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The Perpetration of Adulthood Animal Abuse and Intimate Partner Violence in Men and Women Arrested for Domestic Violence

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To the Graduate Council:

I am submitting herewith a dissertation written by Jeniimarie Febres entitled "The Perpetration of Adulthood Animal Abuse and Intimate Partner Violence in Men and Women Arrested for Domestic Violence." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Psychology.

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The Perpetration of Adulthood Animal Abuse and Intimate Partner Violence in Men and Women Arrested for Domestic Violence

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Abstract

Intimate partner violence (IPV) occurs at devastatingly high rates in the United States. The current interventions for perpetrators of IPV are limited in their effectiveness. Research regarding characteristics of perpetrators of IPV may provide needed insights about their aggression in order to inform more effective treatments. This cross-sectional study employed the newly developed Interactions with Animals Scale, an original measure of a form of aggression that lacks comprehensive examination despite its demonstrated association with IPV, adulthood animal abuse (AAA). The prevalence, frequency, initiation, motivation, type of animal victimized, and recency of AAA was obtained from a sample of men (N= 157) and women (N= 41) arrested for domestic violence. This study also examined whether AAA accounts for unique variance in IPV perpetration beyond antisocial characteristics, and whether those IPV perpetrators who engaged in AAA differed from those who did not on other characteristics common to perpetrators of IPV. Comparisons by sex were made where appropriate.

AAA perpetration was endorsed at significantly higher rates than in nationwide community samples. Men endorsed significantly more AAA overall, as well as physical and threatening acts of AAA than women. It was more common for both sexes to initiate animal abuse perpetration after age 15 than before age 15, beyond the age at which animal abuse is typically considered a sign of future psychopathology.

AAA was not uniquely associated with IPV perpetration beyond antisocial personality characteristics. Compared to those individuals who denied AAA perpetration, men who reported AAA perpetration endorsed higher rates of antisocial personality characteristics and difficulties with emotional clarity, while women who reported AAA perpetration were not significantly different from their counterparts.

The methods of this study addressed several of the limitations present in existing research on AAA (i.e. assessing both male and female IPV perpetrators, using a more comprehensive measure of AAA, and controlling for other known correlates of IPV to determine the relative importance of AAA perpetration to IPV perpetration). Applications of IPV theories, implications for better understanding IPV perpetrators, for intervention programs, interagency reporting of animal abuse, and domestic violence shelters, as well as directions for future research, are discussed.

Table of Contents

List of Tables

Chapter 1

Introduction

Prevalence and Consequences of Intimate Partner Violence (IPV)

The rate and impact of IPV in the United States is devastating. IPV is defined as "physical, sexual, or psychological harm by a current or former partner or spouse" (Centers for Disease Control, 2010). Lifetime prevalence rates of IPV victimization have reached as high as 55% for women and 49% for men (Black et al., 2011; Coker, Smith, McKeown, & King, 2000; Tjaden & Thoennes, 2000; World Health Organization, 2013). The impact of IPV is similarly far-reaching. Negative consequences of IPV victimization span psychological, physical, social, and occupational/academic domains. Victims report symptoms of anxiety, depression, and posttraumatic stress disorder; injuries sustained as a direct result of the violence, such as bruises, broken bones, and difficulties with reproductive systems; health conditions that are impacted by chronic stress associated with IPV, such as migraines and irritable bowel syndrome; isolation from social supports and homelessness; and the loss of millions of days of paid work (Black et al., 2011; Centers for Disease Control, 2012). IPV also results in a high rate of death. From 1980 to 2008, of all homicide victims in the U.S., 64% of female victims and 36% of male victims were killed by a current or former intimate partner (Cooper & Smith, 2011).

Prevention and Intervention Efforts for IPV Perpetration

In light of the high prevalence rates and significant impact of IPV, prevention programs that aim to stop the initiation of perpetration, as well as interventions that seek to limit and eliminate further perpetration, are of crucial importance. However, the current prevention and intervention programs for IPV have several limitations. To date, the most common prevention programs are school-based (Mitchell & Anglin, 2009). These programs vary by targeted

populations (i.e., universal, selected, or indicated), age group, inclusion of a control group, program length and content, and follow-up period. Of the programs that assessed behavioral outcomes, such as Ending Violence (Jaycox et al., 2006), the Youth Relationships Project (Wolfe et al., 1996), and Safe Dates (Foshee et al., 1998), the absence (prevention) and reduction (intervention) of psychological, physical, and sexual dating violence perpetration has been demonstrated up to 4 years following the administration of the program (Whitaker & Lutzker, 2009). However, these programs are limited by the fact that they were developed prior to longitudinal studies on adolescent dating violence and, thus, were based on cross-sectional studies of adults, which may have impacted the relevance of the program content (Whitaker & Lutzker, 2009). Further, generalizability is a concern due to the selective nature of the targeted populations and the chosen geographic settings (Whitaker & Lutzker, 2009).

Likewise, limitations also exist with regards to violence intervention programs. The most common intervention programs for IPV are Batterer Intervention Programs (BIPs) designed for court-mandated men who are arrested for domestic violence. These programs vary in length from 6-52 weeks, and they typically attribute violence perpetration to either power and control motivations or to learning (Babcock et al., 2004; Feder & Wilson, 2005). Unfortunately, the outcome for men in these BIPs may be poor. Two meta-analyses of research on the effectiveness of these programs provide weak evidence in the form of small to zero effect sizes for reductions in recidivism by men (Babcock et al., 2004; Feder and Wilson, 2005).

Comparatively, the outcome for women in BIPs is uncertain. Since the 1980s, the number of women court-mandated to attend these programs has increased at a faster pace than the research aimed at learning more about these women and, to date, there is an absence of research on their outcomes after attending BIPs (Carney & Buttell, 2004; Dowd, Leisring, & Rosenbaum,

2005; Stuart, Temple, & Moore, 2007). As a result, existing interventions that have been shown to be relatively ineffective for men (perhaps with somewhat modified content) are being applied to women without evidence to support the appropriateness of such interventions (Carney & Buttell, 2004; Dowd, Leisring, & Rosenbaum, 2005; Swan, Gambone, Caldwell, Sullivan, & Snow, 2008).

In light of the limitations present in current prevention and intervention programs for IPV, opportunities for improvement abound and continued research that can inform such improvements is needed. Obtaining more information about individuals who use violence in their intimate relationships is one way research can be helpful and is a direction researchers have already begun to pursue.

Research on Perpetrators of IPV

IPV perpetration and other antisocial features. Research shows that there is an association between the perpetration of IPV and other antisocial features for both men and women. For example, studies report that men and women who perpetrate IPV have broad and specific difficulties with emotion regulation, and it is thought that aggression may function as an emotion regulation strategy (Bushman, Baumeister, & Phillips, 2001; Jakupcak, Tull, & Roemer, 2005; Shorey, Brasfield, Febres, & Stuart, 2011; Stuart, Moore, Hellmuth, Ramsey, & Kahler, 2006; Tager, Good, & Brammer, 2010). Male and female IPV perpetrators also often report engaging in general violence (i.e. violence against non-intimate partners) (Babcock, Miller, & Siard, 2003; Edelson, 1999; Stuart, Moore, Ramsey, & Kahler, 2004), and a significant association has been found between male-perpetrated IPV and aggression against children (Appel & Holden, 1998; Edelson, 1999).

An additional antisocial behavior that is of particular interest and that has been shown to be associated with aggression toward humans is animal abuse or cruelty (Kellert & Felthous, 1985; Merz-Perez, Heide, & Silverman, 2001; Wright & Hensley, 2003). Animal abuse or cruelty is defined as "socially unacceptable behavior that intentionally causes unnecessary pain, suffering, or distress to and/or death of an animal" (Ascione 1993, p.228). Significantly higher levels of childhood animal cruelty have been reported by individuals convicted of aggressive or violent crimes (e.g., murder, sex offenses) compared to individuals convicted of crimes considered less aggressive (e.g., property crimes, drug-related crimes) (Kellert & Felthous, 1985; Merz-Perez, Heide, & Silverman, 2001). Similar methods of aggression used against animals in childhood have also been reported as those used against humans in adulthood (Wright & Hensley, 2003). This apparent link between youth animal abuse and adult interpersonal violence is codified in the diagnostic criteria for Antisocial Personality Disorder (ASPD) (Arluke, Levin, Luke, & Ascione, 1999).

Understanding the clustering of antisocial features in perpetrators of IPV. The major theories about the development of IPV perpetration provide a basis by which to understand such clustering of antisocial features in the same individual. According to social learning theory, individuals learn specific behaviors through the observation and imitation of others- particularly parents-, and through the subsequent reinforcement received; as it relates to aggressive behaviors, such reinforcement might include conflict resolution, problem-solving, and gaining control of others (Bandura, 1977; Shorey, Cornelius, & Bell, 2008). Concurrently, the very presence of aggression in an individual's environment may communicate that it is an acceptable coping strategy (Shorey, Cornelius, & Bell, 2008). This combination of learning specific aggressive behaviors and learning to have an accepting attitude towards them may increase the

chances that an individual would engage in such antisocial behaviors as IPV, general violence, and aggression towards children and animals.

Just as social learning theory may provide an explanation for the pervasiveness of an individual's aggressive tendencies, so too might the desire for power and control as hypothesized by feminist theory. Feminist theory of violent behavior posits that a culture of patriarchy based on men having power and control over women promotes violence against women and, more broadly, violence against those who are less powerful, including children and animals (Adams, 1994; Flynn, 2009; Shorey, Cornelius, & Bell, 2008). Similarly, women's initiation of violence has been shown empirically to be motivated by a desire for power and control (Stets & Pirog-Good, 1989; Stuart et al., 2006). Accordingly, it can be argued that an individual motivated by a desire for power and control might show widespread use of violence in their life in order to achieve this goal.

Third, attachment theory provides further insight into the clustering of antisocial features in individuals who perpetrate IPV. Attachment theory states that the nature of the bond a child has with his/her primary caregivers serves as a prominent model for future relationships and that these caregivers help children with emotion regulation (Beetz, 2009). For instance, a secure attachment is thought to develop in an environment where caregivers are consistently responsive to the needs of a child, which results in the child growing up trusting others and seeking close relationships, as well as knowing how to regulate their emotions (Beetz, 2009; Shorey, Cornelius, & Bell, 2008). An insecure attachment, on the other hand, is thought to develop in environments where caregiver responsiveness is inconsistent, unpleasant, or absent, leading these children to grow up with an uncertainty about whether people in relationships can be trusted and with limited guidance about how to regulate their emotions (Beetz, 2009). The difficulties with

interpersonal trust and emotion regulation hypothesized in this theory may help to explain the range of antisocial features observed in perpetrators of IPV.

Adulthood animal abuse (AAA) and IPV perpetration. Consistent with these theories, an understudied behavior of particular interest that perpetrators of IPV also engage in is that of adulthood animal abuse. Extending the research that shows a relationship between aggression against animals in childhood and aggression against humans in adulthood, studies reveal high rates of maltreatment of pets in adult samples of intimately violent individuals. Compared to women who had not experienced IPV, female residents of domestic violence shelters and community samples of female IPV victims were 8-11 times more likely to report that their partner had threatened, hurt, or killed the family pet (Ascione et al., 2007; Walton-Moss, Manganello, Frye, & Campbell, 2005). It has been shown that up to 77% of female victims of IPV who own pets report that their pet was physically threatened or harmed by their partner (Flynn, 2011; Tiplady, Walsh, & Phillips, 2012). Further, the frequency and severity of IPV perpetration was also found to be associated with the perpetration of pet abuse by male partners, as reported by female victims of IPV (Ascione et al., 2007).

Although it appears that AAA is prevalent among IPV perpetrators, the origin and function of this behavior in this population is uncertain. Threatening or harming pets in the context of an intimate relationship is thought to be a form of coercion or control (Johnson, 2006; Loring & Bolden-Hines, 2004) and an escalation of existing emotional abuse (Faver & Strand, 2003). Consistent with theories of IPV perpetration, there is some empirical evidence that perpetrators of IPV may engage in AAA as the result of either observational learning of such behaviors or of acceptance of aggression as a coping strategy per social learning theory (DeGue & DiLillo, 2009), as a way to wield power and control per feminist theory (Simmons &

Lehmann, 2007), or as a reflection of insecure attachment and subsequent emotional dysregulation per attachment theory (Maiuro, Eberle, Rastaman, & Snowflake, 2008). Furthermore, theories specific to animal abuse provide additional support for the concurrence of AAA and IPV perpetration. The graduation hypothesis states that "the presence of cruelty to animals at one developmental period predicts interpersonal violence at a later developmental period" and such progression to violence against humans is thought to occur once cruelty to animals alone "no longer meet[s] their needs" (Ascione & Lockwood, 2001, pp.40; Wright & Hensley, 2003, pp. 75). As a complement to this theory, the deviance generalization hypothesis asserts that animal abuse is one of many antisocial behaviors that one person may exhibit as the result of the same fundamental cause, without any assumptions about the time ordering of these behaviors (Arluke, Levin, Luke, & Ascione, 1999). These theories provide additional ways of thinking about the development of IPV and AAA perpetration in the same individual. Further research is needed, however, to determine whether examining AAA may provide further insight into understanding and addressing the perpetration of IPV.

As summarized by researchers and demonstrated by past studies, “violence…is rarely a unidimensional, isolated act. More often, violent incidents within the family are intertwined as part of a spiraling cycle of violence and abuse” (Krienert et al., 2012, pp.280). In other words, one form of violence rarely exists in isolation from other forms of violence in the home. The involvement of pets in this cycle of violence not only reflects a potential escalation of relationship violence, as mentioned above, it also confers additional risk to victims because shelter seeking is often delayed for close to 2 months and/or victims will return to their abusive partners out of concern that their partner may harm their pets (Ascione et al., 2007; Carlisle-Frank et al., 2004; Volant, Johnson, Gullone, & Coleman, 2008). For these reasons, researchers

advocate for the continued study of the relationship between animal abuse and interpersonal violence, calling it “essential” for prevention, increased detection, victim protection, perpetrator apprehension, and intervention (DeGue & DiLillo, 2009; Krienert et al., 2012, pp.280; Simmons & Lehmann, 2007).

Although previous research on the relationship between the abuse of pets and IPV provides some insight into the nature and extent of aggression committed by some individuals who perpetrate IPV, limitations of this research include a restriction to male perpetrators and a lack of controlling for other antisocial features that are linked to IPV perpetration (e.g., hostility, unlawful acts). Additional information about female perpetrators’ use of aggression could be obtained by learning more about whether they also engage in AAA. Further, in order to determine whether AAA is uniquely associated with IPV perpetration, accounting for additional antisocial features is necessary. For instance, antisocial features such as engaging in childhood violence, hostility, conviction of violent crimes, and meeting criteria for ASPD were more highly endorsed by men who perpetrated IPV than men who denied perpetration (Hanson, Cadsky, Harris, & Lalonde, 1997). In a comparison of male inmates designated as committing no, low, and high levels of violence, Edward and colleagues (2003) found that only the high-violence group obtained elevated ASPD scores. The more that is known about AAA in the context of the constellation of antisocial features exhibited by perpetrators of IPV, the better perpetrators may be understood and treatment programs informed.

In the past 2 years, the first studies of their kind addressing these limitations were conducted. In their study of women arrested and court-mandated to BIPs, Febres and colleagues (2012) found a disproportionately high rate of self-reported adulthood animal abuse perpetration (17%) compared to rates reported by women in the general public (0.28%) (Vaughn et al., 2009).

Those women who committed AAA were further found to report more frequent perpetration of psychological aggression and physical assault against their partners compared to those who did not abuse animals. A similar study led by the same researcher examined AAA in a complementary sample of arrested men who were court-mandated to BIPs (Febres et al., in press). In accordance with the findings for the women, AAA perpetration was overrepresented in the male sample (41%) as compared to community samples of men (1.5%) (Vaughn et al., 2009). In this study, in addition to assessing the prevalence of AAA perpetration, the researchers controlled for other antisocial features (e.g., antisocial personality traits) in order to examine whether AAA is uniquely linked to IPV perpetration. AAA perpetration showed a significant trend towards an association with physical assault and severe psychological aggression after antisociality and alcohol use were controlled (Febres et al., in press). Although a disproportionately high rate of both men and women in these studies reported perpetrating AAA, a sex difference is notable between the studies with the men endorsing such behaviors at a greater rate than women. The aforementioned feminist theory of violent behavior may provide an explanation for this, as well as the tendency for gender socialization messages to communicate greater acceptance of overt expressions of negative emotions (e.g., physical altercations) for men, as compared to covert expressions (e.g., harassment, spreading rumors) for women (Eagly & Steffen, 1986; Letendre, 2007). This difference may make it more comfortable for men to commit and to admit to committing AAA relative to women. On average, women's tendency to be more sympathetic towards animal welfare and more involved in animal rights activism than men may also help in understanding the lower prevalence rates of AAA in women (for review, Herzog, 2007).

These studies provide further evidence of a link between animal abuse and IPV, as well as present further avenues of inquiry. For instance, the incidence of AAA perpetration raises questions about the way in which the construct of adulthood animal abuse is measured. As was noted by Febres and colleagues (in press; 2012), improvements to the measurement instrument, the Aggression Towards Animals Scale (ATAS; Gupta & Beach, 2001), could be made that include distinguishing between those who perpetrated AAA against a pet versus another animal and indicating when the animal abuse took place. Differences may exist between individuals who perpetrate AAA against a random animal and those who perpetrate against a pet, and between those whose perpetration is time-limited versus continuous. In addition, the preliminary nature of the pair of studies conducted by Febres and colleagues (in press; 2012) limits the generalizability of the findings until replications are completed.

Current Study

Aims, hypotheses, and data analysis. In light of the limitations of the existing measure used to assess adulthood animal abuse, the ATAS, the first objective for the current study was to create a measure that more comprehensively assessed and described contextual factors related to this construct in men and women. Further, based on the aspects of AAA assessed on the new measure (prevalence, frequency, type of animal, initiation, recency, and motivations), the following hypotheses and associated analyses were proposed. All analyses were conducted separately by sex to see whether any additional information learned about this understudied construct differs depending on the sex of the perpetrator in question.

1a) It was hypothesized that the prevalence and frequency of AAA perpetration would mirror those found in existing studies (Febres et al., in press; 2012) based on the similarities between the study samples, and based on the aforementioned theories that support the

concurrence of IPV and animal abuse perpetration in the same individual (e.g., Shorey, Cornelius, & Bell, 2008). This was examined through the calculation of prevalence and frequency rates of AAA perpetration for men and women. Then comparisons were made with the prevalence (chi-square tests) and frequency (*t*- tests) rates reported in the existing studies by Febres and colleagues (in press; 2012).

1b) It was also hypothesized that men would be more likely to endorse greater amounts of AAA than women as was shown in previous studies (Febres et al. in press; 2012; Herzog, 2007). This is also supported, in part, by the aforementioned feminist theory of violent behavior, gender socialization, and the greater documented rates of positive orientations towards animals reported by women than by men. To examine this, *t*-tests were run using total scores on the measure of AAA and using sex as a grouping variable.

1c) It was further hypothesized that a pet would be the most likely animal involved due to the potential ease of access compared to the other animal types (i.e., stray, farm, wild), particularly if the abuse is serving an immediate emotion regulation function per attachment theory, and based on reports by victims that their partners specifically targeted the family pet (e.g., Ascione et al., 2007). This was examined through the calculation of prevalence rates for type of animal for men and women who endorsed AAA perpetration.

1d) It was additionally hypothesized that those who endorsed AAA perpetration would also report animal abuse perpetration prior to age 15, given the association between childhood animal abuse perpetration and adulthood antisociality, as codified in the diagnostic criteria for ASPD. Furthermore, the presence of both IPV and AAA perpetration may reflect a general learned tendency towards aggression and acceptance of it as a coping strategy per social learning theory, as well as could reflect pervasive emotion regulation difficulties that could be

longstanding per attachment theory (e.g., Shorey, Cornelius, & Bell, 2008). To examine this, the prevalence of animal abuse perpetration prior to the age of 15 was calculated for those men and women who endorse AAA.

No specific hypotheses were provided for which of the motivations identified in the existing literature (e.g., emotion regulation, power and control, etc.) would be most popular nor for the recency of AAA perpetration due to the absence of research about these in perpetrators.

The second objective of the current study was to replicate and to expand the existing preliminary studies on the relationship between AAA and IPV perpetration in men and women with the use of a more comprehensive measure of AAA. More specifically, additional objectives included replication by examining whether AAA accounts for unique variance in IPV perpetration beyond antisocial characteristics, and expansion by examining whether those IPV perpetrators who engaged in AAA differed from those who did not on other characteristics common to perpetrators of IPV. As mentioned above, emotion regulation difficulties and general violence are established correlates of IPV perpetration. Investigating whether those who perpetrated AAA showed differential associations with these features as compared to those who did not perpetrate AAA may lead to a preliminary understanding of these individuals. To address these additional aims, the following hypotheses and associated analyses were proposed.

2a) It was hypothesized that, similar to findings from existing studies (Febres et al., in press), AAA perpetration would be uniquely associated with IPV perpetration beyond antisocial personality characteristics for both men and women. In addition to what similar studies have reported in the past, it may be the case that the endangerment of not only a partner, but also an animal, reflects a greater severity of psychological dysfunction and greater propensity to be aggressive than might be exhibited by others who commit IPV, but who have not committed

AAA. To examine this, hierarchical linear regressions were run with IPV perpetration as the dependent variable, using the total score for antisocial personality characteristics in the first model and the total AAA perpetration frequency score in the second model. Men and women were analyzed separately. The limited prevalence of endorsement by the women (n=4) precluded testing for potential sex differences. If these tests were able to be conducted, the men and women who endorse both IPV and AAA are arguably on the higher end of the aggressive spectrum that exists among court-mandated IPV perpetrators. For this reason, these men and women may be more alike in their potential for antisocial features than they are different, setting the bar high for detecting sex differences. Knowing whether a difference exists, however, could inform discussion about the relative significance of this behavior by sex.

2b) Using the same reasoning, it was also hypothesized that those who perpetrated AAA would demonstrate more difficulties with emotion regulation broadly, more general violence, and antisocial personality characteristics than those who did not perpetrate AAA. Furthermore, the presence of both IPV and AAA perpetration may reflect pervasive emotion regulation difficulties that could be longstanding per attachment theory, as well as could reflect a general learned tendency towards aggression and acceptance of it as a coping strategy per social learning (e.g., Shorey, Cornelius, & Bell, 2008). This was examined in men and women separately with *t*-tests using the total and subscale scores on the measure of emotion regulation, as well as total scores from the measures of general violence perpetration and antisocial personality characteristics, and the presence or absence of AAA was used as the grouping variable.

Chapter 2

Method

Measure Development

In order to create a more comprehensive measure of adulthood animal abuse perpetration, a literature review was conducted on existing methods of assessing animal abuse perpetration. Published self-report questionnaires, surveys, and interviews, as well as informal questions administered in the context of in-person interviews have been used to gather information on these behaviors. With the exception of the Aggression Towards Animals Scale (Gupta & Beach, 2001) and Battered Partner Shelter Survey (Ascione et al., 2007), all existing assessments of animal abuse perpetration that were found inquired about acts committed prior to the age of 18. This is reflective of the fact that animal abuse perpetration has been conceptualized predominantly as a distinct characteristic of antisociality, whose features present prior to age 15, and as an early warning sign of violence (Dadds et al., 2004; Miller & Knutson, 1997).

Informal questions about animal abuse. In a study published in 1985, Kellert and Felthous used an interview format consisting of open- and close-ended questions to assess the incidence of cruelty towards animals in childhood in a sample of aggressive criminals, non-aggressive criminals, and non-criminals. With this study, the authors sought to provide a scientific examination of the suspected link between animal cruelty and aggression against humans, which was primarily supported through anecdotes at the time. A number of cruel acts towards animals were reported including purposely inflicting pain through torture, skinning while alive, stoning or beating, exploding, wounding, entering a dog in a dog fight, throwing an animal from a height, pulling off wings, tying two animals' tails together, electrocution, burning, blinding, cutting off parts of an animal, deliberate starving, hanging, breaking bones, and pouring chemicals on them. Pets, wildlife, and livestock were the reported targets of the cruelty. In

addition, the authors also inquired about potential motivations for such acts and were the first to attempt to classify them. Nine motives emerged including to control an animal, to retaliate against an animal, to satisfy a prejudice against a species or breed, to express aggression through an animal, to enhance one's own aggressiveness, to shock people for amusement, to retaliate against another person, displacement of hostility from a person to an animal, and nonspecific sadism.

Published self-report questionnaires about animal abuse. In an effort to mitigate the demonstrated negative impact on children of the presence of animal abuse in the home by heightening its detection, Boat created the Boat Inventory on Animal-Related Experiences (BIARE; Boat, 1994; 1999) to more comprehensively assess the prevalence and effect of witnessed and perpetrated animal cruelty in the lives of children. The measure consisted of 20 closed- and open-ended questions, was intended to be administered to children, and covered the following areas: history of pet ownership, social support function of animals, animal loss, animal cruelty, animal killing, use of animals to coerce or control a person, sexual interactions with animals, and animal-related fears. Options for the types of animals targeted for cruelty or killing included dogs, cats, birds, fish, horses, turtles, snakes, lizards, insects, rabbits, hamsters, mice, guinea pigs, gerbils, and wild animals. Options for the methods of cruelty or killings included drowned, hit, beat, kicked, stoned, shot (BB gun, bow & arrow), strangled, stabbed, burned, starved or neglected, trapped, and sexual acts. To date, psychometric analyses on this measure have not been published.

Using a modified version of the BIARE, Miller and Knutson (1997) examined the prevalence of childhood involvement in animal cruelty in a sample of incarcerated men and women. Seeking to investigate the relationship between aggressive incidents experienced in

childhood and violence perpetrated in adulthood, the researchers looked at the differential prevalence of animal cruelty perpetration by type of criminal offense and whether perpetration was associated with experiences of child maltreatment. The self-report questionnaire retrospectively assessed for such topics as exposure to animals, witnessing and engaging in the killing of animals, witnessing and committing acts of harm to animals, being controlled by threats of harm to animals and being forced to commit such harm, and witnessing or engaging in sexual acts with animals. Follow-up questions were provided regarding the types of animals involved (pet or stray), the age of the participant at the time in question, and their relationship to the people they witnessed. The authors only published those questions that assessed for acts that resulted in the death of an animal: poison (gas, drugs, or alcohol), drowned, hit (fists, rocks), beat, kicked, shot, strangled or smothered, stabbed/poked with sharp object, burned, threw against wall or object, blew up with an explosive, castrated/mutilated genitals, and accidental. The psychometric properties of the measure used in this study have not been published to date.

Published in 1997 by Ascione, Thompson, and Black, the Children and Animals (Cruelty to Animals) Assessment Instrument (CAAI) is a 34-item semi-structured interview intended for use with children as young as five years old and their parents. Through its creation, the authors aimed to add to the research literature on childhood cruelty to animals by qualitatively and quantitatively assessing the prevalence, frequency, and motivation for such acts. Acts that were witnessed, as well as acts that were committed against pet, farm, wild, and stray animals were examined. Dimensions of cruelty assessed included severity (extent of intentional pain caused), frequency, duration, recency, diversity, sentience (level of concern), covert (attempts to hide the acts), isolation (if the cruelty occurred alone), and empathy (extent of remorse). Inter-rater reliability using child samples varied widely depending on the specific dimension of cruelty, for

example, the recency dimension showed 83% exact agreement, while the isolate dimension showed 60% exact agreement (Ascione, Thompson, & Black, 1997). However, inter-rater reliability was much higher (99%) in studies assessing the retrospective reports of adults (Merz-Perez, Heide, & Silverman, 2001).

Using the CAAI as a guide, in 2004 Dadds and colleagues published a 10-item closed-ended self-report measure of childhood animal cruelty that was purposely shorter than the CAAI to increase its ease of use in clinical and research settings. The Cruelty to Animals Inventory (CAI; Dadds et al., 2004) was designed to be administered to children, and assessed Ascione, Thompson, and Black's (1997) nine dimensions of animal cruelty. Adequate reliability (e.g., test-retest r= .75; inter-rater r= .77-.85) and validity have been demonstrated across more than two studies by the authors (Dadds et al., 2004).

Also with the goal of creating a more concise inventory of childhood cruelty against animals than the BIARE (Boat, 1999) and CAAI (Ascione, Thompson, & Black, 1997), Baldry published the Physical and Emotional Tormenting Against Animals Scale (PET; Baldry, 2004). Designed as a self-report measure for adolescents, the PET is a 9-item closed-ended measure of indirect (witnessing) and direct perpetration of harm, hurt, torment, cruelty, and hitting. Preliminary psychometric analyses show adequate reliability (internal α= .69-.84) and validity for the items assessing direct perpetration (Baldry, 2004).

More recently, researchers have begun constructing measures of animal abuse that assess such acts in ways that differ from their predecessors. Gupta and Beach (2001) adapted the most widely used measure of intimate partner violence, the Revised Conflict Tactics Scale (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996), to reflect acts of aggression committed against non-human animals in their measure, the Aggression Toward Animals Scale (ATAS;

Gupta & Beach, 2001). Rather than assess the abuse of animals in childhood, the 13-item closed-ended questionnaire inquires about the prevalence and frequency of neglect, threats, and physical assault perpetrated against animals since the age of 18. While no formal examination of the measure's psychometric properties has been published, in two preliminary studies using the measure, the ATAS demonstrated adequate reliability (α= .90 and .73) (Febres et al., in press; 2012).

Similarly taking a different approach to assessing animal abuse than preexisting measures, the Battered Partner Shelter Survey (BPSS; Ascione et al., 2007) was intended to obtain female domestic violence shelter resident's reports of their own and their partner's treatment of pets in the home. This 30-item closed-ended survey assessed both lifetime and recent prevalence of threats, actual harm, and killing of pets. To the author's knowledge, no psychometric analyses have been published on this measure.

In addition, there are a number of studies that assess animal cruelty perpetrated in childhood that employ combinations of the informal questions and/or modifications to the published measures presented above (e.g., Boat, Loar, & Phillips, 2008; Felthous & Kellert, 1987; Henderson, Hensley, & Tallichet, 2001).

Construction of the Interactions with Animals Scale (IAS). After a thorough review of the aforementioned existing measures of the perpetration of animal abuse or cruelty, those constructs or items most commonly assessed and that were of direct relevance for an adult sample were retained for use in the construction of the IAS (Ascione, Thompson, & Black, 1997; Ascione et al., 2007; Baldry, 2004; Boat, 1994; Dadds et al., 2004; Gupta & Beach, 2001; Kellert & Felthous, 1985; Miller & Knutson, 1997). Starting with the instructions, due to the sensitive, socially unacceptable nature of the acts included in the IAS, a reminder about confidentiality was

included in an effort to increase honest responding. To ease the burden a lengthy questionnaire may impose on a respondent, efforts were made to combine specific acts that were most alike; for instance, beat, hit, kicked or stomped, as well as electrocuted, burned, or poured chemicals on an animal. Items representing the three categories of abusive or cruel acts: neglect, threats, and physical harm, were included. There are 15 types of animal abuse or cruelty in total. Both the prevalence and frequency of specific acts committed after the age of 18 were incorporated to understand the potential severity of the aggression, with frequency being one indicator of severity. The frequency of the 15 behaviors was rated on a 7-point scale (*0= never, 1= once, 2= twice, 3= 3-5 times, 4= 6-10 times, 5=11-20 times, 6= more than 20 times*). Responses of 3 or higher were recoded into midpoints for the purposes of scoring (i.e. *3=3-5 times* recoded into 4, *4=6-10 times* recoded into 8, *5=11-20 times* recoded into15, *6=more than 20 times* recoded to 25). Total scores ranged from 0 to 375. Two items asking about the initiation and recency of abusive acts were included to provide a sense of the chronicity of the aggression towards animals. An item specifically exploring the initiation of perpetration prior to age 15 was incorporated to assess whether they may have presented early evidence of an antisocial personality presentation. Type of animal was also evaluated to make it possible to examine whether differences existed based on the animal victimized. Lastly, 11 motivations were included to provide context to better understand the nature of the aggressive tendencies of the participants. See Appendix A for the IAS.

Study Replication and Expansion

Administration of the IAS. An attempt was made to closely match the administration procedures of the studies that employed the ATAS (Febres et al., in press; 2012) to allow for a more direct comparison to the only other existing literature examining AAA in perpetrators of

IPV. The internal consistency of the IAS in the current study was .66 for men and was unable to be calculated for the women due to zero variance on 11 of the 15 items.

Participants. The sample consisted of 157 men and 41 women arrested for domestic violence and court-referred to Rhode Island BIPs. These individuals completed the measures of interest to the current study and represented a sub-sample of the total sample (N=420). Male participants reported a mean age of 32.6 years (*SD* = 10.4), education of 12.0 years (*SD* = 1.9), and annual income of $24,262 (*SD* = 26,589). The ethnic composition of the sample was 69.4% non-Hispanic Caucasian, 6.4% African-American, 10.2% Hispanic, 2.5% American Indian/Alaskan Native, 3.8% other, and 7.6% identified as 2 or more. At the time of the study, 12.7% of the men were married, 20.4% were cohabiting and not currently married, 33.8% were dating, 21.7% were single, 6.4% were separated, and 3.8% were divorced. The average length of the men's current relationship was 4.8 years (*SD* = 6.6) and the length of time living with their current intimate partner was 4.0 years (*SD* = 5.7). Female participants reported a mean age of 31.0 years (*SD* = 10.7), education of 12.2 years (*SD* = 1.3), and all but one woman declined to report her annual income. The ethnic composition of the sample was 75.6% non-Hispanic Caucasian, 4.9% African-American, 4.9% Hispanic, 4.9% American Indian/Alaskan Native, 2.4% other, and 4.9% identified as 2 or more. At the time of the study, 7.3% of the women were married, 22.0% were cohabiting and not currently married, 29.3% were dating, 24.4% were single, 9.8% were separated, and 7.3% were divorced. The average length of the women's current relationship was 3.7 years (*SD* = 5.8) and length of time living with their current intimate partner was 2.4 years (*SD* = 3.7).

Procedure. Participation was voluntary and questionnaires were completed during the regularly scheduled BIP sessions. No compensation was provided for completing the

questionnaires and none of the information gathered was shared with the intervention facilitators or anyone within the criminal justice system. After giving informed consent, the participants were provided with a questionnaire packet.

The mean number of batterer intervention sessions attended by participants at the time of the study was 10.3 (*SD*= 7.8) for males and 8.1 (*SD*= 6.0) for females. Total number of intervention sessions attended was not significantly related to any of the variables of interest in the current study, suggesting that number of sessions attended did not affect study results.

Measures.

Demographics. Information was obtained about the participants' age, education, income, ethnicity, marital status, duration of current relationship, and duration of cohabitation with current partner.

Antisocial personality characteristics. Antisocial personality characteristics were measured using the Antisocial Personality Disorder (ASPD) subscale of the Personality Diagnostic Questionnaire-4 (PDQ-4; Hyler et al., 1988), which includes one item assessing animal abuse committed before the age of 15. Intended for use as a screening instrument for a possible diagnosis of ASPD, sample items include (True or False): "I've been in trouble with the law several times (or would have been if I was caught)" and "Lying comes easily to me and I often do it." High internal consistency (Hyler et al., 1989) and good test-retest reliability (Trull, 1993) has been demonstrated for the PDQ-4. The internal consistency for the current study was .88 for males and .87 for females.

Intimate partner violence. IPV perpetration in the past year was assessed with the Revised Conflict Tactics Scale (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996). Total scores on the Psychological Aggression and Physical Assault subscales were examined for

the current study. Within these subscales, items are classified by severity level (mild or severe), with severity defined by the risk of injury associated with each behavior. Sample items measuring severe psychological aggression include, "Threatened to hit or throw something at my partner" and “Destroyed something belonging to my partner”, and severe physical assault items include, "I slammed my partner against a wall" and “Punched or hit my partner with something that could hurt." The number of times a specific form of aggression was used against an intimate partner in the year before entrance into the BIP was rated on a 7-point scale (0= never, 6= more than 20 times). The frequency of each behavior, which ranged from 0 to 25 for each item with higher scores indicating more frequent aggression (Straus, Hamby, & Warren, 2003), was summed to create a total score for Psychological Aggression and Physical Assault. Adequate reliability and validity have been demonstrated by the authors (Straus et al., 1996). The internal consistency of the Psychological Aggression and Physical Assault subscales in the current study were .84 and .81 for men and .85 and .93 for women, respectively.

General violence. The General Violence Conflict Tactics Scale (GVCTS; Stuart, Moore, Ramsey, & Kahler, 2003) was used to assess violence committed against non-intimate partners. Participants reported the number of times they engaged in violence with someone other than an intimate partner since the age of 18. Modeled after the Conflict Tactics Scale for intimate partner violence (Straus, 1979), the frequency of each behavior was rated on a 7-point scale (0= never, 6= more than 20 times). Scores ranged from 0 to 25 for each item. The internal consistency for the current study was .89 for men and .73 for women.

Emotion regulation. Participants’ emotion regulation skills were examined using the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). The DERS measures six different aspects of emotion regulation, including (1) non-acceptance of emotional responses

(NER), (2) difficulties engaging in goal-directed behavior (GDB), (3) impulse control difficulties (ICD), (4) lack of emotional awareness (LEA), (5) limited access to emotion regulation strategies (LAERS) and (6) lack of emotional clarity (LEC). A total score, which is calculated to examine broad deficiencies in emotion regulation, was used. Participants ranked their response to each item using a 5-point scale (1=almost never; 5=almost always) to specify how frequently the items pertain to themselves. Higher scores are reflective of greater difficulties with emotion regulation. The DERS has exhibited good internal consistency while also providing good construct and predictive validity (Gratz & Roemer, 2004). The internal consistency for the current study was .89 NER, .85 GDB, .82 ICD, .85 LEA, .86 LAERS, .75 LEC, and .94 Total for men, and was .88 NER, .85 GDB, .86 ICD, .85 LEA, .76 LAERS, .78 LEC, and .93 Total for women.

Chapter 3

Results

Bivariate correlations, means, and standard deviations for all variables are presented in Tables 2-4. Means and standard deviations were derived from raw scores of all the measures. For the remaining analyses, raw scores were used for the CTS2 Psychological Aggression subscale, the DERS, and PDQ-4, while natural log transformations of the IAS, CTS2 Physical Assault subscale, and GVCTS were used to correct for positively skewed distributions. For the full sample, AAA was positively and significantly associated with antisocial characteristics, general violence, and impulse control difficulties. For the men, AAA was positively and significantly associated with antisocial characteristics, general violence, impulse control difficulties, difficulties with goal-directed behavior, and limited access to emotion regulation strategies. AAA was not significant correlated with any of the study variables for the women.

The first aim of this study was to create a more comprehensive measure than currently exists to assess and to describe contextual factors related to adulthood animal abuse in men and women. The IAS can be found in Appendix A. The internal consistency estimate for the full sample was $\alpha = .67$ and for the men was $\alpha = .66$. For the women, zero variance on 11 of the 15 items made it such that the internal consistency estimate was unable to be interpreted.

An exploratory factor analysis (EFA) was conducted to preliminarily test whether the newly developed measure of AAA assesses one or more dimensions of AAA, which might provide more descriptive information about the nature of the construct as it applies to the sample studied. A maximum likelihood (ML) model fit procedure was chosen for its ability to produce multiple fit indices, to provide significance tests of factor loadings, correlations between factors, and associated confidence intervals (Fabrigar, Wegener, MacCallum, & Strahan, 1999). To be in

accordance with normality assumptions of the ML method, natural log transformation was chosen to correct for the positive skew and kurtosis of the data. Parallel analysis was used to determine the number of factors due to its ability to address weaknesses of commonly used techniques (e.g., Cattell's Scree test) and due to the empirical evidence of its accuracy relative to other techniques (e.g., Kaiser criterion) (Courtney, 2013; Fabrigar, Wegener, MacCallum, & Strahan, 1999). Finally, an oblique rotation was chosen due to the expectation that because the behaviors assessed on the measure are fundamentally alike in that they are all unkind, they would be correlated. The EFA presented several challenges. First, of the 14 inter-item correlations possible for any one item, from 4 to 11 of the correlations were correlated at $r < 0.3$. The independence of these items, as reflected by these low correlations, was a barrier to extracting common factors (Field, 2009). When those items were deleted to address this issue, some of the remaining items were too highly correlated *(*$r > 0.8$), making it impossible to determine the unique contribution of those items to a factor (Field, 2009). Further deletion of these items to address this additional issue resulted in the maintenance of 6 items, composing 2 factors for the full sample. Analyses for men and women separately failed to run. A satisfactory explanation of the clustering of the 6 items composing the 2 factors could not be determined (Factor 1: Strangled/smothered an animal and Tortured an animal; Factor 2: Poisoned/drowned/blew up an animal, Entered animal into a fight, Electrocuted/burned/poured chemicals on, and beat/hit/kicked an animal). After consultation with professionals in the field, it was additional suggested that an EFA may not have been the best analysis suited for the uneven interval scale of the answer options; however, a more appropriate analysis is unknown at this time. It was at this point that any further pursuit of the EFA on the IAS was discontinued.

Of the 157 men and 41 women who completed the Interactions with Animals Scale, 38 men (24.2%) and 4 women (9.8%) endorsed at least one of the 15 acts of adulthood animal abuse assessed. A chi-square test comparing the prevalence of adulthood animal abuse in men and women showed that significantly more men perpetrated AAA than women ($X^2(1, 198) = 4.06$, $p = 0.04$). Further, a chi-square test comparing the prevalence of adulthood animal abuse in the current study to the prevalence of animal abuse in the studies by Febres and colleagues (in press; 2012) was performed and showed that animal abuse was endorsed significantly less by the men in the current study ($X^2(1, 464) = 12.43$, $p < .001$), whereas the women's prevalence rates did not differ significantly across the studies ($X^2(1, 128) = 1.24$, $p = 0.27$). Prevalence rates are reported in Table 1.

On average, the men reportedly perpetrated 2.13 acts of animal abuse ($SD = 7.10$). Physical abuse was endorsed with the highest prevalence ($n = 32$, 20.4%) and frequency ($M = 1.54$, $SD = 6.45$), followed by threats ($n = 20$, 12.7%; $M = 0.41$, $SD = 1.58$), and neglect ($n = 3$, 1.9%; $M = 0.18$, $SD = 2.00$). On average, the women reportedly perpetrated 0.17 acts of animal abuse ($SD = 0.59$). Physical abuse was endorsed with the highest prevalence ($n = 4$, 7.3%) and frequency ($M = 0.12$, $SD = 0.51$), followed by threats ($n = 1$, 2.4%; $M = 0.05$, $SD = 0.31$), and no endorsement of neglect. Frequency rates are reported in Table 1. T-tests comparing the frequency of adulthood animal abuse in men and women showed that men perpetrated significantly more overall AAA ($t(196) = 3.86$, $p < .01$), as well as physical ($t(196) = 3.48$, $p < .01$) and threatening ($t(196) = 2.94$, $p < .01$) acts of AAA. Furthermore, a *t*-test comparing the frequency of any act of adulthood animal abuse in the current study to the frequency of any act of AAA in the studies by Febres and colleagues (in press; 2012) (men: $M = 2.62$, $SD = 5.36$; women: $M = 1.52$, $SD = 6.67$) was performed and showed that the frequency of AAA was not

significantly different for the men ($t(462)= 0.83$, $p=0.41$) nor for the women ($t(126)= 1.29$, $p=0.20$) in the current study.

Of the 4 types of animals possible, pets were reported as victims by 13 participants (12 men and 1 woman), stray animals by 8 participants (6 men and 2 women), and wild animals by 5 men. No women reported perpetrating AAA against a wild animal and no reports were made for farm animals by either sex.

Nineteen men reported that they had first engaged in any form of animal abuse starting as early as age 5 to age 24, with 11 reporting initiation prior to age 15. Those men who started engaging in animal abuse prior to age 15 reported committing an average of 5 acts ($SD= 6.94$) against, in order of prevalence, stray and wild animals ($n= 7$), pets ($n= 5$), and farm animals ($n= 1$). Two women responded to the question about their initiation of animal abuse by reporting ages 13 and 19. The woman who reported engaging in animal abuse prior to age 15 reported committing 2 acts total against a pet and stray animal.

In terms of motivations for and recency of animal abuse, of the 10 reasons for AAA perpetration assessed, in order of highest prevalence, the following motivations were endorsed by men: No specific reason, or for fun ($n= 8$), Accident ($n=6$), To control an animal ($n=6$), I did not like the type of animal it was ($n=3$), To release anger or frustration ($n=3$), To get revenge on the animal for something it did to you ($n=2$), To practice your fighting skills or to impress others with your fighting skills ($n=1$), and To upset someone else or to control someone else by harming their animal ($n=1$). Women endorsed the following motivations: To control an animal ($n=1$), I did not like the type of animal it was ($n=1$), No specific reason, or for fun ($n=1$). Two women reported that their most recent incident of animal abuse was age 13 and 19, while 20 men reported ages which ranged from 10 to 32 years of age, 9 of which were under the age of 18.

The second aim of the study was to use a more comprehensive measure of AAA to replicate existing studies on the relationship between AAA and IPV by examining whether AAA accounts for unique variance in IPV perpetration beyond antisocial characteristics, and to expand on those studies by examining whether those IPV perpetrators who engaged in AAA differed from those who did not on other characteristics common to perpetrators of IPV. The small sample of women who completed the IAS, paired with the even smaller prevalence of any endorsement of AAA, precluded regression analyses with the female participants. Analyses with the male participants revealed that AAA was not significantly associated with psychological or physical IPV above and beyond antisocial personality characteristics.

Comparisons between those individuals who endorsed any AAA and those who did not showed that male perpetrators of AAA were significantly more likely to endorse higher rates of antisocial personality characteristics ($t(147)=2.25$, $p< .05$,$M= 2.12$, $SD= 0.67$) and greater difficulty with emotional clarity ($t(154)= 2.10$, $p< .05$, $M= 2.35$, $SD= 0.39$) than those men who denied AAA perpetration ($M= 1.8$, $SD=0.80$ and $M= 2.19$, $SD=0.41$, respectively). Female perpetrators of AAA were not significantly different on measures of antisocial personality characteristics, emotional regulations difficulties, and general violence than those women who did not endorse AAA, which may reflect a lack of power to detect significance given the 4 women who endorsed AAA.

Chapter 4

Discussion

The goals of the current study were: a) to assess and to describe more thoroughly than had been done previously, the perpetration of adulthood animal abuse in male and female perpetrators of intimate partner violence, with a newly developed measure of AAA, b) to examine whether the perpetration of AAA is associated with IPV perpetration beyond antisocial personality characteristics, and c) to explore whether perpetrators of AAA differed from those who denied AAA perpetration on measures of emotion regulation difficulties, frequency of general violence perpetration, and antisocial personality characteristics. The methods of this study attempted to address several of the limitations present in previous investigations of AAA in this population, including assessing both men and women, using a more comprehensive measure of AAA, and controlling for other known correlates of IPV to determine the relative importance of AAA perpetration to IPV perpetration (Ascione et al., 2007; Febres et al., in press; 2012; Tiplady, Walsh, & Phillips, 2012).

Findings from this study partially supported the first hypothesis that the prevalence and frequency of AAA perpetration would be similar to those found in existing studies. Consistent with the rates reported by Febres and colleagues (in press; 2012), the 24.2% rate of AAA perpetration by men and 9.8% rate by women in this sample are significantly greater than the 1.5% rate by men and 0.3% rate by women reported in a study of a nationally representative sample (Vaughn et al., 2009)[1]. Although, Vaughn and colleagues (2009) asked one question to assess adulthood animal abuse in their study, the current study asked about 15 different forms of

[1] A chi-square analysis comparing the prevalence of adulthood animal abuse in the current study to the prevalence of animal abuse in the study by Vaughn and colleagues (2009) was performed and showed that animal abuse was endorsed at a significantly higher rate by both men ($X^2(1, 20190) = 224.50$, $p<.001$) and women ($X^2(1, 21939) = 62.87$, $p<.001$) in the current study.

animal abuse. The significant differences in prevalence rates could be attributed to these different assessment methods. Further, the population from which the sample in this study was drawn - men and women arrested for domestic violence offenses - is arguably more likely to be aggressive on average than a nationally representative sample of adults that are chosen at random. The concurrence of IPV and animal abuse perpetration in adulthood is supported by the deviance generalization hypothesis, which views animal abuse as one of many forms of deviance that can be enacted by one individual as the result of the same underlying cause (Arluke, Levin, Luke, & Ascione, 1999). As has been shown empirically in previous studies of animal abuse and IPV perpetration, the common underlying cause for AAA and IPV perpetration may be learned aggression and learned attitudes that accept aggression per social learning theory (Bandura, 1977), a drive to dominate less powerful others per feminist theory (Adams, 1994), or limited emotion regulation abilities per attachment theory (Beetz, 2009). Given the rates of AAA in this and previous studies, future research may assess for AAA to gain a more comprehensive sense of the extent of IPV perpetrators' aggressive tendencies and to better understand potential underlying causes.

At the same time, the first hypothesis was not supported because, as compared to the previous studies which drew from comparable populations of individuals referred to BIPs (Febres et al., in press; 2012), the prevalence of AAA in this study was significantly lower for men. This discrepancy could be attributed to the different instruments used to measure AAA. In contrast to the Aggression Towards Animals Scale, the Interactions with Animals Scale is longer and features more specific questions about the nature of the AAA committed. Given the sensitive nature of the topic of animal abuse and the established cultural taboos against it (Unti, 2008), it may be that the volume and specificity of the questions on the IAS induced discomfort and

created a barrier to responding and/or to responding honestly. Alternatively, because studies of AAA are in their early stages, the range of behaviors that are committed has yet to be established. As such, the prevalence rate found in this study, while different than the previous two studies, may be accurate and simply indicative of the wider range that exists for AAA perpetration in this population. In the future, additional research studies on AAA could establish a base rate of this behavior in this population against which other studies can be compared.

The second hypothesis that men would endorse significantly more AAA than women was supported for overall AAA, as well as physical and threatening acts of AAA. The power to detect significant differences for acts of neglect across sex was limited by the very low endorsement (3 men and 0 women). Greater rates of AAA perpetration by men than women is consistent with previous studies of perpetrators of IPV (Febres et al., in press; 2012) and studies comparing males' and females' interactions with animals (Herzog, 2007; Vaughn et al., 2009). On the one hand, it may be that men indeed perpetrate more AAA than women, which is postulated by feminist theory, for example. It may also be that men are more likely to report such behavior based on the greater comfort afforded them by gender socialization teachings about appropriate displays of negative emotion for males (Letendre, 2007). On the other hand, a sample size of women that is more comparable to that of men may be needed to more accurately evaluate such a comparison. As the only study that has attempted to make such a comparison and given the small sample size of women, replications are needed to ensure fairer comparisons.

In accordance with studies of childhood animal abuse perpetration (Merz-Perez, Heide, & Silverman, 2001; Wright & Hensley, 2003) and of victims of IPV (Ascione et al., 2007; Tipaldy, Walsh, & Phillips, 2012), pets were the most commonly endorsed type of animal to be the victim of AAA. Research shows that humans often develop very strong bonds to their pets akin to

bonds with human family members (Sable, 1995; Schvaneveldt, Young, Schvaneveldt, & Kivett, 2001), and pets have been reported to provide emotional support (McNicholas et al., 2005), as well as to contribute positively to the mental and physical health of their owners (Friedmann & Son, 2009; Raina, Waltner-Toews, Bonnett, Woodward, & Abernathy, 1999). The important and influential role of pets in the lives of their owners, paired with the cultural taboo against animal cruelty (Unti, 2008), makes perpetration of AAA against pets, rather than stray, wild, or farm animals, particularly unexpected. For these reasons, it may be that accessibility was a significant factor in why pets were most likely to be victimized. It may also be that if social learning played a role in the development of AAA perpetration in this sample, the victimization specifically of companion animals may have been modeled. In fact, studies show an empirical association between a history of animal cruelty and observing, in childhood or adolescence, animal cruelty by another person (Baldry, 2003; Thompson & Gullone, 2006). Additional research is needed to further understand why certain animals are victimized and whether this information may provide further insight into perpetrators' aggressive tendencies.

Similar rates of men and women who endorsed AAA reported engaging in animal abuse prior to age 15, 28.9% and 25.0%, respectively. This may reflect longstanding difficulties that may be explained by each of the theories discussed- social learning, feminist, and attachment (Bandura, 1977; Beetz, 2009; Flynn, 2009). However, contrary to what was hypothesized, these percentages reveal that it was much more common for animal abuse perpetration to start after age 15, beyond the age at which animal abuse is typically asked about and considered a problematic symptom of future ASPD. This later onset may mean that it is more likely that these forms of aggression appear closer in succession or at later developmental times than is traditionally thought, which supports the deviance generalization hypothesis over the graduation

hypothesis of animal abuse (Arluke, Levin, Luke, & Ascione, 1999; Ascione & Lockwood, 2001). This may highlight the importance of assessing for animal abuse beyond age 15 in order to get a more complete picture of an individual's aggressiveness. As such, future research on aggression or antisociality, as examples, may want to consider extending the time frame of questions about animal abuse perpetration to beyond age 15.

Although too few participants reported motivations for committing AAA to make substantive conclusions, it may be preliminarily noted that neither emotion regulation nor coercion of another person were dominant motivations, as found in previous literature (Bushman, Baumeister, & Phillips, 2001; Johnson, 2006; Loring & Bolden-Hines, 2004). This difference may be attributed to the low response rate, which provides only a limited picture of the range of possible motivations that exist. Also, personal insight into the motivations of one's behaviors requires a willingness and ability to be introspective. The socially unacceptable nature of animal abuse may have been a barrier to such introspection about this behavior and, subsequently, a barrier to responding. At the same time, the most popular motivations reported, "No specific reason, or for fun" and "To control an animal", may provide additional support for the relevance of social learning and feminist theories of IPV to AAA perpetration. "No specific reason or for fun" characterizes AAA perpetration as unprovoked, random, and for recreation. It is foreseeable that this type of perpetration could have developed in an environment where animal abuse was actively or passively condoned per social learning theory. Indeed, research shows that AAA is a learned behavior for some (Baldry, 2003; Thompson & Gullone, 2006). "To control an animal" was the second most popular motivation endorsed which is consistent with what feminist theory hypothesizes is at the heart of aggression perpetration- the desire for power and control over less powerful others- and which has been reported before by perpetrators of animal abuse (Simmons

& Lehmann, 2007). As one of the first studies to descriptively examine AAA perpetration, at a very basic level, these findings provide some indication that there is variability in motivations among perpetrators. Future research is necessary to further elucidate the range of motivations possible and what they may tell us about perpetrators of IPV.

The replication of analyses from previous studies showed that, contrary to what was hypothesized, AAA perpetration was not uniquely associated with IPV perpetration beyond antisocial personality characteristics for men. In a previous study in a similar population, there was a non-significant trend for a unique association between AAA and IPV perpetration beyond antisociality (Febres et al., in press). This may mean that, of the range of antisocial behaviors that exist, animal abuse in adulthood may not provide unique information about the perpetration of IPV; it alone may not confer any additional risk for specific types or severity of IPV. This may be because, although as a form of aggression like IPV animal abuse may be unique among other antisocial features (e.g., deceitfulness, impulsivity, lack of remorse), it is very much like the other features in scope in that it reflects a "pervasive pattern of disregard for and violation of the rights of others" (American Psychiatric Association, 2013, p. 659). While AAA may not be worth assessing for any independent information it can provide about the nature of IPV perpetration committed, as an indication of antisociality in general, it may be worth asking about because of the repeated association found between ASPD, and psychological and physical violence perpetration (Edwards, Scott, Yarvis, Paizis, & Panizzon, 2003; Hanson, Cadsky, Harris, & Lalonde, 1997). Future research on IPV perpetrators may want to inquire about adulthood animal abuse as an indicator of antisociality that is not traditionally assessed.

Although AAA did not have a unique association with IPV perpetration for men, those men who endorsed AAA reported significantly more antisocial personality characteristics and

difficulties with emotional clarity. As the diagnostic criteria states, characteristics that are associated with antisocial personality disorder describe a "pervasive" way of being in the world (American Psychiatric Association, 2013, p. 659). For this reason, it is foreseeable that those who endorsed two significant antisocial acts, AAA and IPV perpetration, would report more antisocial features than those who denied AAA. This is further supported by the deviance generalization hypothesis, which posits that deviant behaviors are more likely to co-occur than to occur independently of one another due to the same underlying cause (Arluke, Levin, Luke, & Ascione, 1999). The underlying cause here may be learning to be accepting of violence or accepting of the idea that others can be controlled, but not necessarily trusted, per the social learning and attachment theories (Bandura, 1977; Beetz, 2009). Further, lacking emotional clarity may make it difficult to know how best to deal with negative emotions and could result in more widespread aggression. However, it is unclear why significantly more difficulties were only seen in emotional clarity, especially when it is arguable that a lack of emotional clarity may precede and lead to difficulties in several of the other aspects of emotional regulation (e.g., accepting distress, concentrating in the midst of distress, awareness of negative emotions, etc.) and given the moderate to strong correlations between this DERS subscale and the rest of the subscales (r = .46-.61, p<.01). Replications are needed before conclusions can be drawn from these results.

Implications

Overall, this study adds to the recently growing literature on animal abuse perpetration in adults accused of IPV. This study showed that both male and female perpetrators of IPV report engaging in AAA, at higher rates than community samples of adults, and males at higher rates than females. Similar to aggression against non-intimate partners and children, which has been

found to be associated with IPV perpetration, AAA may reflect a general tendency towards aggression in the lives of some perpetrators of IPV. Research shows that generally violent individuals differ from partner-only violent individuals such that they report more symptoms of trauma, more violent socialization, and more impulsivity, as examples (Babcock, Miller, & Siard, 2003; Boyle, O'Leary, Rosenbaum, & Hassett-Walker, 2008). It may be that broader difficulties in such areas as information processing and emotion regulation as compared to difficulties specific to the current intimate relationship, place people at greater risk for IPV perpetration. Determining the extent to which people use aggression in their lives could impact treatment approaches. For instance, attendants of intervention programs could be evaluated to ascertain the extent of potential widespread difficulties and asking about AAA may help in this determination. This information could help to identify differential targets for treatment; it is foreseeable that an individual with primarily emotion regulation difficulties will require different interventions (e.g., anger management) than an individual who is significantly antisocial with little capacity for remorse (e.g., motivational enhancement for change). Further exploring the extent of an individual's psychological difficulties could also add to the rehabilitative focus of current intervention models, which may be more appealing to program participants who, by virtue of the fact that they are mandated to attend, may experience the intervention as punitive. Obtaining this additional information could be done at intake or after rapport has been established with intervention facilitators to increase the possibility of honest responding.

The importance of asking about AAA is further supported given the number of people who reported initiating animal abuse after age 15. The majority of the individuals who endorsed AAA reported that they were older than 15 when they perpetrated their first act of animal abuse. If assessments of animal abuse are limited to abuse committed in adolescence/childhood, as is

traditionally the case because animal abuse is a diagnostic symptom of conduct disorder (American Psychiatric Association, 2013), it is clear from these findings that such assessments would be missing several incidents of animal abuse perpetration. As a result, the full scope of an individual's aggression may be misunderstood and information that is potentially useful for treatment purposes would be overlooked.

Furthermore, having a more complete picture of an individual's aggression can help to inform theories about this behavior. The applicability of several of this study's findings to some of the existing theories of IPV (social learning, feminist, and attachment theory) supports broadening the scope of the aggressive behaviors such theories may explain. Likewise, the findings also serve to further validate the deviance generalization hypothesis of animal abuse. Psychological treatments that are theory-driven and the outcomes of treatments that have "theoretical plausibility" are advocated for over treatments that are solely evidence-based (Lilienfeld, 2011). By providing further support for the aforementioned theories, the findings in this study may, therefore, also support treatment based on these theories.

As discussed, the more comprehensive nature of the IAS compared to previous assessments of AAA (Vaughn et al., 2009) may have contributed to the greater rates of AAA endorsement. This may support more detailed inquiries about AAA in order to capture more accurately the actual incidence of this behavior. However, the low level of endorsement on the measure overall may call into question the current way the questions are asked. Therefore, modifying the procedure to make sure the best balance is struck between comprehensiveness and limited participant burden may be worthwhile. For instance, to ensure that the construct of AAA is being captured accurately and efficiently, it may be helpful to conduct qualitative interviews with individuals to better understand first-hand the different facets of animal abuse (e.g., range of

acts, motivations, etc.). Getting a better sense of how perpetrators think about the animal abuse that they have committed could better ensure that the content and, therefore, the relevance, of the questions is maximized, as well as could provide clues as to the most sensitive way to inquire about such acts to maximize comfort in responding. For example, the current way the motivation options read, they reflect how researchers might categorize responses, rather than reflect actual phrases that might be used to describe personal motivations for AAA (e.g., "To release anger or frustration" could be changed to "Because I was angry or pissed off"). Approximating actual responses more closely may more accurately reflect the experience of the participant and may positively impact honest responding. The interviewers conducting the qualitative interviews can further mitigate the potential discomfort induced by difficult questions by addressing in the moment any concerns or hesitancy that may arise from a respondent. Another way the IAS may be improved to encourage honest responding is with the inclusion of questions about positive human-animal interactions. For example, asking about the incidence of rescuing an animal from an animal shelter or about taking care of a friends' pet while the friend was away. Collectively, including questions that cover both positive and negative human-animal interactions could make the purpose of the measure more subtle and, therefore, potentially facilitate completion of the entire measure. This approach is present in the measure of IPV used in this study, the CTS2, which assesses both positive conflict tactics such as "I showed respect for, or showed that I cared about my partner's feelings about an issue we disagreed on", and negative tactics (Straus, Hamby, Boney-McCoy, & Sugarman, 1996). This approach appears in other areas as substance abuse research and its usefulness versus a more direct approach is debatable (Feldstein & Miller, 2007).

Finally, the finding that pets were the most frequently victimized type of animal may have implications for policy and domestic violence shelters. As research establishing an association between animal abuse and domestic violence (child abuse and IPV) grows, researchers are encouraging interagency reporting among animal protection organizations, veterinarians, social service agencies, and law enforcement of both to increase detection and intervention (Becker & French, 2004; DeGue & DiLillo, 2008; Long, Long, & Kulkarni, 2007). The popularity of pets as victims in this study supports this argument. Furthermore, these findings, paired with the fact that shelter seeking by IPV victims is often delayed or discontinued out of concern for pets (Ascione et al., 2007; Carlisle-Frank et al., 2004; Volant, Johnson, Gullone, & Coleman, 2008), supports the relatively recent, ongoing movement to accommodate pets in domestic violence shelters (The Humane Society of the United States, 2009).

Limitations & Future Directions

The limitations of the current study are important to consider when interpreting these findings. First, this is one of only a handful of studies to investigate AAA and the rate of endorsement was low for many of the IAS items. Relatedly, the IAS has not yet been validated and, therefore, it is possible that there are more valid and reliable ways of assessing the construct of AAA. Therefore, any conclusions that may be made about this study's findings must be considered preliminary until further replications are complete. Second, the sensitive nature of the topic of animal abuse and the context under which participants completed the measures- namely, as part of their attendance at a mandatory program for an offence for which they may already be defensive- may have resulted in underreporting. Third, the questionnaire used to assess antisocial personality characteristics (PDQ-4) was designed to be a screener and, although the PDQ-4 has adequate psychometric properties, a more comprehensive measure of these characteristics may

be more useful in future studies. Fourth, the inclusion of a control group of individuals who perpetrated AAA, but not IPV, may serve as a valuable comparison group from which further insights into IPV perpetrators may be gained. Fifth, the cross-sectional design of this study prevented conclusions about causality and the reliance on retrospective reporting may have impacted the accuracy of some of the information obtained. Longitudinal study designs would effectively address these limitations in subsequent studies. Finally, the majority of the sample identified as male and non-Hispanic Caucasian. The generalizability, therefore, is limited to this demographic. Also, the small sample of female participants severely limited the conclusions possible. Studies with more diverse samples are needed.

Conclusion

In conclusion, this study contributes to the expanding knowledge about IPV perpetrators and the nature of AAA perpetration. This study is the first attempt to comprehensively examine AAA with a new measure of the construct. Despite the limitations of the IAS and of the sample, additional descriptive information about the prevalence, frequency, type of animals involved, initiation, and recency was obtained from which base rates and ranges can further be established, and from which future studies may be conducted. At this point, although it is still uncertain what, if any, relationship AAA has to IPV perpetration, learning more about AAA provides greater insight into IPV perpetrators themselves. Therefore, overall, these findings provide additional information by which to better understand some perpetrators of IPV, as well as have implications for policies on interagency reporting and domestic violence shelter accommodations. Continued investigations are needed.

List of References

Adams, C. J. (1994). Bringing peace home: A feminist philosophical perspective on the abuse of women, children, and pet animals. *Hypatia*, *9*(2), 63-84.

American Psychiatric Association. (2013). Antisocial personality disorder. In *Diagnostic and statistical manual of mental disorders: DSM-5.* Arlington, VA: American Psychiatric Association.

Appel, A.E., & Holden, G.W. (1998). The co-occurrence of spouse and physical child abuse: A review and appraisal. *Journal of Family Psychology,12*, 578-599.

Arluke, A., Levin, J., Luke, C., & Ascione, F.R. (1999). The relationship of animal abuse to violence and other forms of antisocial behavior. *Journal of Interpersonal Violence, 14,* 963-975.

Ascione, F.R. (1993). Children who are cruel to animals: A review of research and implications for developmental psychopathology. *Anthrozoos, 6,* 226-247.

Ascione, F., & Lockwood, R. (2001). Cruelty to animals: Changing psychological, social, and legislative perspectives. In D. Salem & A. Rowan (Eds.), *State of the animals* (pp. 39-53).Washington, DC: Humane Society Press.

Ascione, F. R., Thompson, T. M., & Black, T. (1997). Childhood cruelty to animals: Assessing cruelty dimensions and motivations. *Anthrozoos: A Multidisciplinary Journal of the Interactions of People & Animals, 10*(4), 170-177.

Ascione, F. R., Weber, C. V., Thompson, T. M., Heath, J., Maruyama, M., & Hayashi, K. (2007). Battered pets and domestic violence: Animal abuse reported by women experiencing intimate partner violence and by nonabused women. *Violence Against Women, 13,* 354-373

Babcock, J. C., Green, C. E., & Robie, C. (2004). Does batterers' treatment work? A meta-

analytic review of domestic violence treatment. *Clinical Psychology Review, 23,* 1023–1053. doi:10.1016/j.cpr.2002.07.001

Babcock, J. C., Miller, S. A., & Siard, C. (2003). Toward a typology of abusive women: Differences between partner-only and generally violent women in the use of violence. *Psychology of Women Quarterly, 27*, 153-161.

Baldry, A. C. (2003). Animal abuse and exposure to interparental violence in Italian youth. *Journal of Interpersonal Violence*, *18*(3), 258-281.

Baldry, A. C. (2004). The development of the PET scale for the measurement of physical and emotional tormenting against animals in adolescents. *Society & Animals, 12*(1), 1-17.

Bandura, A. (1977). Social learning theory. Englewood Cliffs, NJ: Prentice-Hall.

Becker, F. & French, L. (2004). Making the links: Child abuse, animal cruelty, and domestic violence. *Child Abuse Review, 13,* 399-414.

Beetz, A.M. (2009). Empathy as an indicator of emotional development. In A. Linzey (Ed.), *The link between animal abuse and human violence* (pp. 63-74). Portland, OR: Sussex Academic Press.

Black, M.C., Basile, K.C., Breiding, M.J., Smith, S.G., Walters, M.L., Merrick, M.T., Chen, J., & Stevens, M.R. (2011). *The National Intimate Partner and Sexual Violence Survey (NISVS): 2010 Summary Report.* Atlanta, G.A.: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. Retrieved from http://www.cdc.gov/ViolencePrevention/pdf/NISVS_Report2010-a.pdf

Boat, B.W. (1999). Abuse of children and abuse of animals: Using the links to inform child assessment and protection. In F.R. Ascione (Ed.), *Child abuse, domestic violence, and animal abuse* (pp. 83-100). West Lafayette, IN: Purdue University Press.

Boat, B. W., Loar, L., & Phillips, A. (2008). Collaborating to assess, intervene, and prosecute animal abuse: A continuum of protection for children and animals. In F.R. Ascione (Ed.), *International handbook of animal abuse and cruelty: Theory, research, and application* (pp. 393-422). West Lafayette, IN: Purdue University Press.

Boyle, D. J., O'Leary, K. D., Rosenbaum, A., & Hassett-Walker, C. (2008). Differentiating between generally and partner-only violent subgroups: Lifetime antisocial behavior, family of origin violence, and impulsivity. *Journal of Family Violence*, *23*(1), 47-55.

Bushman, B. J., Baumeister, R. F., & Phillips, C. M. (2001). Do people aggress to improve their mood? Catharsis beliefs, affect regulation opportunity, and aggressive responding. *Journal of personality and social psychology*, *81*(1), 17-32.

Carlisle-Frank, P., Frank, J. M., & Nielsen, L. (2004). Selective battering of the family pet. *Anthrozoos, 17,* 26-41.

Carney, M. M., & Buttell, F. P. (2004). A multidimensional evaluation of a treatment program for female batterers: A pilot study. *Research on Social Work Practice, 14,* 249-258. doi: 10.1177/1049731503262223

Centers for Disease Control and Prevention. (2010). *Intimate partner violence: Definitions.* Retrieved from http://www.cdc.gov/violenceprevention/intimatepartnerviolence/definitions.html

Centers for Disease Control and Prevention. (2012). *Intimate partner violence: Consequences.* Retrieved from http://www.cdc.gov/violenceprevention/intimatepartnerviolence/consequences.html

Coker, A. L., Smith, P. H., McKeown, R. E., & King, M. J. (2000). Frequency and correlates of intimate partner violence by type: Physical, sexual, and psychological battering. *American Journal of Public Health, 90,* 553-559.

Cooper, A. & Smith, E.L. (2011). Homicide trends in the United States, 1980-2008. Washington, D.C.: U.S. Department of Justice. Retrieved from http://www.bjs.gov/content/pub/pdf/htus8008.pdf

Courtney, M. G.R. (2013). Determining the number of factors to retain in EFA: Using the SPSS R-Menu v2. 0 to make more judicious estimations. *Practical Assessment, Research & Evaluation, 18(8),*1-14 .

Dadds, M. R., Whiting, C., Bunn, P., Fraser, J. A., Charlson, J. H., & Pirola-Merlo, A. (2004). Measurement of cruelty in children: The cruelty to animals inventory. *Journal of Abnormal Child Psychology, 32*(3), 321-334.

DeGue, S. & DiLillo, D. (2009). Is animal cruelty a "red flag" for family violence?: Investigating co-occurring violence toward children, partners, and pets. *Journal of Interpersonal Violence, 24*, 1036-1056.

Dowd, L. S., Leisring, P. A., & Rosenbaum, A. (2005). Partner aggressive women: Characteristics and treatment attrition. *Violence and Victims, 20,* 219-233.

Eagly, A. H., & Steffen, V. J. (1986). Gender and aggressive behavior: A meta-analytic review of the social psychological literature. *Psychological Bulletin, 100*(3), 309-330.

Edleson, J.L. (1999). The overlap between child maltreatment and woman battering. *Violence against Women*, 5, 134-154.

Edwards, D. W., Scott, C. L., Yarvis, R. M., Paizis, C. L., & Panizzon, M.S. (2003).

Impulsiveness, impulsive aggression, personality disorder, and spousal violence. *Violence and Victims, 18*, 3-14.

Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological methods, 4*(3), 272-299.

Faver, C. A., & Strand, E. (2003). To leave or to stay?: Battered women's concern for vulnerable pets. *Journal of Interpersonal Violence, 18*, 1367-1377.

Febres, J., Brasfield, H., Shorey, R.C., Elmquist, J., Ninnemann, A., Schonbrun, Y.C., Temple, J.R., Recupero, P.R., & Stuart, G.L. (In press). Adulthood animal abuse among men arrested for domestic violence. *Violence Against Women.*

Febres, J., Brasfield, H., Shorey, R.C., & Stuart, G.L. (2011). Interactions with Animals Scale. Unpublished measure.

Febres, J., Shorey, R.C., Brasfield, H., Zucosky, H.C., Ninnemann, A., Elmquist, J., Bucossi, M.M., Andersen, S.M., Schonbrun, Y.C., & Stuart, G.L. (2012). Adulthood animal abuse among women court-referred to batterer intervention programs. *Journal of Interpersonal Violence, 27*, 3115-3126.

Feder, L., & Wilson, D. B. (2005). A meta-analytic review of court-mandated batterer intervention programs: Can courts affect abusers' behavior? *Journal of Experimental Criminology, 1*, 239-262.

Feldstein, S. W. & Miller, W. R. (2007). Does subtle screening for substance abuse work? A review of the Substance Abuse Subtle Screening Inventory (SASSI). *Addiction, 102*(1), 41-50.

Felthous, A. R., & Kellert, S. R. (1987). Psychosocial aspects of selecting animal species for

physical abuse. *Journal of Forensic Sciences, 32*, 1713-1723.

Field, A. (2009). *Discovering statistics using SPSS* (5th ed.). Thousand Oaks, CA: SAGE Publications Inc.

Flynn, C.P. (2009). Women-battering, pet abuse, and human-animal relationships. In A. Linzey (Ed.), *The link between animal abuse and human violence* (pp. 116-125). Portland, OR: Sussex Academic Press.

Flynn, C.P. (2011). Examining the links between animal abuse and human violence. *Crime, Law, and Social Change, 55*, 453-468.

Foshee, V. A., Bauman, K. E., Arriaga, X. B., Helms, R. W., Koch, G. G., & Linder, G. F. (1998). An evaluation of safe dates, an adolescent dating violence prevention program. *American Journal of Public Health, 88*(1), 45-50.

Friedmann, E., & Son, H. (2009). The human-companion bond: How humans benefit. *Veterinary Clinics of North America: Small Animal Practice, 39*, 293-326.

Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment, 26*, 41-54.

Gupta, M., & Beach, S. R. H. (2001). Aggression Toward Animals Scale. Unpublished scale.

Hanson, R. K., Cadsky, O., Harris, A., & Lalonde, C. (1997). Correlates of battering among 997 men: Family history, adjustment, and attitudinal differences. *Violence and Victims, 12* (3), 191-208. Retrieved from http://www.springerpub.com/product/08866708

Henderson, B. B., Hensley, C., & Tallichet, S. E. (2011). Childhood animal cruelty methods and their link to adult interpersonal violence. *Journal of Interpersonal Violence, 26*(11),

2211-2227.

Herzog, H. A. (2007). Gender differences in human-animal interactions: A review. *Anthrozoos: A Multidisciplinary Journal of the Interactions of People & Animals*, *20*(1), 7-21.

Hyler, S. E., Rieder, R. O., Williams, J. B. W., Spitzer, R. L., Hendler, J., & Lyons, M. (1988). The Personality Diagnostic Questionnaire: Development and preliminary results. *Journal of Personality Disorders, 2,* 229-237. Retrieved from http://www.guilford.com/cgi-bin/cartscript.cgi?page=pr/jnpd.htm&dir=periodicals/per_psych&cart_id=

Hyler, S. E., Rieder, R. O., Williams, J. B. W., Spitzer, R. L., Lyons, M., & Hendler, J. (1989). A comparison of clinical and self-report diagnoses of DSM-III personality disorders in 552 patients. *Comprehensive Psychiatry, 30,* 170-178.

Jakupcak, M., Tull, M. T., & Roemer, L. (2005). Masculinity, shame, and fear of emotions as predictors of men's expressions of anger and hostility. *Psychology of Men & Masculinity*, *6*(4), 275-284.

Jaycox, L. H., McCaffrey, D. F., Weidmer-Ocampo, B., Marshall, G. N., Collins, R. L., Hickman, L. J., & Quigley, D. D. (2006). Curbing teen dating violence: Evidence from a school prevention program. RB-9194-CDC. *RAND Corporation*.

Johnson, M. P. (2006). Conflict and control: Gender symmetry and asymmetry in domestic violence. *Violence against Women*, 12, 1003-1018.

Kellert, S. R., & Felthous, A. R. (1985). Childhood cruelty toward animals among criminals and noncriminals. *Human Relations, 38,* 1113-1129.

Krienert, J. L., Walsh, J. A., Matthews, K., & McConkey, K. (2012). Examining the nexus between domestic violence and animal abuse in a national sample of service providers. *Violence and Victims*, *27*(2), 280-295.

Letendre, J. (2007). “Sugar and spice but not always nice”: Gender socialization and its impact on development and maintenance of aggression in adolescent girls. *Child and Adolescent Social Work Journal*, *24*(4), 353-368.

Lilienfeld, S. O. (2011). Distinguishing scientific from pseudoscientific psychotherapies: Evaluating the role of theoretical plausibility, with a little help from Reverend Bayes. *Clinical Psychology: Science and Practice*, *18*(2), 105-112.

Long, D.D., Long, J.H., & Kulkarni, S.J. (2007). Interpersonal violence and animals: Mandated cross-sector reporting. *Journal of Sociology & Social Welfare, 34,* 147-164.

Loring, M. T., & Bolden-Hines, T. A. (2004). Pet abuse by batterers as a means of coercing battered women into committing illegal behavior. *Journal of Emotional Abuse, 4*, 27-37.

Maiuro, R.D., Eberle, J.A., Rastaman, P., & Snowflake, B. (2008). Pet abuse: Relationships to psychobiology, attachment processes, and domestic violence. In F.R. Ascione (Ed.), *International handbook of animal abuse and cruelty: Theory, research, and application* (pp. 133-153). West Lafayette, IN: Purdue University Press.

McNicholas, J., Gilbey, A., Rennie, A., Ahmedzai, S., Dono, J. A., & Ormerod, E. (2005). Pet ownership and human health: a brief review of evidence and issues. *BMJ*, *331*(7527), 1252-1254.

Merz-Perez, L., Heide, K. M., & Silverman, I. J. (2001). Childhood cruelty to animals and subsequent violence against humans. *International Journal of Offender Therapy and Comparative Criminology*, *45*(5), 556-573.

Miller, K. S., & Knutson, J. F. (1997). Reports of severe physical punishment and exposure to animal cruelty by inmates convicted of felonies and by university students. *Child Abuse & Neglect*, *21*(1), 59-82.

Raina, P., Waltner-Toews, D., Bonnett, B., Woodward, C., & Abernathy, T. (1999). Influence of companion animals on the physical and psychological health of older people: An analysis of a one-year longitudinal study. *Journal of the American Geriatrics Society, 47*, 323-329.

Sable, P. (1995). Pets, attachment, and well-being across the life cycle. *Social Work, 40*(3), 334-341.

Schvaneveldt, P. L., Young, M. H., Schvaneveldt, J. D., & Kivett, V. R. (2001). Interaction of people and pets in the family setting: A life course perspective.*Journal of Teaching in Marriage & Family*, *1*(2), 34-51.

Shorey, R.C., Cornelius, T.L., & Bell, K.M. (2008). A critical review of theoretical frameworks for dating violence: Comparing the dating and marital fields. *Aggression and Violent Behavior, 13,* 185-194.

Shorey, R. C., Brasfield, H., Febres, J., & Stuart, G. L. (2011). An examination of the association between difficulties with emotion regulation and dating violence perpetration. *Journal of Aggression, Maltreatment, & Trauma, 20*(8), 870-885.

Simmons, C. A., & Lehmann, P. (2007). Exploring the link between pet abuse and controlling behaviors in violent relationships. *Journal of Interpersonal Violence, 22,* 1211-1222.

Stets, J. E., & Pirog-Good, M. A. (1989). Sexual aggression and control in dating relationships. *Journal of Applied Social Psychology, 19*(16), 1392-1412.

Stuart, G. L., Moore, T. M., Hellmuth, J. C., Ramsey, S. E., & Kahler, C. W. (2006). Reasons for intimate partner violence perpetration among arrested women. *Violence Against Women, 12*(7), 609-621.

Stuart, G. L., Moore, T. M., Ramsey, S. E., & Kahler, C. W. (2003). Relationship aggression and

substance use among women court-referred to domestic violence intervention programs. *Addictive Behaviors*, *28*(9), 1603-1610.

Stuart, G. L., Moore, T. M., Ramsey, S. E., & Kahler, C. W. (2004). Hazardous drinking and relationship violence perpetration and victimization in women arrested for domestic violence. *Journal of Studies on Alcohol, 65*, 46-53.

Stuart, G. L., Temple, J. R., & Moore, T. M. (2007). Improving batterer intervention programs through theory-based research. *Journal of the American Medical Association, 298,* 560-562. doi: 10.1001/jama.298.5.560

Straus, M. A. (1979). Measuring intrafamily conflict and violence: The conflict tactics (CT) scales. *Journal of Marriage and the Family,* 75-88.

Straus, M. A., Hamby, S. L., Boney-McCoy, S. & Sugarman, D. B. (1996). The revised Conflict Tactics Scales (CTS2): Development and preliminary psychometric data. *Journal of Family Issues, 17,* 283-316.

Straus, M. A., Hamby, S. L. & Warren, W. L. (2003). *The Conflict Tactics Scales Handbook*. Los Angeles, CA: Western Psychological Services.

Swan, S. C., Gambone, L. J., Caldwell, J. E., Sullivan, T. P., & Snow, D. L. (2008). A review of research on women's use of violence with male intimate partners. *Violence and Victims, 23*, 301-314.

Tager, D., Good, G. E., & Brammer, S. (2010). "Walking over'em": An exploration of relations between emotion dysregulation, masculine norms, and intimate partner abuse in a clinical sample of men. *Psychology of Men & Masculinity*, *11*(3), 233-239.

The Humane Society of the United States. (2009). *Safe Havens for Animals.* Retrieved from http://www.humanesociety.org/issues/abuse_neglect/tips/safe_havens.html

Thompson, K. L., & Gullone, E. (2006). An investigation into the association between the witnessing of animal abuse and adolescents' behavior toward animals. *Society and Animals*, *14*(3), 221.

Tiplady, C. M., Walsh, D. B., & Phillips, C. J. C. (2012). Intimate partner violence and companion animal welfare. *Australian Veterinary Journal*, *90*(1-2), 48-53.

Tjaden, P., & Thoennes, N. (2000). Extent, nature, and consequences of intimate partner violence: Findings from the National Violence Against Women Survey. Washington, D.C.: U.S. Department of Justice. Retrieved from http://www.ncjrs.gov/pdffiles1/nij/181867.pdf

Trull, T. J. (1993). Temporal stability and validity of two personality disorder inventories. *Psychological Assessment*, *1*, 11–18.

Unti, B. (2008). Cruelty indivisible: Historical perspectives on the link between cruelty to animals and interpersonal violence. In F.R. Ascione (Ed.), *International handbook of animal abuse and cruelty: Theory, research, and application* (pp. 133-153). West Lafayette, IN: Purdue University Press.

Vaughn, M. G., Fu, Q., DeLisi, M., Beaver, K. M., Perron, B. E., Terrell, K., & Howard, M. O. (2009). Correlates of cruelty to animals in the United States: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *Journal of Psychiatric Research, 43*, 1213-1218. doi:10.1016/j.jpsychires.2009.04.011

Volant, A. M., Johnson, J. A., Gullone, E., & Coleman, G. J. (2008). The relationship between domestic violence and animal abuse: An Australian study. *Journal of Interpersonal Violence, 23*, 1277-1295.

Walton-Moss, B.J., Manganello, J., Frye, V., & Campbell, J.C. (2005). Risk factors for intimate partner violence and associated injury among urban women. *Journal of Community Health, 30*, 377-389.

Wolfe, D.A., Wekerle, C., Gough, R., Reitzel-Jaffe, D., Grasley, C., Pittman, A., Lefebvre, L., & Stumpf, J. (1996). The youth relationships manual: A group approach with adolescents for the prevention of woman abuse and the promotion of healthy relationships. Thousand Oaks, CA: Sage Publications USA.

World Health Organization. (2013). Global and regional estimates of violence against women: Prevalence and health effects of intimate partner violence and non-partner sexual violence. Geneva, Switzerland: WHO Document Production Services. Retrieved from http://apps.who.int/iris/bitstream/10665/85239/1/9789241564625_eng.pdf

Appendix

Appendix A

Interactions with Animals Scale

INSTRUCTIONS: Using the scale provided, indicate the number of times you did each of these things **to an animal(s), since you were 18 years old.** Please keep in mind that ALL information will be kept strictly confidential.

Since the age of 18, how many times did you do each of these things **to an animal**?

		This never happened	1 Time	2 Times	3-5 Times	6-10 Times	11-20 Times	20+ Times
1.	Threatened, scared, intimidated, or bullied an animal							
2.	Refused to provide an animal with needed food, water, or shelter							
3.	Threw something at an animal that could have hurt it							
4.	Threw an animal or dropped an animal from a height							
5.	Poisoned, drowned, or blew up an animal							
6.	Entered an animal into a fight with another animal							
7.	Strangled or smothered an animal							
8.	Electrocuted, burned, or poured chemicals on an animal							
9.	Cut, stabbed, or shot an animal (not for hunting/fishing)							
10.	Beat, hit, kicked, or stomped on an animal							
11.	Cut off parts of an animal's body (not during hunting/fishing)							
12.	Performed a sexual act on an animal							
13.	Broke an animal's bones or gave an animal a visible injury							
14.	Tortured an animal							
15.	Killed an animal							

16. Indicate which type(s) of animal(s) you did these things to **since the age of 18**. (check all that apply)

❑ I never did any of the things listed above

❑Pet ❑Stray Animal ❑Farm Animal ❑Wild Animal

17. What are some of the **main reasons** you did these things? Check all that applied.

☐ I never did any of the things listed above
☐ Accident
☐ To control the animal(s)
☐ To get revenge on the animal(s) for something it did to you
☐ I did not like the type of animal (species or breed) it was
☐ I enjoy being aggressive
☐ To practice your fighting skills or to impress others with your fighting skills
☐ To surprise or shock other people
☐ To upset someone else or to control someone else by harming their animal
☐ To release anger or frustration
☐ No specific reason, or for fun

18. Approximately how old were you when you **most recently** did any of these things to an animal?_____

19 a. Approximately how old were you when you **first** did any of these things to an animal?

_____

b. **If you were younger than 15,** how many times did you do any of these behaviors?

❑Does not apply ❑1 Time ❑2 Times ❑3-5 Times
❑6-10 Times ❑11-20 Times ❑20+ Times

c. Indicate which type(s) of animal(s) you did this to **before the age of 15.** (check all that apply)

❑Does not apply ❑Pet ❑Stray Animal ❑Farm Animal
❑Wild Animal

Table 1

Prevalence and Frequency of Adulthood Animal Abuse

	Prevalence (*n*, %)	Frequency (*M*, *SD*)
Men (*N*=157)		
Any act	38, 24.2	2.13, 7.10
Physical	32, 20.4	1.54, 6.45
Threats	20, 12.7	0.41, 1.58
Neglect	3, 1.9	0.18, 2.00
Men who endorsed AAA (*n*= 38)		
Any act	38, 100.0	8.79, 12.35
Physical	32, 84.2	6.34, 11.99
Threats	20, 52.6	1.71, 2.87
Neglect	3, 7.9	0.74, 4.06
Women (*N*=41)		
Any act	4, 9.8	0.17, 0.59
Physical	4, 7.3	0.12, 0.51
Threats	1, 2.4	0.05, 0.31
Neglect	0, 0.0	0.00, 0.00
Women who endorsed AAA (*n*= 4)		
Any act	4, 100.0	1.75, 0.96
Physical	3, 75.0	1.25, 1.26
Threats	1, 25.0	0.50, 1.00
Neglect	0, 0.0	0.00, 0.00

Table 2

Correlations, Means, and Standard Deviations for Study Variables for the Full Sample

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1.	Adulthood Animal Abuse Total Score	—											
2.	Psychological Aggression	-.01	—										
3.	Physical Assault	.04	.70**	—									
4.	Antisocial Personality Characteristics	.21**	.15*	.21**	—								
5.	General Violence	.18*	.22**	.27**	.53**	—							
6.	DERS NER	.01	.29**	.25**	.03	-.01	—						
7.	DERS GDB	.10	.30**	.34**	.15*	.15*	.60**	—					
8.	DERS ICD	.17*	.35**	.41**	.32**	.14	.59**	.70**	—				
9.	DERS LEA	.07	.12	.15*	.13	-.04	.11	.15*	.27**	—			

Table 2. Continued.

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
10.	DERS LAERS	.12	.32**	.31**	.16*	.11	.73**	.67**	.72**	.20*	—		
11.	DERS LEC	.10	.33**	.36**	.18*	.06	.45**	.44**	.54**	.61**	.48**	—	
12.	DERS Total	.12	.37**	.39**	.20**	.13	.76**	.77**	.83**	.53**	.85**	.75**	—
	M	1.72	36.90	11.17	6.72	17.08	12.05	12.83	13.22	15.77	16.78	10.26	80.11
	SD	6.37	40.18	26.05	5.18	34.34	5.59	5.07	5.20	5.69	6.54	3.92	23.40

Note. *p <.05; **p <.01
DERS= Difficulties in Emotion Regulation Scale; NER = Nonacceptance of Emotional Responses; GDB = Goal-Directed Behavior; ICD = Impulse Control Difficulties; LEA = Lack of Emotional Awareness; LAERS = Limited Access to Emotion Regulation Strategies; LEC = Lack of Emotional Control.

Table 3

Correlations, Means, and Standard Deviations for Study Variables for the Men

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1.	Adulthood Animal Abuse Total Score	—											
2.	Psychological Aggression	.03	—										
3.	Physical Assault	.09	.68**	—									
4.	Antisocial Personality Characteristics	.18*	.10	.25**	—								
5.	General Violence	.18*	.20*	.27**	.52**	—							
6.	DERS NER	.03	.29**	.23**	.07	.00	—						
7.	DERS GDB	.16*	.26**	.26**	.22**	.18*	.61**	—					
8.	DERS ICD	.22**	.25**	.29**	.38**	.13	.61**	.68**	—				
9.	DERS LEA	.06	.10	.10	.13	-.09	.10	.12	.27**	—			

Table 3. Continued.

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
10.	DERS LAERS	.16*	.30**	.25**	.19*	.11	.74**	.67**	.72**	.20*	—		
11.	DERS LEC	.12	.29**	.30**	.19*	.04	.47**	.46**	.54**	.61**	.48**	—	
12.	DERS Total	.15	.33**	.32**	.25**	.10	.78**	.77**	.83**	.53**	.85**	.75**	—
	M	2.13	32.98	8.73	7.44	19.35	11.79	12.17	12.83	15.66	16.32	10.06	78.27
	SD	7.10	36.79	18.32	5.18	37.30	5.61	4.90	5.07	5.74	6.47	3.92	23.27

Note. *p <.05; **p <.01
DERS= Difficulties in Emotion Regulation Scale; NER = Nonacceptance of Emotional Responses; GDB = Goal-Directed Behavior; ICD = Impulse Control Difficulties; LEA = Lack of Emotional Awareness; LAERS = Limited Access to Emotion Regulation Strategies; LEC = Lack of Emotional Control.

Table 4

Correlations, Means, and Standard Deviations for Study Variables for the Women

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1.	Adulthood Animal Abuse Total Score	—											
2.	Psychological Aggression	-.06	—										
3.	Physical Assault	.04	.74**	—									
4.	Antisocial Personality Characteristics	.11	.63**	.44**	—								
5.	General Violence	-.11	.50**	.45**	.48**	—							
6.	DERS NER	-.02	.27	.29	.05	.04	—						
7.	DERS GDB	.04	.34*	.47**	.23	.32	.55**	—					
8.	DERS ICD	.05	.59**	.73**	.36*	.31	.49**	.74**	—				
9.	DERS LEA	.25	.18	.30	.17	.22	.13	.22	.31	—			

Table 4. Continued.

		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
10.	DERS LAERS	.00	.32	.44**	.27	.30	.70**	.65**	.67**	.37*	—		
11.	DERS LEC	.16	.45**	.50**	.30	.27	.34*	.30	.57**	.66**	.59**	—	
12.	DERS Total	.13	.46**	.58**	.32	.45**	.65**	.75**	.80**	.64**	.88**	.77**	—
	M	0.17	52.00	20.44	3.92	8.19	13.11	14.95	14.82	16.18	18.62	11.08	87.31
	SD	0.59	48.85	43.74	4.16	16.20	5.45	5.20	5.49	5.56	6.60	3.88	22.79

Note. **p* <.05; ***p* <.01
DERS= Difficulties in Emotion Regulation Scale; NER = Nonacceptance of Emotional Responses; GDB = Goal-Directed Behavior; ICD = Impulse Control Difficulties; LEA = Lack of Emotional Awareness; LAERS = Limited Access to Emotion Regulation Strategies; LEC = Lack of Emotional Control.

Vita

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