Anderson, C. A. (1995). Effects of frustration justification on hostile aggression. *Aggressive Behavior, 21*(5), 359-369.

Dolgoff-Kaspar, R. (2009). Numinous-like auras and spirituality in persons with focal seizures. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 69*(9-B), 5774.

Dollard, J., Doob, L., Miller, N., Mowrer, O., & Sears, R. (1939). Frustration and aggression. New Haven, CT: Yale University Press.

Dor-Shav, N. K., Friedman, B., & Tchereonogura, R. (1978). Identification, prejudice, and aggression. *Journal of Social Psychology, 104* (2), 217-223.

Elkins, D. N., Hedstrom, L. J., Hughes, L. L., Leaf, J. A., & Saunders, C. (1988). Toward a humanistic-phenomenological spirituality: Definition, description, and measurement. *Journal of Humanistic Psychology, 28*(4), 5-18.

Ellison, C. W. (1983). Spiritual well-being: Conceptualization and measurement. *Journal of Psychology and Theology, 11*, 330-340.

Ellison, C. G., & Levin, J. S. (1998). The religion-health connection: Evidence, theory, and future directions. *Health Education & Behavior, 25*, 700-720.

Epps, J., & Kendall, P. C. (1995). Hostile attributional bias in adults. *Cognitive Therapy & Research, 19*(2), 159-178.

Eriksson, C. (1992). Social interest / social feeling and the evolution of consciousness. *Journal of Individual Psychology, 48* (3), 277-287.

Estanek, S. M. (2006). Redefining spirituality: A new discourse. *College Student Journal, 40*(2), 270-281.

Freshbach, N. D. (1969). Sex differences in children's modes of aggression responses toward outsiders. *Merrill-Palmer Quarterly, 15*, 249-258.

Fischer, A. H., & Mosquera, P. M. R. (2001). What concerns men? Women or other men? A critical appraisal of the evolutionary theory of sex differences in aggression. *Psychology, Evolution, & Gender, 3.1*, 5-25.

Fischer, P., Greitemeyer, T., & Kastenmuller, A. (2007). What do we think about Muslims? The validity of westerners' implicit theories about the associations between Muslims' religiosity, religious identity, aggression potential, and attitudes toward terrorism. *Group Processes & Intergroup Relations, 10* (3), 373-382.

Fives, C., Kong, G., Fuller, J., & DiGiuseppe, R., (2011). Anger, aggression, and irrational beliefs in adolescents. *Cognitive Therapy & Research, 35*(3), 199-208.

Fletcher, R., & Milton, M. (2010). Have you ever wondered what it might be like to try and cuddle a tiger? *Existential Analysis, 21.1*, 23-36.

Friedman, H. S. (Ed.) (1992). Hostility, Coping, and Health. Washington D.C.: American Psychological Association.

Gentile, D. A., Coyne, S., & Walsh, D. A. (2011). Media violence, physical aggression, and relational aggression in school age children: A short-term longitudinal study. *Aggressive Behavior, 37*(2), 193-206.

Galassi, M. D., & Galassi, J. P. (1978). Assertion: A critical review. *Psychotherapy: Theory, Research, & Practice, 15*(1), 16-29.

Gallup, G. H., Jr., & Bezilla, R. (1992). The religious lives of young Americans. Princeton, NJ: George H. Gallup International Institute.

Gerevich, J., Bacskai, E., & Czobor, P. (2007). The generalizability of the Buss-Perry Aggression Questionnaire. *International Journal of Methods in Psychiatric Research, 16*(3), 124-136.

Ginges, J., Hansen, I., & Norenzayan, A. (2009). Religion and support for suicide attacks. *Psychological Science, 20* (2), 224-230.

Goldstein, A. P., & Glick, B. (1994). Aggression Replacement Training: Curriculum and Evaluation. *Simulation & Gaming, 25* (1), 9-26.

Good, J. A. (1999). Shame, images of God, and the cycle of violence in adults who experienced childhood corporal punishment. *Dissertation Abstracts International: Section A: Humanities and Social Sciences, 59* (11-A), 4292.

Goodman, J. M. (2003). Psychological well-being in the Jewish community: The impact of social identity and spirituality. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 63* (12-B), 6142.

Goraieb, N. C. (1999). A program evaluation of a church-based rehabilitation program (lay-counseling). *Dissertation Abstracts International: Section B: The Sciences and Engineering, 60* (4-B), 1851.

Grayman, N. A. (2006). Value for prosociality, prosocial engagement, and well-being among African American adults: An exploratory study. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 67* (5-B), 2876.

Greyson, B. (2006). Near-death experiences and spirituality. *Zygon, 41*(2), 393-414.

Grimm, L. G., & Yarnold, P. R. (2004). Reading and Understanding Multivariate Statistics. Washington, D.C.: American Psychological Association.

Guerra, N. G., Huesmann, L. R., & Zelli, A. (1993). Attributions for social failure and adolescent aggression. *Aggressive Behavior, 19*(6), 421-434.

Gustafson, R. (1989a). Frustration and successful vs. unsuccessful aggression: A test of Berkowitz's Completion Hypothesis. *Aggressive Behavior, 15*(1), 5-12.

Gustafson, R. (1989b). Human physical aggression as a function of magnitude of frustration: Indirect support and a possible confounding influence. *Psychological Reports, 64*(2), 367-374.

Hackney, C. H., & Sanders, G. S. (2003). Religiosity and mental health: A meta-analysis of recent studies. Journal for the Scientific Study of Religion, 42(1), 43-55.

Hampton, P. J. (1978). The many faces of anger. *Psychology: A Journal of Human*

Behavior, 15(1), 35-44.

Hardy, S. A., Lawrence, J. W., Rackham, D. D., & Olsen, J. A. (2012). Religiosity and adolescent empathy and aggression: The mediating role of moral identity. *Psychology of Religion and Spirituality.* Published online first. Doi: 10.1037/a0027566.

Harris, M. B. (1996). Aggressive experiences and aggressiveness: Relationship to ethnicity, gender, and age. *Journal of Applied Social Psychology, 26*(10), 843-870.

Hay, D., & Socha, P. M. (2005). Spirituality as a natural phenomenon: Bringing biological and psychological perspectives together. *Zygon, 40*(3), 589 – 612.

Helminiak, D. A. (2006). The role of spirituality in formulating a theory of the psychology of religion. *Zygon, 41*(1), 197-224.

Highfield, M. F. (1992). Spiritual health of oncology patients: Nurse and patient perspectives. *Cancer Nursing, 15*, 1-8.

Hill, P. C., & Butter, E. M. (1995). The role of religion in promoting physical health. *Journal of Psychology and Christianity, 14,* 141-155.

Hill, P. C., Pargament, K. I., Hood Jr., R. W., McCullough, M. E., Swyers, J. P., Larson, D. B., Zinnbauer, B. J. (2000). Conceptualizing religion and spirituality: Points of commonality, points of departure. *Journal for the Theory of Social Behavior, 30*(1), 51-77.

Hobbes, T. (1651). Leviathan. Adelaide, South Australia: University of Adelaide Library e-books. Retrieved on November 23, 2012, at http://ebooks.adelaide.edu.au/h/hobbes/thomas/h68l/complete.html#chapter13.

Hodge, D. R. (2001). Spiritual assessment: A review of major qualitative methods and a new framework for assessing spirituality. *Social Work, 46*(3), 203-214.

Hokanson, J. E. (1961). The effects of frustration and anxiety on overt aggression. *Journal of Abnormal and Social Psychology, 62*(2), 346-351.

Holmes, K. J. (2008). The effects of religiosity and ethnic identity on African American pre-adolescent aggression. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 68* (10-B), 6965.

Hornsveld, R. H. J. (2005). Evaluation of Aggression Control Therapy for violent forensic psychiatric patients. *Psychology, Crime, & Law, 11*(4), 403-410.

Hornsveld, R. H. J., Nijman, H. L. I., & Kraaimaat, F. W. (2008). Aggression Control Therapy for violent forensic psychiatric patients: First results. *Psychology, Crime, &*

Law, 14(1), 1-18.

Huber II, J. T., & MacDonald, D. A. (2012). An investigation of the relations between altruism, empathy, and spirituality. *Journal of Humanistic Psychology, 52* (2), 206-221. Doi: 10.1177/0022167811399442.

Huey, W. C., & Rank, R. C. (1984). Effects of counselor and peer-led group assertive training on Black adolescent aggression. *Journal of Counseling Psychology, 31*(1), 95-98.

Humphreys, J. (2000). Spirituality and distress in sheltered battered women. *Journal of Nursing Scholarship, 32* (3), 273-278.

Hungelmann, J. A., Kinkel-Rossi, E., Klassen, L., & Stollenwork, R. (1996). Focus on spiritual well-being: Harmonious interconnectedness of mind-body-spirit – Use of the JAREL Spiritual Well-Being Scale. *Geriatric Nursing, 17*, 262-266.

Husain, A. (1984). Ingroup-outgroup perceptions of Hindus and Muslims on needs affiliation and aggression. *Perspectives in Psychological Researches, 7* (1), 25-29.

James, W. (1961). The varieties of religious experience: A study in human nature. Cambridge, MA: Harvard University Press. (Original work published 1902)

Ji, C. H. C., & Kyung, H. S. (2008). Doctrinal faith and religious orientations in right-wing authoritarianism: A pilot study of American and Korean Protestant college students. *Journal of Psychology and Christianity, 27* (3), 253-265.

Jim, H. S., Purnell, J. Q., Richardson, S. A., Golden-Kreutz, D., & Anderson, B. L. (2006). Measuring meaning in life following cancer. *Quality of Life Research, 15*, 1355-1371.

Johnson, E. (1990). The Deadly Emotions: The Role of Anger, Hostility, and Aggression in Health and Emotional Well-Being. New York: Praeger.

Joyce, R. (2007). The Evolution of Morality. Cambridge, MA: MIT Press.

Kanin, E. J. (1971). Sexually aggressive college males. *Journal of College Student Personnel, 12* (2), 107-110.

Kaslow, N. J., Price, A. W., Wyckoff, S., Grall, M. B., Sherry, A., Young, S., et al. (2004). Person factors associated with suicidal behavior among African American women and men. *Cultural Diversity and Ethnic Minority Psychology, 10* (1), 5-22.

Katsuma, L., & Yamasaki, K. (2008). The effects of three types of aggression on empathy in elementary school children. *Japanese Journal of Psychology, 79*(4), 325-332.

Katz, L. D. (Ed.) (2002). Evolutionary Origins of Morality: Cross-Disciplinary Perspectives. Bowling Green, OH: Imprint Academic.

Keith, A. (1947). Evolution and Ethics. New York: G. P. Putnam's Sons.

Kessler, T., & Cohrs, J. C. (2008). The evolution of authoritarian processes: Fostering cooperation in large-scale groups. *Group Dynamics: Theory, Research, and Practice, 12* (1), 73-84. Doi: 10.1037/1089-2699.12.1.73

Kirkpatrick, L. A. (1993). Fundamentalism, Christian orthodoxy, and intrinsic religious orientation as predictors of discriminatory attitudes. *Journal for the Scientific Study of Religion, 32,* 256-268.

Kirkpatrick, L. A. (2005). Attachment, Evolution, and the Psychology of Religion. New York: Guilford Press.

Kline, R. B. (1998). Principles and practice of structural equation modeling. New York: Guilford.

Krumrei, E., Mahoney, A., & Pargament, K. I. (2008). Turning to God to forgive: More than meets the eye. *Journal of Psychology & Christianity, 27* (4), 302-310.

Lajunen, T., & Parker, D. (2001). Are aggressive people aggressive drivers? A study of the relationship between self-reported general aggressiveness, driver anger, and aggressive driving. *Accident Analysis and Prevention, 33*(2), 243-255.

Landau, S. F., Bjorkqvist, K., Lagerspetz, K. M. J., Osterman, K., & Gideon, L. (2002). The effect of religiosity and ethnic origin on direct and indirect aggression among males and females: Some Israeli findings. Aggressive Behavior, 28, 281-298.

Larson, D. B., Swyers, J. P., & McCullough, M. E. (Eds.) (1998). Scientific Research on Spirituality and Health: A Consensus Report. Rockville, MD: National Institute for Healthcare Research.

Leach, M. M., Berman, M. E., & Eubanks, L. (2008). Religious activities, religious orientation, and aggressive behavior. *Journal for the Scientific Study of Religion, 47* (2), 311-319.

Leak, G. K., Gardner, L. E., & Pounds, B. (1992). A comparison of Eastern religion, Christianity, and social interest. *Journal of Individual Psychology, 48* (1), 53-64.

Leak, G. K. (2006). An empirical assessment of the relationship between social interest and spirituality. *Journal of Individual Psychology, 62* (1), 59-69.

Ledford, H. (2007). Scriptural violence can foster aggression. *Nature, 446* (7132), 114-115.

Lento-Zwolinski, J. (2007). College students' self-report of psychosocial factors in reactive forms of relational and physical aggression. *Journal of Social and Personal Relationships, 24*(3), 407-421.

Linder, J. R., Crick, N. R., & Collins, W. A. (2002). Relational aggression and victimization in young adults' romantic relationships: Associations with perceptions of parent, peer, and romantic relationship quality. *Social Development, 11* (1), 69-86.

Lonczak, H. S., Clifasefi, S. L., Marlatt, G. A., Blume, A. W., & Donovan, D. M. (2006). Religious coping and psychological functioning in a correctional sample. *Mental Health, Religion, & Culture, 9* (2), 171-192.

Lowe, C. M. (1968). The relationship between self-report of religious and personality needs among psychiatric patients. *The Journal of Social Psychology, 75* (2), 261-268.

Lutjen, L. J., Silton, N. R., & Flannelly, K. J. (2012). Religion, forgiveness, hostility, and health: A structural equation analysis. *Journal of Religion and Health, 51* (2), 468-478.

MacDonald, D. A. (1997). *The development of a comprehensive factor analytically derived measure of spirituality and its relationship to psychosocial functioning*. Doctoral Dissertation, University of Windsor, Windsor, Ontario, Canada.

MacDonald, D. A. (2000a). Spirituality: Description, measurement, and relation to the five factor model of personality. *Journal of Personality, 68* (1), 153-197.

MacDonald, D. A. (2000b). *The Expressions of Spirituality Inventory: Test development, validation, and scoring information*. Unpublished test manual.

MacDonald, D. A., & Friedman, H. L. (2002). Assessment of humanistic, transpersonal, and spiritual constructs: State of the science. *Journal of Humanistic Psychology, 42* (4), 102-125.

MacDonald, D. A., & Holland, D. (2002). Spirituality and complex partial epileptic-like signs. *Psychological Reports, 91* (3, Part 1), 785-792.

MacDonald, D. A., & Holland, D. (2003). Spirituality and the MMPI-2. *Journal of Clinical Psychology, 59* (4), 399-410.

Magnarella, P. J. (1980). Sociobiology: A new challenge to social interest and other assumptions of innate human goodness. *Journal of Individual Psychology, 36*, 1, 44-56.

Mahoney, A., Pargament, K. I., Jewell, T., Swank, A. B., Scott, E., Emery, E., & Rye, M. (1999). Marriage and the spiritual realm: The role of proximal and distal religious constructs in marital functioning. *Journal of Family Psychology, 13* (3), 321-338.

Mansager, E. (2000). Individual Psychology and the study of spirituality. *Journal of Individual Psychology, 56* (3), 371-388.

Marcelli, K. D. (2002). Correlates of adolescents' aggression. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 62* (8-B), 3809.

McCampbell, E., & Ruback, R. B. (1985). Social consequences of apologetic, assertive, and aggressive requests. *Journal of Counseling Psychology, 32*(1), 68-73.

McCloskey, M. S., Noblett, K. L., Deffenbacher, J. L., Gollan, J. K., & Coccaro, E. F. (2008). Cognitive-behavioral therapy for intermittent explosive disorder: A pilot randomized clinical trial. *Journal of Consulting and Clinical Psychology, 76*(5), 876-886.

Mealey, L. (1995). The sociobiology of sociopathy: An integrated evolutionary model. *Behavioral and Brain Sciences, 18*, 523-599.

Meissner, W. W. (1984). Psychoanalysis and Religious Experience. New Haven, CT: Yale University Press.

Miller, T. Q., Smith, T. W., Turner, C. W., Guijarro, M. L., & Hallet, A. J. (1996). A meta-analytic review of research on hostility and physical health. *Psychological Bulletin, 119*, 322-348.

Miller, W. R., & Thoresen, C. E. (2003). Spirituality, religion, and health: An emerging research field. *American Psychologist, 58*(1), 24-35.

Morales, J. R., & Crick, N. R. (1998). Self-Report Measure of Aggression and Victimization. Unpublished measure.

Morales, J. R. (1999). Revised Self-Report of Aggression & Social Behavior Measure. Unpublished measure.

Mosak, H. H., & Dreikurs, R. (2000). Spirituality: The fifth life task. *Journal of Individual Psychology, 56* (3), 257-265.

Murray-Swank, A., Mahoney, A., & Pargament, K. I. (2006). Sanctification of parenting: Links to corporal punishment and parental warmth among biblically conservative and liberal mothers. *International Journal for the Psychology of Religion, 16* (4), 271-287.

Neff, J. A. (2008). A new multidimensional measure of spirituality-religiosity for use in diverse substance abuse treatment samples. *Journal for the Scientific Study of Religion, 47*(3), 393-409.

Niesta, D., Fritsche, I., & Jonas, E. (2008). Mortality salience and its effects on peace processes: A review. *Social Psychology, 39*(1), 48-58.

Owen, I. R. (1994). Introducing an existential-phenomenological approach: Basic phenomenological theory and research. *Counselling Psychology Quarterly, 7*(3), 261-274.

Pajevic, I., Hasanovic, M., & Delic, A. (2007). The influence of religious moral beliefs on adolescents' mental stability. *Psychiatria Danubina, 19* (3), 173-183.

Pargament, K. I. (1999). The psychology of religion and spirituality? Yes and no. *The International Journal for the Psychology of Religion, 9*(1), 3-16.

Paulhus, D. L. (1984). Two-component models of socially desirable responding. *Journal of Personality and Social Psychology, 46*, 598-609.

Paulhus, D. L. (1991). Measurement and control of response bias. In J. P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds.), *Measures of Personality and Social Psychological Attitudes* (pp. 17-59). San Diego, CA: Academic Press.

Peterson, C. S. (1997). Anger and aggression in adolescent offenders. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 57*(8-B), 5340.

Peven, D. E. (2004). Ken Wilbur and Alfred Adler: Ascendance and transcendence. *Journal of Individual Psychology, 60* (4), 389-395.

Plante, T. G., & Sherman, A. C. (Eds.) (2001). Faith and Health: Psychological Perspectives. New York: Guilford Press.

Porter, G. (1995). Exploring the meaning of spirituality and its implications for counselors. *Counseling & Values, 40*(1), 69-80.

Quiggle, N. L., Garber, J., Panak, W. F., & Dodge, K. A. (1992). Social information processing in aggressive and depressed children. *Child Development, 63*(6), 1305-1320.

Rand, A. (1964). The Virtue of Selfishness. New York: Signet Books.

Rizzuto, A. M. (1979). The Birth of the Living God. Chicago: University of Chicago Press.

Robinson, M. D., & Wilkowski, B. M. (2010). Personality processes in anger and reactive aggression: An Introduction. *Journal of Personality, 78*(1), 1-8.

Rolston, H. (1999). Genes, Genesis, and God: Values and Their Origins in Natural and Human History. Cambridge, UK: Cambridge University Press.

Rossano, M. J. (2010). Supernatural Selection: How Religion Evolved. New York: Oxford University Press.

Rotenberg, K. J. (1985). Causes, intensity, motives, and consequences of children's anger from self-reports. *Journal of Genetic Psychology, 146*(1), 101-106.

Ruby, N. L. (1983). Personal space and the perception of assertion versus aggression. *Dissertation Abstracts International, 43*(10-B), 3374.

Rudski, J. (2003). What does a "superstitious" person believe? Impressions of participants. *The Journal of General Psychology, 130*(4), 431-445.

Saroglou, V., Pichon, I., Trompette, L., Verschueren, M., & Dernelle, R. (2005). Prosocial behavior and religion: New evidence based on projective measures and peer ratings. *Journal for the Scientific Study of Religion, 44* (3), 323-348.

Saslow, L. R., Willer, R., Feinberg, M., Piff, P. K., Clark, K., Keltner, D., & Saturn, S. R. (2012). My brother's keeper? Compassion predicts generosity more among less religious individuals. *Social Psychological and Personality Science.* Published online first. Doi: 10.1177/1948550612444137

Scarnati, R., Madry, M. A., Wise, A., Moore, H. D., et al. (1991). Religious beliefs and practices among most-dangerous psychiatric inmates. *Forensic Reports, 4* (1), 1-16.

Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *Journal of Educational Research, 99* (6), 323-337.

Seybold, K. S., & Hill, P. C. (2001). The role of religion and spirituality in mental and physical health. *Current Directions in Psychological Science, 10*(1), 21-24.

Shafranske, E. P. (1996). Religious beliefs, affiliations, and practices of clinical psychologists. In E. P. Shafranske (Ed.), *Religion and the Clinical Practice of Psychology* (pp. 149-162). Washington D.C.: American Psychological Association.

Shor, R. (1998). The significance of religion in advancing a culturally sensitive approach towards child maltreatment. *Families in Society, 79*, 400-409.

Simmons, R. (2002). Odd Girl Out: The Hidden Culture of Aggression in Girls. Orlando, FL: Harcourt, Inc.

Smith, T. W. (1994). Concepts and methods in the study of anger, hostility, and health. In A. W. Seigman & T. W. Smith (Eds.), *Anger, Hostility, and the Heart* (pp. 23-42). Hillsdale, NJ: Lawrence Erlbaum.

Smith, T. W., Glazer, K., Ruiz, J. M., & Gallo, L. C. (2004). Hostility, anger, aggressiveness, and coronary heart disease: An interpersonal perspective on personality, emotion, and health. *Journal of Personality, 72*(6), 1217-1271.

Smith, T. W., & MacKenzie, J. (2006). Personality and risk of physical illness. *Annual Review of Clinical Psychology, 2,* 435-467.

Smith-Jentsch, K. A., Salas, E. & Baker, D. P. (1996). Training team performance-related assertiveness. *Personnel Psychology, 49*(4), 909-936.

Smits, D. J. M., & Kuppens, P. (2005). The relations between anger, coping with anger, and aggression, and the BIS/BAS system. *Personality and Individual Differences, 39*(4), 783-793.

Spalek, B., & El-Hassan, S. (2007). Muslim converts in prison. *Howard Journal of Criminal Justice, 46* (2), 99-114.

Stavros, G. S. (1998). An empirical study of the impact of contemplative prayer on psychological, relational, and spiritual well-being. *Dissertation Abstracts International Section A: Humanities and Social Sciences, 59* (2-A), 0528.

Steffan, P. R., & Fearing, M. (2007). Does defensiveness account for the relationship between religiosity and psychosocial adjustment? *The International Journal for the Psychology of Religion, 17*(3), 233-244.

Stoppa, T. M., & Lefkowitz, E. S. (2010). Longitudinal changes in religiosity among emerging adult college students. *Journal of Research on Adolescence, 20*(1), 23-38.

Suinn, R. M. (2001). The terrible twos- anger and anxiety: Hazardous to your health. *American Psychologist, 56*(1), 27-36.

Teehan, J. (2010). In the Name of God: The Evolutionary Origins of Religious Ethics and Violence. West Sussex, UK: Wiley Blackwell.

Thompson, R. J., & Kolstoe, R. H. (1974). Physical aggression as a function of strength of frustration and instrumentality of aggression. *Journal of Research in Personality, 7*(4), 314-323.

Vella-Brodrick, D. A., & Allen, F. C. L. (1995). Development and psychometric validation of the mental, physical, and spiritual well-being scale. *Psychological Reports, 77,* 659-674.

Walker, E. A. (2000). Spiritual support in relation to community violence exposure, aggressive outcomes, and psychological adjustment among inner-city young adolescents. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 61* (6-B), 3295.

Walsh, R. N., & Vaughan, F. (1980). Beyond ego: Transpersonal dimensions in psychology. New York: St. Martin's Press.

Webster, G. D. (2008). The Kinship, Acceptance, and Rejection Model of Altruism and Aggression (KARMAA): Implications for interpersonal and intergroup aggression. *Group Dynamics: Theory, Research, and Practice, 12* (1), 27-38. Doi: 10.1037/ 1089-2699.12.1.27

Wildman, W. J., & McNamara, P. (2010). Evaluating reliance on narratives in the psychological study of religious experiences. *The International Journal for the Psychology of Religion, 20*, 223-254.

Williams, G. C. (1992). Natural Selection: Domains, Levels, and Challenges. New York: Oxford University Press.

Wilson, D. S. (2002). Darwin's Cathedral: Evolution, Religion, and the Nature of Society. Chicago: University of Chicago Press.

Wolman, R. (1997, September/October). Spirituality: What does it mean to you? *New Age Journal*, 78-81.

Worchel, S. (1974). The effect of three types of arbitrary thwarting on the instigation to aggression. *Journal of Personality, 42*(2), 300-318.

Wyrick, L. C., Gentry, W. D., & Shows, W. D. (1977). Aggression, assertion, and openness to experience: A comparison of men and women. *Journal of Clinical Psychology, 33*(2), 439-443.

Yi, K. S. (2009). The nature of mindfulness in long-term practitioners and teachers, and its role in well-being. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 69* (8-B), 5082.

Zainuddin, R. (1993). Needs as determinants of orientation towards spirituality. *Journal of the Indian Academy of Applied Psychology, 19* (1-2), 31-38.

Zinnbauer, B. J., Pargament, K. I., Cole, B., Rye, M. S., Butfer, E. M., Belavich, T. G., Hipp, K. M., Scott, A. B., Kadar, J. L. (1997). Religion and spirituality: Unfuzzying the fuzzy. *Journal for the Scientific Study of Religion, 36*(4), 549-564.

Appendix A: Informed Consent

Informed Consent – Part 1

Study of Spirituality, Aggression, Altruism, Empathy, & Life Goals

Statement of Informed Consent and Agreement to Participate

My name is Thomas Huber. I am a Graduate Student in the Clinical Psychology Doctoral Program in the Department of Psychology, College of Liberal Arts and Education, at the University of Detroit Mercy.

I have asked you to agree to be a volunteer in some research I plan to conduct. Before I can accept your consent, I want to make known to you the following information pertaining to the project.

1. *Purpose and Procedures:* The purpose of the study is to examine how spirituality, aggression, altruism, empathy, and life goals impact each other. If you consent to participate, you will be asked to complete a series of questionnaires which ask about your experiences, attitudes, and beliefs regarding a variety of aspects including, most importantly, spirituality. The questionnaires will take approximately 1 ½ to 2 hours to complete. You will be required to take the questionnaires to complete on your own time and to return the materials either to your psychology instructor or to Dr. MacDonald directly through the psychology office at Reno Hall or through the College of Liberal Arts and Education office on the first floor of the Briggs Building, McNichols campus.

2. *Expected Risks:* There are no attendant discomforts or risks reasonably to be expected from participation in the study. However, should you request it, the researchers can give you information about the UDM psychology clinic for further assistance.

3. *Expected Benefits:* Depending on your psychology course instructor, you may be eligible to receive extra credit which apply towards that course if you consent to participate. Please note that the decision to award such extra credit rests with the instructor and not with the investigator. Nonetheless, outside of this, you may benefit from the knowledge of your contribution to the body of scientific research, as well as gain an understanding in the research process.

4. *Alternative Procedures:* I have considered all aspects of the proposed project and determined that the procedures indicated above are the best procedures to be used in achieving the research goal intended.

5. *Confidentiality:* Confidentiality of the records will be maintained unless disclosure is required by law. Confidentiality of records will be maintained by the principal investigator Thomas Huber. Confidentiality will be maintained by identifying each set of questionnaires only with a participant number. Completed consent forms will be separated from the questionnaire materials and will be kept in a locked file cabinet.

6. *Questions and Concerns:* If there are any questions or concerns about any aspect of participation in this project, you are free to contact either the faculty advisor Dr. MacDonald (Department of Psychology, University of Detroit Mercy, 4001 West McNichols, Detroit, Michigan, 48221; Phone 313-578-0388; email macdonda@udmercy.edu) or Thomas Huber (Phone 850-525-6023; email thomashuber_2@yahoo.com). If you have any questions concerning your rights as a volunteer, you may contact Dr. Frank Pink of the UDM Institutional Review Board (313-494-6686; email pinkfe@udmercy.edu).

7. *Freedom to Withdraw:* If you consent to be a volunteer for this research project, you are nonetheless free to withdraw your consent and discontinue participation at any time without prejudice to you. You should also understand that the investigator has the right to withdraw you from the research project at any time. For example, if you fail to follow the instructions given to you concerning completion of the research materials, your data will not be used for research purposes.

8. *Additional Costs:* There are no additional costs involved in the present research.

9. *Feedback and Significant New Findings:* General information regarding the final results of the project will be made available through written summaries of the findings. Copies of these summaries will be available to all participants from the Department of Psychology upon the completion of the project.

Informed Consent – Part 2

ACKNOWLEDGEMENT AND CONSENT

I, _____ of _____
(Prospective Volunteer's Full Name) (Street, Address, City, State, Zip Code)

_____ hereby state:

1. I have read all of the statements above pertaining to the research project entitled Investigation into the Interacting Effects of Spirituality, Aggression, Altruism, Empathy, & Life Goals and I understand them.

2. I have been given the opportunity to ask any questions I wish concerning this research project and any questions I have asked between answered to my satisfaction.

3. I have been given a full copy, with signatures, of this document.

I hereby consent to be a volunteer in this research project:

_____ _____
Full Signature of Prospective Volunteer Date

As the investigator in the research project entitled Investigation into the Interacting Effects of Spirituality, Aggression, Altruism, Empathy, & Life Goals, I hereby state to the best of my knowledge and belief that all of the statements made in the above consent form are true and that in consenting, the prospective volunteer exercised free power of choice without undue inducement or any element of force, fraud, deceit, duress, or any other form of constraint or coercion. In addition to the participation by the volunteer being voluntary, the volunteer has been advised that she or he may discontinue participation at any time without penalty or loss of benefits to which the volunteer is entitled.

_____ _____
Full Signature of Investigator Date

Informed Consent – Part 3

Please answer the following questions (Remember: your answers will be kept fully confidential):

Age: _____

Your relationship status (please choose one):
_____ Married
_____ Single
_____ Separated
_____ Divorced
_____ Widowed
_____ Domestic Partner
_____ Other: _____

What is your Gender:
_____ Male
_____ Female

Your ethnicity:
_____ Black (not of Hispanic Origin)
_____ American Indian or Alaskan Native
_____ White (not of Hispanic origin)
_____ Asian or Pacific Islander
_____ Hispanic
_____ Other: _____

What particular religion would you consider yourself as belonging to?
_____ Buddhist
_____ Hindu
_____ Jewish
_____ Muslim
_____ Protestant
_____ Roman Catholic
_____ None
_____ Other: _____

Your years of education (indicate the highest level achieved):

Elementary	__1	__2	__3	__4	__5	__6
Middle & High School	__7	__8	__9	__10	__11	__12
College	__fr	__so	__jr	__sr		

College grad. with 4 year degree _____
Write in any advanced degrees (e.g., MA, MS, JD, RN, MD, PhD)

When were you born?: _____
(Month/Day/year)

Appendix B: Expressions of Spirituality Inventory (ESI)

Expressions of Spirituality Inventory (ESI)

This is a questionnaire which concerns your experiences, attitudes, beliefs and lifestyle practices pertaining to spirituality. Below are several statements. Read each statement carefully. Using the five point scale described below, rate the extent to which you agree with each statement as it applies to you and put your response in the space provided. There are no right or wrong answers. Please respond to every statement and respond as honestly as possible.

0	**1**	**2**	**3**	**4**
Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**

_____ 1. Spirituality is an important part of who I am as a person.

_____ 2. I have had an experience in which I seemed to be deeply connected to everything.

_____ 3. It always seems that I am doing things wrong.

_____ 4. It is possible to communicate with the dead.

_____ 5. I believe that going to religious services is important.

_____ 6. Spirituality is an essential part of human existence.

_____ 7. I have had an experience in which I seemed to transcend space and time.

_____ 8. I am not comfortable with myself.

_____ 9. I believe witchcraft is real.

_____ 10. I feel a sense of closeness to a higher power.

_____ 11. I am more aware of my lifestyle choices because of my spirituality.

_____ 12. I have had a mystical experience.

_____ 13. Much of what I do in life seems strained.

_____ 14. It is possible to predict the future.

_____ 15. I see myself as a religiously oriented person.

_____ 16. I try to consider all elements of a problem, including its spiritual aspects, before I make a decision.

_____ 17. I have had an experience in which I seemed to merge with a power of force greater than myself.

_____ 18. My life is often troublesome.

_____ 19. I do not believe in spirits or ghosts.

_____ 20. I see God or a Higher Power present in all things I do.

_____ 21. My life has been benefited from my spirituality.

_____ 22. I have had an experience in which all things seemed divine.

_____ 23. I often feel tense.

_____ 24. I think psychokinesis, or moving objects with one's mind, is possible.

_____ 25. I practice some form of prayer.

_____ 26. I believe that attention to one's spiritual growth is important.

_____ 27. I have had an experience in which I seemed to go beyond my normal everyday sense of self.

_____ 28. I am an unhappy person.

_____ 29. It is possible to leave your body.

_____ 30. I believe that God or a Higher Power is responsible for my existence.

_____ 31. This questionnaire appears to be measuring spirituality.

_____ 32. I responded to all questions honestly.

Appendix C: Aggression Questionnaire (AQ)

Aggression Questionnaire (AQ)

For the following items please rate how characteristic each is of you. Using the following rating scale, record your answer in the space to the left of each item.

1 = Extremely uncharacteristic of me
2 = Somewhat uncharacteristic of me
3 = Only slightly characteristic of me
4 = Somewhat characteristic of me
5 = Extremely characteristic of me

_____ 1. Once in a while I can't control my urge to strike another person.

_____ 2. I tell my friends openly when I disagree with them.

_____ 3. I flare up quickly but get over it quickly.

_____ 4. I am sometimes eaten up with jealousy.

_____ 5. Given enough provocation, I may hit another person.

_____ 6. I often find myself disagreeing with people.

_____ 7. When frustrated, I let my irritation show.

_____ 8. At times I feel I have gotten a raw deal out of life.

_____ 9. If somebody hits me, I hit back.

_____ 10. When people annoy me, I may tell them what I think of them.

_____ 11. I sometimes feel like a powder keg ready to explode.

_____ 12. Other people always seem to get the breaks.

_____ 13. I get into fights a little more than the average person.

_____ 14. I can't help getting into arguments when people disagree with me.

_____ 15. Some of my friends think I'm a hothead.

_____ 16. I wonder why sometimes I feel so bitter about things.

_____ 17. If I have to resort to violence to protect my rights, I will.

_____ 18. My friends say that I'm somewhat argumentative.

_____ 19. Sometimes I fly off the handle for no good reason.

_____ 20. I know that "friends" talk about me behind my back.

_____ 21. There are people who pushed me so far that we came to blows.

_____ 22. I have trouble controlling my temper.

_____ 23. I am suspicious of overly friendly strangers.

_____ 24. I can think of no good reason for ever hitting a person.

_____ 25. I sometimes feel that people are laughing at me behind my back.

_____ 26. I have threatened people I know.

_____ 27. When people are especially nice, I wonder what they want.

_____ 28. I have become so mad that I have broken things.

_____ 29. I am an even-tempered person.

Appendix D: Revised Self-Report of Aggression & Social Behavior Measure

Revised Self-Report of Aggression & Social Behavior Measure – Part 1

This scale is designed to measure qualities of adult social interaction and close relationships. Please read each statement and indicate how true each is of you, **now and during the last year**, using the scale below. Write the appropriate number in the blank provided. IMPORTANT: The items marked with asterisks (*) ask about experiences in current romantic relationship. **If you are not currently in a romantic relationship, or if you have no been in a relationship during the last year, please leave these items blank** (but answer all of the other items).

1	2	3	4	5	6	7
Not at all True			**Sometimes True**			**Very True**

_____ 1. I usually follow through on my commitments.

_____ 2. *I have threatened to break up with my romantic partner in order to get him/her to do what I wanted.

_____ 3. *My romantic partner tries to make me feel jealous as a way of getting back at me.

_____ 4. *It bothers me if my romantic partner wants to spend time with his/her other friends.

_____ 5. I try to get my own way by physically intimidating others.

_____ 6. I have a friend who ignores me or gives me the "cold shoulder" when s/he is angry with me.

_____ 7. I am willing to lend money to other people if they have a good reason for needing it.

_____ 8. *When my romantic partner is mad at me, s/he won't invite me to do things with our friends.

_____ 9. My friends know that I will think less of them if they do not do what I want them to do.

_____ 10. I get jealous if one of my friends spends time with his/her other friends even when I am busy.

_____ 11. When I am not invited to do something with a group of people, I will exclude those people from future activities.

_____ 12. I have been pushed or shoved by people when they are mad at me.

_____ 13. I am usually kind to other people.

_____ 14. I am usually willing to help out others.

_____ 15. When I want something from a friend of mine, I act "cold" or indifferent towards them until I get what I want.

_____ 16. I would rather spend time alone with a friend than be with other friends too.

_____ 17. A friend of mine has gone "behind my back" and shared private information about me with other people.

_____ 18. *My romantic partner has pushed or shoved me in order to get me to do what s/he wants.

Revised Self-Report of Aggression & Social Behavior Measure – Part 2

_____ 19. I try to make sure that other people get invited to participate in group activities.

_____ 20. *I try to make my romantic partner jealous when I am mad at him/her.

_____ 21. When someone makes me really angry, I push or shove the person.

_____ 22. I get mad or upset if a friend wants to be close friends with someone else.

_____ 23. When I have been angry at, or jealous of someone, I have tried to damage that person's reputation by gossiping about him/her or by passing on negative information about him/her to other people.

_____ 24. When someone does something that makes me angry, I try to embarrass that person or make them look stupid in front of his/her friends.

_____ 25. I am willing to give advice to others when asked for it.

_____ 26. *My romantic partner has threatened to physically harm me in order to control me.

_____ 27. When I have been mad at a friend, I have flirted with his/her romantic partner.

_____ 28. When I am mad at a person, I try to make sure s/he is excluded from group activities (going to the movies or to a bar).

_____ 29. I have a friend who tries to get his/her own way with me through physical intimidation.

_____ 30. *I get jealous if my romantic partner spends time with her/his other friends, instead of just being alone with me.

_____ 31. I make an effort to include other people in my conversations.

_____ 32. When I have been provoked by something a person has said or done, I have retaliated by threatening to physically harm that person.

_____ 33. *My romantic partner has threatened to break up with me in order to get me to do what s/he wants.

_____ 34. It bothers me if a friend wants to spend with his/her other friends, instead of just being alone with me.

_____ 35. *My romantic partner doesn't pay attention to me when s/he is mad at me.

_____ 36. I have threatened to share private information about my friends with other people in order to get them to comply with my wishes.

_____ 37. I make other people feel welcome.

_____ 38. *When my romantic partner wants something, s/he will ignore me until I give in.

_____ 39. When someone has angered or provoked me in some way, I have reacted by hitting that person.

_____ 40. *I have cheated on my romantic partner because I was angry at him/her.

_____ 41. I get mad or upset if my romantic partner wants to be close friends with someone else.

Revised Self-Report of Aggression & Social Behavior Measure – Part 3

_____ 42. I have a friend who excludes me from doing things with her/him and her/his other friends when s/he is mad at me.

_____ 43. I am usually willing to lend my belongings (car, clothes, etc.) to other people.

_____ 44. I have threatened to physically harm other people in order to control them.

_____ 45. I have spread rumors about a person just to be mean.

_____ 46. When a friend of mine has been mad at me, other people have "taken sides" with her/him and been mad at me too.

_____ 47. *I would rather spend time alone with my romantic partner and not with other friends too.

_____ 48. I have a friend who has threatened to physically harm me in order to get his/her own way.

_____ 49. I am a good listener when someone has a problem to deal with.

_____ 50. *My romantic partner has tried to get his/her own way through physical intimidation.

_____ 51. *I give my romantic partner the silent treatment when s/he hurts my feelings in some way.

_____ 52. When someone hurts my feelings, I intentionally ignore them.

_____ 53. I try to help others out when they need it.

_____ 54. *If my romantic partner makes me mad, I will flirt with another person in front of him/her.

_____ 55. I have intentionally ignored a person until they gave me my way about something.

_____ 56. I have pushed and shoved others around in order to get things that I want.

Appendix E: Balanced Inventory of Desirable Responding (BIDR)

Balanced Inventory of Desirable Responding (BIDR)

Using the scale below as a guide, write a number beside each statement to indicate how much you agree with it. Record your responses in the appropriate places.

1 2 3 4 5 6 7
Not True Somewhat True Very True

_____ 1. My first impressions of people usually turn out to be right.

_____ 2. It would be hard for me to break any of my bad habits.

_____ 3. I don't care to know what other people really think of me.

_____ 4. I have not always been honest with myself.

_____ 5. I always know why I like things.

_____ 6. When my emotions are aroused, it biases my thinking.

_____ 7. Once I've made up my mind, other people can seldom change my opinion.

_____ 8. I am not a safe driver when I exceed the speed limit.

_____ 9. I am fully in control of my own fate.

_____ 10. It's hard for me to shut off a disturbing thought.

_____ 11. I never regret my decisions.

_____ 12. I sometimes lose out on things because I can't make up my mind soon enough.

_____ 13. The reason I vote is because my vote can make a difference.

_____ 14. My parents were not always fair when they punished me.

_____ 15. I am a completely rational person.

_____ 16. I rarely appreciate criticism.

_____ 17. I am very confident of my judgments.

_____ 18. I have sometimes doubted my ability as a lover.

_____ 19. It's all right with me if some people happen to dislike me.

_____ 20. I don't always know the reasons why I do the things I do.

_____ 21. I sometimes tell lies if I have to.

_____ 22. I never cover up my mistakes.

_____ 23. There have been occasions when I have taken advantage of someone.

_____ 24. I never swear.

_____ 25. I sometimes try to get even rather than forgive and forget.

_____ 26. I always obey laws, even if I'm unlikely to get caught.

_____ 27. I have said something bad about a friend behind his or her back.

_____ 28. When I hear people talking privately, I avoid listening.

_____ 29. I have received too much change from a salesperson without telling him or her.

_____ 30. I always declare everything at customs.

_____ 31. When I was young I sometimes stole things.

_____ 32. I have never dropped litter on the street.

_____ 33. I sometimes driver faster than the speed limit.

_____ 34. I never read sexy books or magazines.

_____ 35. I have done things that I don't tell other people about.

_____ 36. I never take things that don't belong to me.

_____ 37. I have taken sick-leave from work or school even though I wasn't really sick.

_____ 38. I have never damaged a library book or store merchandise without reporting it.

_____ 39. I have some pretty awful habits.

_____ 40. I don't gossip about other people's business.

ABSTRACT

AN INVESTIGATION OF THE RELATIONS BETWEEN AGGRESSION AND SPIRITUALITY
by

JOHN THOMAS HUBER II

August 2012

Advisor: Dr. Douglas MacDonald

Major: Psychology (Clinical)

Degree: Doctor of Philosophy

This study examined the direction and extent of associations between five forms of aggression and five dimensions of spirituality. The forms of aggression were measured by the Aggression Questionnaire (AQ) and Revised Self-Report of Aggression and Social Behavior Measure (SRASBM) and included physical, verbal, cognitive, emotional, and relational aggression. The dimensions of spirituality were measured by the Expressions of Spirituality Inventory (ESI) and included Cognitive Orientation toward Spirituality (COS), Existential Well-Being (EWB), Experiential-Phenomenological Dimension (EPD), Paranormal Beliefs (PAR), and Religiousness (REL). Data was collected from a mid-western university student sample, and bivariate and partial correlations (controlling for age, gender, and social desirability), multiple regressions, confirmatory factor analyses (CFA), and structural equation models (SEM) were all calculated. For correlations, results indicated most dimensions of spirituality significantly inversely and negatively correlated with most forms of aggression (except PAR had only significant positive correlations and EPD had no

correlations). For regressions, the combination of all dimensions of spirituality significantly predicted each form of aggression, and vice versa for aggression to spirituality (except EPD). For CFA, several models were tested and compared, including four and five factor models of the ESI (due to high inter-correlation between COS and REL, a combined COS/REL variable versus separated COS and REL variables), two and four factor models of the AQ (combined cognitive/emotional forms as a psychological aggression variable and combined physical/verbal forms as a behavioral aggression variable versus each form of aggression as a separate variable), and one and two factor models of the SRASBM (general relational versus proactive and reactive relational aggression). Results indicated satisfactory goodness of fit for all models of the AQ and SRASBM, although the four factor AQ and the two factor SRASBM had somewhat better fit than their counterparts, whereas neither ESI model had a better fit and both had mixed support for their goodness of fit. For SEM, both mediation and moderation path analyses were conducted with AMOS software, but the dimensions of spirituality were not found to mediate or moderate the pathways between psychological aggression (cognitive or emotional forms) and behavioral aggression (physical, verbal, and relational forms).

Autobiographical Statement

John Thomas Huber II was born in Birmingham, AL, and grew up in Atlanta, GA, and Panama City Beach, FL. He graduated with a B.A. degree in Psychology and double minor degrees in Philosophy and Religious Studies with Magna Cum Laude honors at the University of West Florida in Pensacola. He then earned M.A. and Ph.D. degrees in Clinical Psychology in the APA-accredited program at the University of Detroit – Mercy in Michigan. He also completed an APA-accredited pre-doctoral internship in the Central California Psychology Internship Consortium in Fresno. He specializes in psychotherapy with diverse student populations and has worked at college and university counseling centers in California, Florida, Michigan, Mississippi, Rhode Island, and Ontario (Canada). Huber has undertaken additional training in psychodynamic therapy for two years at the Michigan Psychoanalytic Institute and another year at the Boston Psychoanalytic Society & Institute in Massachusetts. He has previously published an article on the physiology of psychotherapy with Columbia University in New York. He further published on the subject of altruism, empathy, and spirituality in the *Journal of Humanistic Psychology*. He worked as a manuscript reviewer for several years with the journal of *Personality and Individual Differences*, and as an editorial assistant for Dr. V. Barry Dauphin's book, Tantalizing Times: Excitements, Disconnects, and Discontents of Contemporary American Society. He has also served as an Editorial Board member on professional publications that include the journal of the *New School Psychology Bulletin*, published by the New School for Social Research in New York, and the Canadian research newsletter *Mind Pad*, published by the Canadian Psychological Association. He is a member of the American Psychological Association.