

EXPOSURE TO DOMESTIC VIOLENCE AND
ANIMAL CRUELTY IN CHILDREN

BY

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A Thesis
Submitted to the Faculty of Graduate Studies
In Partial Fulfillment of the Requirements for the Degree of

MASTER OF SCIENCE

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University of Manitoba
Winnipeg, Manitoba

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Acknowledgements

I would like to gratefully acknowledge and thank the examining committee, Dr. Jason Brown, Dr. Joan Durrant, and Dr. Grant Reid for all of their guidance and support in this endeavor. I would like to thank my fellow graduate students who have graciously provided an ear to listen, an eye to critique, and a voice to encourage my efforts. Know that I will be there to support your academic labours as well. I would also like to acknowledge and thank my grandmother, Helen Koster, for her wise words and encouragement.

The research project from which this data set was utilized was supported by a grant from the Social Sciences and Humanities Research Council (SSHRC grant 410-96-0311).

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Abstract

The incidence of animal cruelty among children exposed to family violence has been inadequately documented in the research literature. The purpose of the present study was to examine whether children exposed to domestic violence were significantly more likely to be cruel to animals than children not exposed to violence. Seven key factors thought to mediate the risk for animal cruelty in the exposed sample were investigated as well. Four factors investigated the severity of maternal domestic violence exposure for children. The proportion of lifetime exposure to domestic violence for children was examined as a fifth variable. As well, two mediators examined the quality of the mother-child relationship. The present study was a secondary analysis of a community sample of 47 mothers with 2 children and a history of domestic violence, as well as a matched sample of 45 mothers with 2 children who did not report such a history. The results indicated that children exposed to domestic violence were significantly more likely to have displayed animal cruelty than children not exposed to violence. Children reported to be cruel to animals did not differ in age or gender from children who were not reported cruel to animals. However, children cruel to animals and exposed to domestic violence were significantly older than children cruel to animals who had not been exposed to violence. Within the sample of exposed children, children exposed to more severe verbal aggression and more frequent maternal use of passive-aggressive behaviours against a male domestic partner were less likely to be reported cruel to animals. The remaining variables were not significant predictors of animal cruelty. The meanings and implications of these findings were discussed and suggestions for future research were detailed.

CHAPTER ONE: INTRODUCTION

“Animal cruelty has long been overlooked as an indicator, monitor, and even precursor to the antisocial behaviours people inflict on each other, including child abuse and neglect, spouse beating, rape, and homicide” (Beck, 1981, p. 232).

However disturbing, it is not difficult to visualize a link between family violence and animal cruelty. A violent father who lashes out at his wife, his children, and the family pet is conceivable. Research also supports this contention. Ascione (1998) found that 75% of battered women stated their partners were abusive toward animals in the home. Furthermore, Weber (1999) found that animal abuse in a home increased parallel to the severity of violence in a domestic relationship. Research has also documented that animals are abused by at least one family member in 88% of homes exhibiting physical child abuse (DeViney, Dickert, & Lockwood, 1983). Although the link between family violence and animal cruelty appears logical and has been noted in the literature, few studies have examined the possible association between family violence and animal cruelty in children (Ascione, 1998; DeViney et al., 1983; Miller & Knutson, 1997; Rigdon & Tapia, 1977; Tapia, 1971).

The urgency to understand the role violence may play in promoting animal cruelty in children has been emphasized by reports that animal cruelty is a serious risk marker for mental health problems (American Psychiatric Association, 2000). The DSM-IVRT lists animal cruelty as one of several reliable criteria for the clinical diagnosis of conduct disorder (APA, 2000). In fact, harming animals is considered one of the earliest and most severe symptoms of the disorder. Furthermore, many studies have found an alarming connection between animal cruelty in children and interpersonal violence and crime in adolescence and adulthood (Felthous, 1979; Felthous & Yudowitz, 1977; Hellman &

Blackman, 1966; Merez-Perez, Heide, & Silverman, 2001; Slavkin, 2001; Verlinden, 1999). This is especially true when the type of animal abused, and the context within which the abuse takes place, falls outside culturally sanctioned parameters of animal treatment. For example, in the United States, cruelty against personally owned pets, such as cats and dogs, has been retrospectively linked to criminal violence for both male and female prison populations (Felthous & Yudowitz, 1977) as well as criminal behaviour in general (Ascione, Kaufman, & Brooks, 2000).

An indirect, but equally important finding in the literature is that many children who experience or are exposed to family violence do not become cruel to animals. It is unclear why some children emulate the violence they are exposed to and others do not. It is also unclear if mediating factors may influence the expression of animal cruelty in children who live in violent homes. Potential mediators have not yet been explored in the literature. The purpose of the present study was to, a) determine whether children exposed to domestic violence would be significantly more likely to be cruel to animals than children not exposed to violence, and b) explore the potential influence of factors that may mediate the association between exposure to domestic violence and animal cruelty in children.

In the following review, cultural perceptions of animal cruelty are discussed, and the retrospective research that associates animal cruelty in childhood with interpersonal violence and crime in adolescence and adulthood are reviewed. Next, the etiology of animal cruelty in childhood and the research concerning the adjustment of children exposed to domestic violence are discussed. Finally, research that specifically examines animal cruelty in children exposed to family violence is examined. Four hypotheses

framed within social learning and ecological systems theories are then presented

CHAPTER TWO: LITERATURE REVIEW

What is Animal Cruelty?

References to the willful injury or killing of animals by humans are value-laden (Arluke, 2002). Within the research literature the terms *animal abuse* and especially *animal cruelty*, have been used to gain greater precision in discussions about animal maltreatment. These terms make assumptions about why abusers were cruel to animals. For example such terms may suggest individuals took satisfaction from their acts or that the acts were condemned by society. Yet, there may be other reasons why individuals are cruel to animals.

Kellert and Felthous (1985) conducted interviews with adults who indicated they were cruel to animals and uncovered a number of motivations for the behaviour. These included: to control or discipline an animal, to retaliate against an animal, to retaliate against a person, to use an animal as an expression of aggression, to shock people, to experience sadism, and to displace hostility. As noted by Ascione (2001) some of these behaviours may be applicable to animal mistreatment perpetrated by juveniles. However, Ascione, Thompson, and Black (1997) interviewed youth about animal cruelty and suggested a number of developmentally-related motivations that differed from adults including: curiosity or exploration, peer pressure, mood enhancement, imitation (copying an adult's discipline of animals), identification with the child's abuser, rehearsal for interpersonal violence, posttraumatic play (reenacting violent episodes with animals), and attachment to an animal (killing the animal to prevent its torture by another).

Understanding the motivations for animal mistreatment among children and youth

may be an important key to understanding the origins of the behaviour. However, it is important to recognize that animal mistreatment, like other forms of violence, may vary in frequency, severity, and chronicity between individuals (Ascione, 2001), and definitions of animal cruelty vary widely both across and within regions, cultural, and subcultures. In the present study, the term 'animal cruelty' has been used as a shorthand label for the behaviour, while acknowledging the relativity of the term.

Cultural Perceptions of Animal Cruelty

As argued by Nash and Calonico (1996), all people's experiences are interpreted against a background of norms and rules that define what is normal and acceptable. Hence, whether an action toward an animal is deemed abusive or cruel is determined by the culture, subculture, and context in which the action takes place. Even within cultures, the context of the situation in which an animal is handled determines the label that action is given. The divide between what is an acceptable use of, and what is an abusive act toward an animal is frequently variable and ambiguous (Arluke & Lockwood, 1997).

To further complicate the discussion, animal cruelty is often a solitary and secretive behaviour (Felthous & Kellert, 1987). Ascione (1993), a leading researcher in the field of childhood animal cruelty has argued that defining cruelty to animals is even more difficult a task than defining cruelty to children because of the heavy influence of culture on the social determination of what constitutes animal cruelty. As a result, he has defined animal cruelty as "a socially unacceptable behaviour that intentionally causes unnecessary pain, suffering, or distress to and/or death of an animal" (p. 228).

Historical changes regarding the perception of animals are also an important factor to consider when discussing animal cruelty. As argued by Arluke and Lockwood (1997)

society's response to animal cruelty is reflected in the laws enforced to prevent it. During the first half of the nineteenth century the United States legal system classified animals as items of personal property, similar to that of a shovel or plow. In the second half of the century, lawmakers began to recognize an animal's potential for pain and suffering. Laws enacted against animal cruelty in the 1860's and 1870 are a foundation for such laws today (Favre & Tsang, 1993). Presently, animal cruelty is a crime in every state (Ascione, 2001). However, these laws, at least in the United States, have proved ineffective in actually punishing individuals who have been cruel to animals. Research by Arluke and Luke (1997) examined the nature of animal abuse cases brought before the Massachusetts criminal justice system between 1975 and 1996. The majority of cruelty cases involved dogs (58%) followed by cats (27%). Almost 90% of these animals were owned rather than wild. The vast majority of alleged abusers were male (97%). Almost half were found guilty of animal cruelty in court. However, less than one-tenth served time for the offence.

In Canada, the section of the criminal code that deals with animal cruelty has not been updated since 1892 (Canadian Corporate News, 2002). In Canada there has been a strong public demand for a greater enforcement of the animal cruelty laws currently in effect. As a result, amendments to the animal cruelty law have been put before Parliament. Presently, the amendment is termed Bill C-10B. This bill will provide stronger sentencing options and greater fines for those convicted of animal cruelty. However, to clarify the law so that misinterpretation can not provide a defense to guilty parties, the legislation has been amended three times since it was first introduced in 1999. At present, the amendment has not yet been passed. However, as noted by Mr. Paul Harold (2003), the Parliamentary Secretary to the Minister of Justice and the Attorney

General of Canada, "there is a tremendous degree of consensus now and a strong desire on the part of [many] organizations and hundreds of thousands of Canadians to see the bill become law."

It may be argued that these efforts reflect a growing intolerance for the mistreatment of animals amongst the general Canadian public. Although there are differences amongst various subcultures in Canada concerning what defines the ethical treatment of animals (e.g., opinions about hunting and trapping in rural versus urban communities), it may be argued that a majority of Canadians are exposed and shaped in some way by shifts in societal attitudes large enough to produce four years of proposed amendments to the criminal code. A norm change of this magnitude is widely disseminated by media outlets for example, from which few Canadian subcultures are sheltered. Such exposure imprints cultural expectations on individuals and places pressure on them to conform. Individual deviations from conformity, such as animal cruelty within a general population that frowns upon such behaviour, may be suggestive that the individual may suffer other problems. However, how well can this premise be applied to children who are cruel to animals in Canada? How serious is childhood animal cruelty and what does this behaviour suggest about the individual? The following section provides a general overview of the research that has been done in this area.¹

¹ Due to a paucity of research in this area, the studies discussed apply to adults and children from the United States, unless otherwise indicated.

How Serious is Animal Cruelty in Childhood?

"...the custom of tormenting and killing of beasts will, by degrees, harden [children's] minds even towards men; and they who delight in the suffering and destruction of inferior creatures, will not be apt to be very compassionate or benign to those of their own kind" (Locke, 1693, §116).

Childhood Animal Cruelty and Violence in Adulthood

Research in the area of childhood animal cruelty first began with retrospective reports of adults who confessed to committing such acts as children. Several studies established a strong retrospective correlation between animal cruelty in childhood and violent interpersonal behaviour in adulthood. Since termed the graduation hypothesis, numerous studies have given support to the idea that interpersonal violence in adulthood is related to animal cruelty in childhood. Hellman and Blackman (1966) reported that 52% of male prisoners charged with violent crimes recounted serious acts of animal cruelty in childhood. Only 17% of criminals charged with nonviolent crimes recounted such behaviour. More recently, Merz-Perez, Heide, and Silverman (2001) randomly selected 45 violent and 45 nonviolent male offenders incarcerated in a maximum-security prison. Results indicated that violent offenders were significantly more likely than nonviolent offenders to report committing acts of cruelty to wild, farm, stray, and especially pet animals. A study by Schriff, Louw, and Ascione (1999) suggests that these findings may be reliable cross-culturally. In a survey of 117 incarcerated men in South Africa, 63% of violent offenders indicated they had been cruel to animals as children as compared to 11% of nonviolent offenders.

Felthous and Yudowitz (1977) found childhood animal cruelty was not restricted to male populations of violent offenders. A near equal prevalence of self-reported childhood animal cruelty was found in samples of male and female adult prisoners. It

should also be noted that within the female prison sample, animal cruelty was the only childhood behaviour that differentiated a group of women convicted for crimes of personal violence from a group of women convicted for nonviolent crimes.

It could be argued that a sample of criminals convicted for violent crimes may not be representative of all violent individuals. Not all violent acts are caught and punished by law enforcement officials. There may be differences between those who get caught, and those who do not. Similarly, a nonaggressive control group based on charges laid may contain subjects who also committed unreported aggressive crimes. Felthous (1979) avoided these methodological difficulties by assigning psychiatric patients in the United States to aggressive and nonaggressive groups based on a meticulous history of their aggressive behaviours. Nevertheless, he found the item "killing cats and dogs" statistically differentiated the aggressive from the nonaggressive group.

Animal cruelty in childhood has also been retrospectively linked to a tolerance for violence in non-clinical populations of adults. A retrospective study by Flynn (1999b) found that university students who reported committing acts of animal cruelty as children or adolescents were significantly more likely to approve acts of violence against children and dating or marital partners. However, within this body of research it is important to recognize that the validity of survey methods that rely on the self-reporting of sensitive and highly stigmatized behaviour are frequently criticized (Harrison, 1997). For example, it may be that adults who have committed violent crimes or report that they approve of violent behaviours are less inhibited about admitting acts of animal cruelty than adults who have committed non-violent crimes or do not admit they approve of violent behaviours.

To summarize, childhood animal cruelty is a characteristic found to be significantly more prevalent among criminally violent male and female adult populations, as well as aggressive adult male psychiatric patients, as compared to their nonviolent counterparts. These violent and aggressive behaviour patterns are at times demonstrated before adulthood. The following section examines the connection between animal cruelty and violence in childhood.

Childhood Animal Cruelty and Violence in Childhood

There have been 28 school shootings involving 1 female and 32 male student assailants in the United States and Canada between February 1996 and April 2003. These tragic events have been highly publicized by the media. All but three students were under the age of 18 at the time of their crime, and one shooter was six years of age. According to Verlinden (1999) these incidents may be harsh examples of the seriousness of animal cruelty in childhood. In her doctoral dissertation, Verlinden retrospectively examined the factors common in nine school shootings between 1996 and 1998 involving 13 male assailants across the United States. In all cases the assailants were at, or well under 18 years of age. Although background information was not available for all of the boys (some court records were sealed) there was a documented history of animal cruelty for at least seven of the perpetrators for which information was available.

As reported by Verlinden (1999) both gunmen in the Littleton, Colorado high school shootings, aged 17 and 18, engaged in repeated acts of animal abuse, as reported by their fellow classmates. In Pearl, Mississippi, a 16 year-old-boy beat, burned, and tortured his dog, Sparkle, to death. Less than one year later he killed his mother and shot several classmates at his high school, killing two. Kip Kinkel was 15 when he killed his

parents, and shot 24 students at his school in 1998. He was known for acts of animal cruelty including decapitating cats and blowing up cows with dynamite. In Jonesboro, Arkansas, children aged 13 and 11 discharged the fire alarm in their school, hid in nearby trees, and then shot and killed two students and one teacher as they fled the building. Friends of the 11-year-old boy reported he frequently boasted of shooting dogs in his neighbourhood for fun.

While these reports are distressing, they are important to discuss because authority figures do not always take childhood animal cruelty seriously (Boat, 1995). Verlinden (1999) concluded that animal cruelty should be included in models of risk assessment for children. Her research suggests it is important to take action to help children who are cruel to animals as soon as the behaviour is discovered, with the underlying assumption being that earlier detection of predispositions for violence will give the best opportunity for meaningful intervention (Arluke & Lockwood, 1997). As noted by Flynn (2001) repeated, uninterrupted acts of animal cruelty without repercussion are likely to distort or inhibit empathy, and make it more likely that children will commit acts of interpersonal violence. It is also important to gain a better understanding of the potential factors influencing animal cruelty in children. Unfortunately, these factors are not well understood. In the following section, what is known about the etiology of animal cruelty in childhood is discussed.

The Etiology of Animal Cruelty

Theorists have suggested that animal cruelty in children may have underlying physiological and biochemical underpinnings. Although research by Martin (2002) underlined the damaging effect of child abuse on the neurobiology of the brain, research

has not directly linked specific brain damage to childhood animal cruelty. For example, research on brain damaged patients by Luiselli, Arons, Marchese, Potoczny, and Rossi (2000) found no relation between different types of brain injury and a number of criminal offences including animal cruelty.

Although more research is needed, Ascione, Kaufman, and Brooks (2000) found animal cruelty was more prevalent in samples of children with clinically significant mental disorders. Looking at the norming data from the Child Behaviour Checklist (Achenbach & Edelbrock, 1981) they found 10% to 25% of children and adolescents seen at mental health clinics in 1981 displayed animal cruelty. Comparable rates for nonclinical children were under 5%. It was not until the revised third edition of the DSM-III-R (Diagnostic and Statistical Manual of the American Psychiatric Association, 1987) that *cruelty to animals* first appeared as a diagnostic criterion for the psychological syndrome conduct disorder.

The relatively delayed inclusion of animal cruelty in the DSM underscores the cultural relativity inherent within this measure. As acknowledged by Stearns (1999), the DSM is a western labeling system reflecting North American culture and values. It is well documented that in the United States there has been a growing intolerance for blatant acts of animal cruelty. It may be argued that this growing intolerance finally led to the defining of such behaviour as a risk factor for pathology by the DSM (1987). Yet, it is important to recognize that members of all societies naturally vary in their adherence to societal norms. As argued by Mezzich et al., (1996) "we forget at our peril, that all diagnoses are constrained fictions" (p. xiii). Although the DSM is a tool widely used by the mental health community and is designed to be descriptive and atheoretical, it is not free from

bias. As a result, all disorder labels within the manual, including conduct disorder, must be interpreted with caution, with full recognition of the cultural norms that produced the work, and resulting biases inherent in those diagnoses. Moreover, the DSM has been criticized by Good (1996) for its lack of attention to differing cultural and social factors as they relate to mental health. As argued by Good, the DSM has failed to match a commitment to furthering knowledge on the neurobiology of mental illness with an equal commitment to recognizing and understanding the social origins of psychopathology.

In the following section, conduct disorder and the significance of child animal cruelty in diagnosing this disorder is considered. This disorder is discussed bearing in mind the North American climate that has created it, and the resultant inherent bias it carries.

Conduct Disorder

As stated by the APA (2000) childhood-onset conduct disorder “is one of the most frequently diagnosed conditions in outpatient and inpatient mental health facilities for children.” (p. 97). Onset of the disorder typically occurs during the period of middle childhood to middle adolescence (onset is rare after age 16). The essential feature of the disorder is a repetitive, persistent pattern of behaviour that violates the basic rights of others or major age-appropriate societal norms. These behaviours fall into four groups, a) aggressive conduct such as physical cruelty to people or animals, b) nonaggressive acts such as fire setting and other forms of property damage, c) deceitfulness or theft, and d) serious violations of rules such as running away from home or frequent school truancy (APA, 2000).

Childhood-onset conduct disorder is defined by the onset of at least one criterion

characteristic of the disorder prior to 10 years of age. As indicated by the APA (2000), individuals are usually male, frequently display physical aggression toward others, and have disturbed peer relationships. Individuals with childhood-onset conduct disorder are more likely to have persistent conduct disorder and are more likely to develop adult antisocial personality disorder than older individuals with the adolescent subtype of the disorder.

The adolescent subtype is defined by the absence of criteria characteristic of conduct disorder prior to the age of 10 years. These individuals are less likely to display aggressive behaviours and tend to have more normative peer relationships than individuals with the childhood-onset type of the disorder. They are also less likely to have persistent problems related to the disorder or develop adult antisocial personality disorder. The ratio of males to females in this subtype is also lower than it is in the childhood-onset type (APA, 2000).

Both subtypes occur in either a mild, moderate, or severe form. In the mild form, conduct problems are slight and cause relatively minor harm to others (e.g., lying, truancy). In the moderate form there is an increase in the number of problems related to the disorder and harm to others is intermediate (e.g., stealing, vandalism). In the severe form many conduct problems exist and harm to others is considerable (e.g., use of a weapon, breaking and entering, physical cruelty). The presence of the criterion animal cruelty automatically places children and adolescents in the severe category of the disorder (APA, 2000).

Associated features of either subtype include a lack of empathy, misperceptions of other's intentions (including animals) as hostile or threatening, callousness, a lack of guilt

or remorse, low self-esteem, low verbal IQ, poor academic achievement, temper outbursts, recklessness, the early onset of sexual behaviour, and the use of illegal substances. Suicide attempts and completed suicides also occur at higher than expected rate. Co-morbidity with other disorders is common, particularly attention-deficit/hyperactivity disorder.

As suggested by the APA (2000), conduct disorder is likely influenced by both biological and environmental factors. The risk for children is increased when there is a biological parent with a history of conduct disorder and/or attention-deficit/hyperactivity disorder. However, environmental factors such as parental neglect and rejection, inconsistent child rearing practices, lack of supervision, harsh discipline, physical or sexual abuse, exposure to violence, and ongoing familial addiction are also believed to play an important role in the development of both childhood and adolescent-onset conduct disorder (APA, 2000). The prevalence of the disorder has increased over the last few decades with rates ranging from 1% to 10% in the general population. Jacobson, Prescott, Neale, and Kendler (2000) examined the rise in conduct disorder and theorized the increase was due to harmful changes in environmental and familial factors rather than heritability factors.

Conduct Disorder & Animal Cruelty

Research suggests that animal cruelty is exhibited in 25% of children with conduct disorder (Arluke & Levin, 1999) and that this criterion is one of the earliest and most reliable symptoms of the disorder, with a median onset age of 6.5 years (Frick et. al., 1993). Luk, Staiger, Wong, and Mathai (1999) examined 141 children with persistent problems related to conduct disorder. Animal cruelty was present in 40 cases or 28% of

the children. They separated children into two groups, childhood animal cruelty present (CTA) and childhood animal cruelty not present (non-CTA). They reported that children in the CTA group (mean age 8.4 years) had much more severe conduct problems.

Although not significant, they also reported a slight trend that being cruel to animals was related to the male gender. As well, parents of these children were more likely separated with low incomes, and mothers had significantly higher stress levels (as indicated by the Parenting Stress Index) than children in the non-CTA group.

Meyer et al. (2000) found that family discord and maladaptation in general were significantly associated with an approximate two-fold increase in conduct disorder symptomatology in children. Past research has found that violence between parents is a significant predictor of conduct disorder (Jouriles, Bourg, & Farris, 1991; Hershorn & Rosenbaum, 1985; Murphy & O'Leary, 1989) and child maladjustment in general (Wolak & Finkelhor, 1998). In the following section, the literature investigating the link between exposure to domestic violence and general child maladjustment is reviewed followed by a discussion of research investigating the link between exposure to domestic violence and animal cruelty specifically.

Domestic Violence and Child Adjustment

Defining Domestic Violence

Many labels have been used to describe interadult domestic violence including woman abuse, spousal abuse, battering, and domestic assault (Graham-Bermann & Bresscoll, 2000; Jouriles et al., 2001). As noted by Jouriles et al. (2001) the choice of words can be controversial. Domestic violence was chosen in the present study because, as argued by Holden (2003) the term is more inclusive in that it commonly refers to a

pattern of assaultive and coercive behaviours between adults. Domestic violence was defined by women's self-reports and included all forms of abuse by a male partner (e.g., physical, psychological, financial, and sexual) during the child's lifetime. Abusive partners may have been a spouse or dating partner, co-habiting or living outside the home. According to this broad definition, some mothers within the sample did not experience physical aggression from an intimate partner. However, O'Leary and Maiuro (2001) have argued that a comprehensive definition of domestic violence should include all behaviours that exert force to injure, control, or abuse an intimate partner. Therefore, the broad definition used in the present study falls well within the province of harm. As well, Jouriles, McDonald, Norwood, and Ezell (2001) have noted that measuring domestic violence more broadly may improve clinicians' and researchers' ability to predict child behaviour problems as non-violent acts are also important to child adjustment. The present study has sought to determine the effects of such exploitations between marital partners on children in the home. The following discussion will review the literature pertaining to the effects of exposure to domestic violence on children.

Effects of Exposure to Domestic Violence on Children

A six year-old little girl, Janie, is staying with her mother in a shelter for battered women. Janie has just thrown away her drawing in the wastebasket. The shelter children's counselor retrieves the drawing, smooths it out and asks Janie to tell her about it. Janie says that it is a picture of a little girl drowning. The counselor suggests that they try to save the girl by rowing a boat out and throwing her a rope or a buoy. Janie tells the counselor that they can't save her, because no one can see her (Adapted from the slide series "Eyewitness: Children's Views of Violence Against their Mothers," St. Paul, MN: Whispers, in Rossman, 1998).

Children are often the unseen, unintended, and unassisted victims of domestic violence in the home (Holden & Ritchie, 1998). The prevalence of children's exposure to domestic violence in the United States has been estimated conservatively at 10% to 20%

each year, with as many as one-third exposed at some point throughout childhood or adolescence (Carlson, 2001). In 1998 alone, there were 8000 substantiated reports of children exposed to domestic violence in Canada (National Clearinghouse on Violence, 1998). Children may see the violence or become part of it, but most typically children are exposed to domestic violence by hearing the event and experiencing its aftermath (Edleson, 1999). As argued by Margolin (1998), violence between parents is often chronic and occurs in the home, an environment most children associate with safety and protection. Apfel and Simon (1996) suggested that memories of violence do not fade in children's minds but stay fresh, with very little threat needed to sustain children's feelings of insecurity and danger. Moreover, the individuals involved are central to children's lives and parenting is often disrupted as well. It is not surprising then, that exposure to domestic violence is often associated with childhood maladjustment

Research on children exposed to domestic violence began in earnest in the 1980's. As suggested by Graham-Bermann (1998), there have been two generations of research in this area. The first generation focused on domestic violence in the home and resulting child symptomatology. The second generation focused on variables that appeared to mediate child outcomes. Many researchers have concluded that children exposed to domestic violence were at much greater risk for developing behavioural (e.g., aggression), emotional (e.g., depression), and cognitive (e.g., learning in school) difficulties, as compared to children from nonviolent families (see Fantuzzo & Lindquist, 1989; Jaffe, Wolfe, & Wilson, 1990; Kolbo, Blakely, & Engleman, 1996; Margolin, 1998 and Mohr et al., 2003 for reviews). As stated by Holden and Ritchie (1998), "The corpus of empirical literature clearly establishes that children who live in maritally violent homes are at risk

for a wide variety of problems.” (p. 6). Pertinent to the current investigation are the consistent findings that children exposed to domestic violence are more aggressive and violent than children without violent parents (Adamson & Thompson, 1998; Fantuzzo et al., 1991; Herrera & McCloskey, 2001; Hughes, 1988; Hughes, Parkinson, & Vargo 1989; Mathias, Mertin, & Murray, 1995; O’Keefe, 1994). Indeed, Herrera and McCloskey (2001) found that exposure to domestic violence in children predicted referral to juvenile court.

However, it is important to acknowledge that problems exist within this research literature. Most importantly, there is an overdependence on certain data collection methods. Anonymous phone surveys and retrospective reports from adults exposed to domestic violence as children are heavily represented in the literature and may threaten the internal validity of the data collected. There are many confounding variables in such methods of data collection, resulting in data with serious shortcomings (Tomkins, et al., 1994). For example, retrospective reports rely on participants’ abilities to remember their childhood experiences accurately. As well, much research information comes from the retrospective reports of female shelter residents with children. These families represent only a subsample of domestic violence cases, and this limitation can pose a threat to the external validity of the data. In addition, assessing the psychological adjustment of children in a setting that is unique and strange will likely result in findings that are associated with the setting itself. For example, Fantuzzo et al. (1991) found that children in domestic violence shelters had significantly higher levels of psychological distress and different types of distress than matched children exposed to the same levels and types of domestic violence but living at home. These researchers noted that uprooting children

from home, separating them from a caregiver, combined with the mother's distress all likely contribute to the assessment results. More research involving families who do not reside in shelters and who are not experiencing a state of crisis is needed. In order to address some of the methodological shortcomings of the previous research, a sample of families with a history of violence was recruited from the community in the present study.

In the next section, the mechanics that link exposure to violence with children's maladjustment difficulties will be discussed. The social learning theory perspective is widely utilized to explain why children exposed to domestic violence are at greater risk to hurt others.

Social Learning Theory

"...the pleasure [children] take to put any thing in pain that is capable of it, I cannot persuade myself to be any other than a foreign and introduced disposition, a habit borrowed from custom and conversation. People teach children to strike, and laugh when they hurt, or see harm come to others; and they have the examples of most about them to confirm them in it" (Locke, 1693, §116).

Social learning theory is one perspective that helps to explain the association between exposure to domestic violence and child aggression. An important concept of this theory is modeling. Children learn social roles by imitating what they see and hear (Bandura, 1977). As argued by Wolak and Finkelhor (1998) stated, "When parents use violence to exert control, deal with problems, and to settle conflicts, children come to see aggression as a powerful and appropriate tool for interpersonal relations." (p. 83).

However, as argued by Bandura (1990), modeling is not simply a process of behavioural mimicry. Modeling may take many forms including, "new behaviour patterns, judgmental standards, cognitive competencies, and generative rules for creating new forms of behaviour" (p. 21). Learning from models is governed by four functions: (a)

attentional process, (b) retentional process, (c) behavioural production process, and (d) motivational process. The first function, attentional process, determines what is observed. The more attention children pay to an action, the more likely they are to extract information about it and retain it. Children are more attentive to acts that are attention arousing and involve significant others in their lives. As noted by Grych & Fincham (1990), parents can be powerful models because of their salience, affective relationship, and importance to their children. Parents who engage in aggressive acts during conflict provide their children with powerful but maladaptive models of behaviour during conflict.

After attention is paid to a particular behaviour, the second function involved in modeling is the retentional process. This process involves restructuring the information extracted from an observed act into rules and conceptions for memory representation (Bandura, 1990). In the third function, these rules and conceptions are translated into appropriate courses of action. As stated by Bandura (1990) "...behavioural enactments are adjusted until they match the internal conception of the activity." (p. 17). Children may engage in increasingly hostile interactions with others in an attempt to match their behaviour to their internal conception of the aggression they have been exposed to between their parents. For example, Graham-Bermann and Levendosky (1997) found that pre-school children exposed to domestic violence learned both power and control tactics, as well as physical aggression and displayed these behaviours in their interactions with peers outside their home.

The fourth function involved in modeling is that of motivational process. Children do not perform everything they learn. Performance of observationally learned behaviour is influenced by three key elements; direct, vicarious, and self-produced motivation. The

direct rewards or punishments for a certain behaviour influence whether a child repeats that behaviour. Similarly, a child is also influenced vicariously. The rewards or punishments others receive for their actions influence if and how a child will model those actions. Children who learn to be aggressive recognize quickly, either directly or vicariously, that aggressing against someone bigger than himself or herself will result in punishment. Likewise, aggressing against younger siblings may bring swift punishment from caregivers. Some children may find that aggressing against animals is more easily concealed and/or less likely to be punished than the same actions taken against humans. Hence, using animals, they may be able to model the behaviours they have witnessed and internalized and be less likely to suffer consequences for their actions.

Self-produced motivation also influences whether an action will be repeated in the same way it has been observed. Exposure to domestic violence may cause children to generate outlooks that justify their own use of violence (Jaffe, Wilson, & Wolfe, 1990). If children find a violent act self-satisfying, that act is more likely to be repeated. Children with well-developed empathy responses will not find cruel acts against animals satisfying. They will feel guilty and remorseful for their actions and be less likely to repeat them. However, children with low levels of empathy will be less likely to feel guilty about their actions. This point is very relevant for children exposed to domestic violence because as stated by Ascione (1999) "In a climate of pervasive terror, the roots of human empathy may wither and die, or fail to develop at all." (p. 51). Research has found that some children from violent homes have lower levels of empathy (Hinchey & Gavelek, 1982). As a result they may be able to relish feelings of power over the animals they hurt without suffering emotionally. Lower levels of empathy are characteristic of children who are

cruel to animals (Ascione, 1993), and empathy is one of several mechanisms proposed by researchers to explain how exposure to domestic violence may be linked to animal cruelty (Ascione, 1998). However, research has not yet linked family violence directly and strongly to animal cruelty in children. In the next section the literature that is available concerning how family violence and animal cruelty in children may be connected is reviewed.

Family Violence and Animal Cruelty

*"The maltreated child cries 'I hurt'.
Unheard or unheeded, that cry becomes prophecy"
(Vachss, 1993, p. 21).*

As suggested by Flynn (2001) the context of animal cruelty is invariably a social one. When confronted with individual violent behaviour, John Locke (1693) encouraged his readers to look for the experiences and influences that might produce such violence. Cruelty to animals can result because children's personal socialization experiences (e.g., with parents, peers) have included violence. Duncan and Miller (2002) argued that "the family context is a central context from which to assess childhood animal cruelty because it may signify an environment that is violent or abusive" (p. 367). However, only a handful of studies have actually examined the link between family violence and animal cruelty in children. These studies will now be reviewed.

In 1971 Tapia selected 18 boys from a psychiatric clinic for whom persistent animal cruelty was the principal complaint. This study concluded a chaotic home with aggressive role models was a common factor in their lives. A follow-up study five years later on 13 of the 18 boys (Rigdon & Tapia, 1977) found eight were still cruel to animals. The most effective treatment was removal from, or a significant change in a chaotic home

environment, occurring in all five cases for which animal cruelty ceased. The passage of time alone did not appear to abate the behavior.

DeViney et al. (1983) examined the care of pets in 53 homes in which child abuse had occurred. They found children committed one-third of the pet abuse in child abusing homes (mean age 8.2 years). The researchers concluded that abused children who were cruel to animals had learned disturbing lessons about power. They suggested the children inflicted abuse upon animals to satisfy their need to control and dominate others.

Research suggests this link may be related not only to parent-child physical abuse, but corporal punishment as well. Flynn (1999a) found a significant correlation, albeit a retrospective one, between corporal punishment and animal cruelty in children. He asked 267 undergraduates about their experiences of corporal punishment and animal cruelty as children. He found that males who reported perpetrating animal cruelty in childhood also reported receiving corporal punishment from their fathers more frequently before adolescence than other students who did not report animal cruelty. Although more research is needed in this area, the findings of Flynn (1999a) lend support to the suggestion by Straus & Kaufman (1994) who argue that higher levels of socially approved violence in society result in higher levels of illegitimate violence (for example, animal cruelty).

Domestic Violence & Animal Cruelty

While research has documented that domestic violence is a significant predictor of conduct disorder (Hershorn & Rosenbaum, 1985; Jouriles et al., 1991; Meyer et al., 2000; Murphy & O'Leary, 1989), and animal cruelty is one of the earliest and most reliable symptoms of conduct disorder (APA, 1994), only one pilot study to date has examined

exposure to domestic violence and animal cruelty in children. Ascione (1998) interviewed 22 women with children who sought shelter at a safe house for battered women. Women in the sample ranged in age from 20 to 51 years, and children from 8 months to 20 years. These mothers were interviewed by shelter staff about violence to pets in the home within a few days of their entry into the shelter, after the initial crisis circumstances had subsided. An early version of the Battered Partner Shelter Survey-Pet Maltreatment Assessment (Ascione, Weber, & Wood, 1997) was used in the interview. This survey included the question "Have any of your children ever hurt or killed one of your pets? If yes, describe." Thirty-two percent of women reported that one of their children (seven in total) had hurt or killed a pet or pets in the home.

While this study was important because it was the first to directly address the link between exposure to domestic violence and animal cruelty, it had many limitations. The sample size was very small. The results indicate the findings were tabulated, but not statistically analyzed. Therefore, it is unknown if these results were statistically significant. Furthermore, a comparison sample of non-battered women was not included in this study. The use of a shelter sample also has potential drawbacks, such as limited generalizability. Fantuzzo et al. (1991) suggested that situational factors such as fleeing to a shelter might affect children's adjustment. As noted by Kerig (2000) it is important to look at the effects of exposure to domestic violence on community samples of children. However, a sample of battered women not currently in shelters was not included in the study by Ascione. This research, while the first of its kind in this area, was not a reliable indicator of a connection between domestic violence and animal cruelty in children. An improved research design is needed to investigate whether there is a connection between

these two variables.

The present research examined the potential association suggested by Ascione by comparing the prevalence of animal cruelty in children exposed to domestic violence with children who have not been exposed to violence. It was hypothesized that children exposed to domestic violence would be significantly more likely to engage in animal cruelty on at least one occasion, as reported by their mothers, than children not exposed to violence. Community-based samples of children were employed in the present study, thereby avoiding the potential confounding variables involved in using a shelter sample. A moderately sized sample was used and results were statistically analyzed rather than tabulated, so that scientifically based conclusions could be drawn from the research.

Previous research on children cruel to animals has also failed to explore findings in the violence literature that suggest children exposed to domestic violence respond in behaviourally different ways based on their age and gender. The influence of these variables on animal cruelty in children will be explored in the present study. The following section provides a general overview of the research that has been done in this area.

The Influence of Age and Gender on Child Outcome

The research literature suggests age and gender may be pertinent factors that influence the way children exposed to domestic violence respond to their environment. Reynolds Wallace, Hill, Weist, and Nabors (2001) reported higher levels of symptoms indicative of post-traumatic stress disorder for boys exposed to domestic violence. As stated by Reynolds et al., "...it may be that boys exhibit stronger emotional reactions to domestic violence than girls do" (p. 1204). Research by Herrera and McCloskey (2001)

suggested that boys exposed to domestic violence were more likely than girls to be referred to juvenile court for property, felony, and violent offences. In fact, a number of researchers have reported that boys are more likely than girls to respond to interparental quarreling and violence with externalizing behaviours including aggression (Jaffe et al., 1986; Katz and Gottman, 1993; Reid & Crisafulli, 1990; Sternberg et al., 1995; Wolfe et al., 1988).

In terms of the research that specifically examines children who are cruel to animals, there has been one study to date. Luk et al., (1999) screened a group of 141 clinically-referred boys and girls for animal cruelty using the CBCL Parent Report (Achenbach, 1991). They reported "a slight trend that being cruel to animals is linked with the male gender" (p. 34), although percentages and statistics were not reported. In the present study it was predicted that more males than females would be cruel to animals as reported by their mothers based the suggestion in the domestic violence literature that boys react more emotionally to exposure, and the findings of Luk and his colleagues.

There is a scant research investigating the influence of a child's age on his or her reaction to domestic violence exposure. Research suggests that children age 6 and older exposed to domestic violence do experience trauma symptoms (Graham-Bermann & Levendosky, 1997). Research by Levendosky, Huth-Bocks, Semel, and Shapiro (2002) found that children age 3 to 5 exposed to domestic violence also experience symptoms of trauma. Hughes (1988) reported that 3 to 5 year old children who were abused and exposed to domestic violence exhibited more distress than 6 to 12 year old children with the same experiences (Hughes, 1988). Research has also not determined an average age for children who are cruel to animals. The APA (1994) reported that animal cruelty was

one of the earliest symptoms of conduct disorder, with a mean onset of 6.5 years.

Achenbach et al. (1991) surveyed 2,600 referred children and 2,600 non-referred children for the ACQ (Achenbach-Conners-Quay Behavior Checklist) and noted that cruelty to animals was significantly higher for younger children in both samples of children.

Achenbach (1991) also reported that younger children scored higher than older children on Item 15 (*cruel to animals*) on the CBCL in both referred and non-referred samples.

Based on these findings in the present study, it was predicted that the mean age of children reported cruel to animals would be younger than the mean age of children reported not cruel to animals.

Mediating Variables

Approximately two-thirds of the children in Ascione's (1998) study did not display animal cruelty suggesting other factors may be mediating the influence of domestic violence on children; however, potential mediating variables were not explored. Understanding which factors mediate the potential association between exposure to domestic violence and animal cruelty in children would greatly benefit prevention and treatment programs for children cruel to animals, as well as children exposed to domestic violence. As noted by Kerig (2000) there is a present need in the literature to go beyond showing there are negative effects of exposure to violence on children. She argues that in order to interrupt cycles of victimization and target interventions toward the explicit factors that influence maladjustment, research must determine the processes through which violence specifically affects children.

The link between exposure to domestic violence and child adjustment in general is complex. As argued by Graham-Bermann (1998) it is imperative to follow what happens

to both the children who are and who seemingly are not affected by their exposure to domestic violence. This imperative has led to a second generation of research, which seeks to identify and explore factors that appear to mediate child outcome. A number of important mediators have been identified as potential risk factors for children. These include the nature of the domestic violence, the age and sex of the child, whether the child also experienced abuse, and the quality of parent-child relationships (see Carlson, 2000; Edleson, 1999 for reviews).

In the present research examined seven potential mediating variables were examined. The term mediating rather than moderating variables was used to define these variables because it was predicted that domestic violence would influence animal cruelty in children independently of the variables examined. The variables, however, were predicted to influence this association and were therefore termed mediators. Conversely, if it were predicted that an association between domestic violence and animal cruelty in children would exist only if one or more of the proposed variables were present, then the term moderating variable would have been appropriate (Baron & Kenny, 1986), and therefore utilized.

The severity of domestic violence exposure for children was explored as a potential mediator of animal cruelty using four separate subscales on the CTS-R (Josephson & Check, 1990). The fifth variable explored was the proportion of lifetime exposure to domestic violence children had experienced. Social learning theory suggests that children who see adults act violently toward one another are at higher risk than others for engaging in interpersonal violence themselves. As argued by Miller (2001) children exposed to domestic violence view violence toward another as less serious and more

socially acceptable. This may be more likely for children exposed to more severe violence or exposed to violence for longer periods of time.

The quality of the mother-child relationship was explored using the total score on the PARQ (Rohners, 1991) as well as an individual subscale score. Like much of the early research on child and domestic violence, animal cruelty has been explained in the literature almost exclusively from an individualistic, psychopathological perspective. Social structural forces were often ignored. Although more research is needed, animal cruelty in children is more likely related to social variables such as parenting and socialization patterns in the home (Flynn, 2001). The quality of the mother-child relationship has been found to affect the outcome of children exposed to domestic violence (Emery, 1989). Therefore, the quality of the mother-child relationship was selected as a potential mediator of animal cruelty in children exposed to domestic violence. This potential mediator was examined using ecological systems theory, to be discussed in a later section. The following section will discuss each of these variables as potential mediators of animal cruelty for children exposed to domestic violence.

The Severity of Domestic Violence Exposure

Research has found, and social learning theory would suggest, that the impact of exposure to domestic violence on children depends on the severity, chronicity, and intensity of the violence (Kerig, 1996). A study by Jouriles et al. (1998) investigated the severity aspect of this dynamic. Based on crime statistics, they posited that the use of a knife or gun during a domestic dispute was one of the most dangerous and lethal acts of interparental violence. They examined three groups of children exposed to domestic violence, aged 8-12. One group reported they had observed the use of knives or guns

during a parental dispute. A second group reported they had not observed the use of knives or guns, but their mothers reported to the researchers it had occurred. A third group reported they had not observed the use of knives or guns during a parental dispute, and mothers also reported it had not occurred. The researchers found it was the occurrence of severe interparental violence in the home rather than a child's actual observation of it that marked increases in child behaviour problems (Jouriles et al., 1998). Research has documented that more severe forms of domestic violence have a different make-up and run a different course in the family than less severe forms of violence (Holtzworth-Munroe & Stuart, 1994). Growing up in a home where more severe forms of interparental violence occur places children at greater risk for behaviour problems. Jouriles et al., found children who were exposed to interparental violence using weapons as well as children living in homes in which it occurred displayed higher levels of behaviour problems as compared to children living in homes where weapons were not used. These group differences occurred even after accounting for differences in the frequency of domestic violence across samples. Jouriles et al. stated:

Our findings are consistent with the hypothesis that all forms of interparental violence are not uniformly related to child behavior problems and suggest that gradations in the severity of violence (e.g., interparental violence involving knives or guns vs. violence not involving these weapons) are important for a more complete understanding of the variability in children's adjustment within samples of children of battered women. p. 190.

The present research investigated the severity of female-to-male domestic violence as a possible mediator of animal cruelty in children. The severity dimension was

measured using the Revised Conflict Tactics Scale (Josephson & Check, 1990). Four subscales were investigated including the Physical Aggression subscale, Verbal Aggression subscale, the Passive-Aggressive/Indirect Tactics subscale, and the Avoidance subscale. It was hypothesized that children exposed to more severe domestic violence (as measured individually by the Physical Aggression subscale, Verbal Aggression subscale, and Passive-Aggressive/Indirect Tactics subscale) would be significantly more likely to engage in animal cruelty than children exposed to less severe domestic violence. It was also hypothesized that the children of mothers who avoided conflict with their domestic partners (as measured by the Avoidance subscale on the CTS-R) would be significantly less likely to engage in animal cruelty than the children of mothers who avoided conflict less.

The Proportion of Lifetime Exposure to Domestic Violence

Research also suggests that proportion of lifetime exposure to domestic violence is related to child outcome. Children naturally have an adaptive stress response to aversive situations, such as domestic violence. This response may become maladaptive when sustained over a long period of time due to repetitive threat. The sensitivity hypothesis suggests that rather than becoming habituated to a great deal of anger in the home, children exposed to high levels of domestic conflict over a lengthy period of time become hypersensitive to conflict and react with greater emotional and behavioural distress (Cummings & Davies, 1994). Domestic violence can be seen as the negative extreme on a continuum of domestic conflict (Cummings, 1998). Lengthy exposure to violent forms of domestic conflict may be especially stressful for children, causing them to react both emotionally and behaviourally to conflict and threat within their environment. As stated

by Cummings "...exposure to acts of domestic violence may threaten and undermine children's sense of predictability and warmth within the family, causing children to worry, be chronically aroused, and feel threatened and emotionally distressed." (p. 69).

Children exposed to domestic violence over a long period of time may begin to feel the world around them is threatening. They may be more likely to view siblings or pets as threats and lash out. As suggested by Cummings (1998) the sensitivity hypothesis suggests the proportion of lifetime exposure to domestic violence predicts patterns of externalizing behaviour problems in children. Therefore, it was hypothesized that children with longer lifetime exposure to domestic violence would be significantly more likely to engage in animal cruelty than children with shorter lifetime exposure.

Ecological Systems Theory

As mentioned previously, the link between domestic violence and child adjustment is complex. Although social learning theory accounts for the increase in aggression and violence often seen in children exposed to domestic violence, including the behaviour of animal cruelty, it does not explain why the majority of children exposed to domestic violence do not become more aggressive and violent. Ecological theory may help explain this outcome. This theory emphasizes that people are affected by their interconnections with three levels of their environment. These levels include (a) the macrosystem level, (b) the exosystem level, and (c) the microsystem level (Bronfenbrenner, 1979). In terms of children's exposure to violence, the macrosystem includes the child's larger community. For example, children are exposed to violence at the macrosystem level through violence portrayed in the media. The exosystem includes the neighbourhood in which a child resides. Children are exposed to violence at this level

through community violence and war (Garbarino, Dubrow, Kostelny, & Pardo, 1992). The microsystem includes all members of the child's immediate environment, in other words, all individuals residing in a child's home.

For children, and indeed all individuals, exposure to violence can occur in and across all three systems. As argued by Graham-Bermann (1998), under the best research conditions, the amount of exposure or risk contributed by each system, and the interaction effects across these systems would somehow be calculated or measured. However, Graham-Bermann also concedes the reality that this endeavor is too complex for most research undertakings. In the present study, exposure to violence within the microsystem was examined. However, the importance of the exosystem level and macrosystem level on child development are recognized.

As defined by Bronfenbrenner (1990):

A microsystem is a pattern of activities, roles, and interpersonal relations experienced by a developing individual in a given face-to-face setting with particular physical and material features, and containing other persons with distinctive characteristics of temperament, personality, and systems of belief. (p. 227).

Rutter, Champion, Quinton, Maughan, and Pickles (1995) have argued that Urie Bronfenbrenner's greatest message may be the necessity of considering development in its social context. That is, both individual and social factors influence growth. These factors also influence an individual's ability to cope in the face of adversity. Resilience is defined by Moen and Erickson (1995) as the capacity to cope with life's setbacks and challenges. Protective factors can be seen as the opposite of risk factors, promoting

resilience during times of adversity. Protective factors are divided into two sets, a) personal resources, and b) social resources (Bronfenbrenner, 1990).

Personal resources involve high levels of self-efficacy. Garbarino (2001) noted that most children are capable of coping with low levels of risk by using their own personal resources. However, once the risk accumulation moves beyond a low level there must be a major concentration of opportunity factors (i.e., social resources) to prevent the precipitation of harm to the developing child.

Strong social resources within children's micro and exosystems are essential resources for coping with stress. As argued by Apfel and Simon (1996) children exposed to trauma need help from adults to cope and recover. If adults decompensate, deteriorate, or panic in the face of trauma, children suffer. Garbarino (2001) argued that emotionally disabled adults are unlikely to offer children what they need to cope with trauma. Such adults often engage in denial, are emotionally inaccessible, and are prone to misread children's signals. On the other hand, adults who offer a model of calm, positive determination in the face of stress serve as a resource and support the child in coping with traumatic events (Apfel & Simon, 1996). An important adult in children's lives is their mother. The quality of the mother-child relationship is extremely important for all children, but especially for children coping with trauma, such as children exposed to domestic violence. The following section will discuss the importance of the mother-child relationship for children exposed to domestic violence.

The Quality of Mother-Child Relationship

Fauber and Long (1991) suggest that most contextual variables, such as exposure to domestic conflict, impact children by disrupting the family process, specifically,

parenting practices. As stated by Groves (2002) "Perhaps the greatest distinguishing feature of domestic violence for young children is that it psychologically robs them of both parents." (p. 59). In other words, exposure to domestic violence may impact child outcome by negatively affecting parental practices. As argued by Levendosky, Huth-Bocks, and Semel (1999) domestic violence may engender a hostile atmosphere that may lead to increased negativity in family relationships, including the mother-child relationship.

Research has indicated the quality of the mother-child relationship is extremely influential on the well-being of children (O'Keeffe, 1994), and that the quality of this relationship may suffer in domestically violent families. Holden and Ritchie (1998) assert that violence between partners is consuming and debilitating. In a 1991 study, they compared the parenting styles of battered and nonbattered women. They found women who experienced domestic violence were more inconsistent in their parenting behaviors, had more conflicts with their children, and attended less to their play than nonbattered women. Jaffe, Wolfe, and Wilson (1990) also found that maternal parenting in domestically violent homes can become disrupted and diminished. Mothers in violent relationships often feel guilty, depressed, suffer from low self-esteem, and fear for their own safety (Aguilar & Nightingale, 1994). This stress can leave mothers psychologically unavailable to their children, as well as impair their ability to parent effectively (Elbow, 1982). Maternal distress has been found to mediate the relationship between domestic violence and child behaviour problems in other work (Wolfe, Jaffe, Wilson, & Zak, 1985). Indeed, a mother's reaction to domestic violence may be one of the most important factors influencing children's behavioural outcomes (Jouriles, Murphy, & O'Leary,

1989).

Adult support is seen as an important protective factor for children exposed to domestic violence (Garnezy & Rutter, 1983). Mothers who comfort and support their children may act as buffers in the domestically violent home. In fact, Emery (1989) found secure parent-child attachments often buffered children from the effects of domestic violence. Furthermore, O'Keefe (1994) found a positive mother-child relationship was the best buffer to prevent children exposed to domestic violence, aged 7 to 13, from developing externalizing behaviour problems. A mother's reaction to the violence she has experienced may mediate the effect exposure to domestic violence will have on her children (Jouriles et al., 1989). Based on these findings, the present research investigated the quality of the mother-child relationship as a possible mediator of animal cruelty in children exposed to domestic violence. It was hypothesized that children exposed to domestic violence who reported more rejecting mother-child relationships would be significantly more likely to engage in animal cruelty than children exposed to domestic violence who reported less rejecting mother-child relationships. In addition, it was hypothesized that children exposed to domestic violence who reported more hostile/aggressive mother-child relationships would be significantly more likely to engage in animal cruelty than children exposed to domestic violence who reported less hostile/aggressive mother-child relationships.

Summary of Hypotheses

1. Children exposed to domestic violence would be significantly more likely to engage in animal cruelty, as reported by their mothers, than children not exposed to violence.
2. Across both samples, more males than females would be reported cruel to animals.
3. The mean age of children reported cruel to animals would be younger than the mean age of children who were not.
4. Children exposed to more severe maternal physical aggression against a male domestic partner would be significantly more likely to engage in animal cruelty than children exposed to less severe physical aggression.
5. Children exposed to more severe maternal verbal aggression against a male domestic partner would be significantly more likely to engage in animal cruelty than children exposed to less severe verbal aggression.
6. Children exposed to more frequent maternal use of passive-aggressive techniques with a domestic partner would be significantly more likely to engage in animal cruelty than children exposed to less frequent use of these techniques.
7. The children of mothers who avoided conflict with their domestic partners more frequently would be significantly less likely to engage in animal cruelty than the children of mothers who avoided conflict less frequently.
8. Children with longer lifetime exposure to domestic violence would be significantly more likely to engage in animal cruelty than children with shorter lifetime exposure.

9. Children exposed to domestic violence who report more rejecting mother-child relationships would be significantly more likely to engage in animal cruelty than children exposed to domestic violence who reported less rejecting mother-child relationships.

10. Children exposed to domestic violence who reported more hostile/aggressive mother-child relationships would be significantly more likely to engage in animal cruelty than children exposed to domestic violence who reported less hostile mother-child relationships.

CHAPTER 3: METHODS

A secondary data analysis was performed on data from the Winnipeg Area Behavioural Adjustment in Children Study (SSHRC grant 410-96-0311). Data were collected on 92 families between the years of 1996 and 2000 and all 92 families were included in the present analysis.

Participant Recruitment

Mothers with at least two school-aged children from Winnipeg, Manitoba were recruited from the community through announcements in local newspapers, home advertisements, and poster boards. Private clinicians, as well as clinical agencies with treatment programs for battered women were also informed by mail and asked to inform their clients about the study. All announcements asked women interested in the study to call the University of Manitoba. Callers were then screened for the criteria necessary for participation in the study. Families were required to have at least two children between the ages of 5 and 17 and a self-identified history of domestic violence to which both children were exposed. In addition, mothers had to be receiving, or have had received counseling concerning the domestic violence. In total 47 mothers and 94 children (56 boys, 38 girls) were recruited in this group, termed the clinical sample. A comparison group of mothers with at least two children between the ages of 5 and 17 and who did not self-identify as having a history of domestic violence were also selected from the callers. This sample was selected to match the clinical group as closely as possible on a number of demographic variables including socio-economic and marital status. In total 45 mothers and 90 children (40 boys, 50 girls) were recruited in this group, termed the non-clinical sample.

Demographic Information

Mothers

Mothers in the clinical and non-clinical groups were similar in age. The average age of mothers was 34.8 years in the clinical group ($SD = 5.32$, $Range = 26 - 47$ years) and 35.2 years in the non-clinical group ($SD = 5.38$, $Range = 25 - 49$ years). This difference was not statistically significant. It was found that 82.6% of mothers in the clinical sample and 64% of mothers in the non-clinical sample had annual incomes of \$30,000 dollars or less per year. As set by the Canadian Government, the low-income cut-off in Manitoba is \$28,273.00 per annum for single parents with two children (Canadian Council on Social Development, 2002). As indicated in Figure 1, many of the mothers in both the clinical and non-clinical samples were living at or below the poverty line. These groups were not significantly different in terms of income.

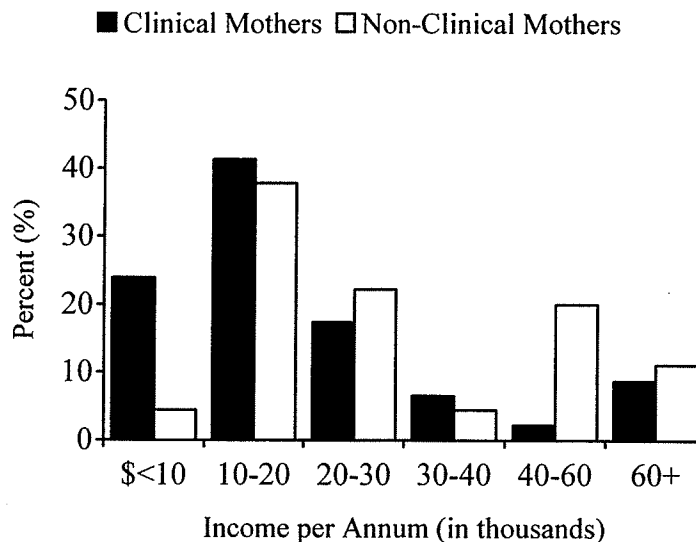


Figure 1. Income distributions of mothers in the clinical and non-clinical group.

In terms of marital status, Figure 2 shows the distribution of mothers in the clinical and non-clinical groups across several marital categories. When marital groups were collapsed into two categories, a) married or living common-law and, b) not married (i.e., separated, divorced, etc.), there was no significant difference between the two groups.

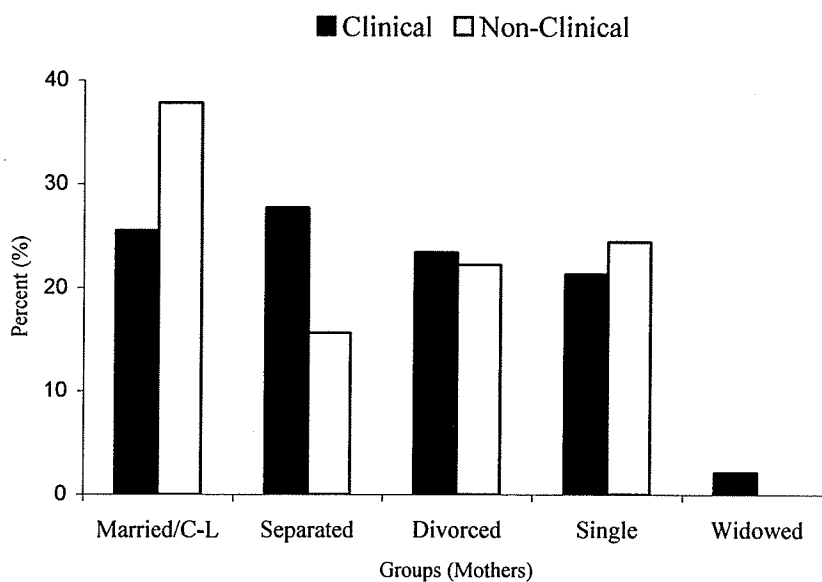


Figure 2. Marital status of the clinical and non-clinical mothers

When compared on education attained, there was a significant difference between the clinical and non-clinical mothers. When the groups were collapsed into the two categories, a) 12 years schooling or less and, b) 13 years schooling or more, mothers in the non-clinical sample were significantly more likely to have completed more than 12 years of schooling (59%) than mothers in the clinical group (41%), $\chi^2 (1, n = 92) = 4.426$,

$p = .035$.²

As shown in Figure 3, there were also differences between the clinical and non-clinical mothers in terms of ethnicity. Specifically, there were significantly more mothers who were not of Euro-Canadian descent in the clinical sample (38%) as compared to the non-clinical sample (18%), $\chi^2 (1, n = 92) = 4.775, p = .029$.

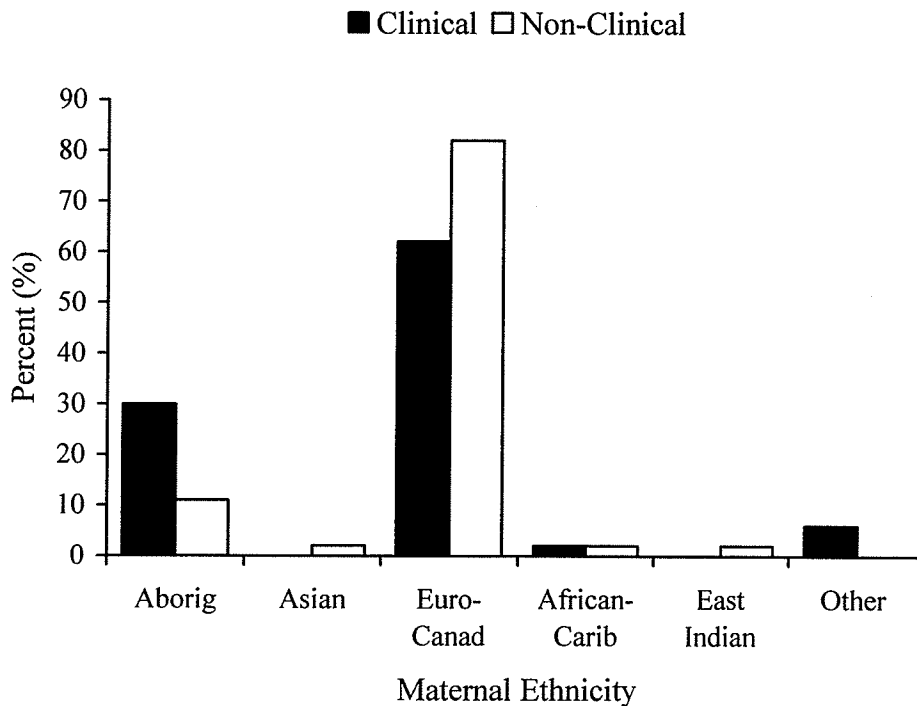


Figure 3. Ethnicity of the clinical and non-clinical mothers

² The impact of the demographic differences between the clinical and non-clinical groups on the research findings will be commented on in the discussion section.

Children

The mean age of children in the clinical group was 119 months ($SD = 35.8$, $range = 55 - 206$), or approximately 9.9 years of age. The mean age of children in the non-clinical group was 114 months ($SD = 35.21$, $Range = 61 - 224$) or 9.5 years of age. The two groups did not differ significantly in age.

In terms of gender, 60% of children in the clinical sample and 44% in the non-clinical sample were male. Forty percent of children in the clinical sample and 56% of the non-clinical sample were female. Therefore, there were significantly more boys in the clinical sample $\chi^2 (1, n = 184) = 4.218, p = .040$.

Table 1 illustrates the gender composition of the sibling dyads in the clinical and non-clinical groups. A Chi-Square statistic indicated there were no significant differences between these groups in terms of gender composition.

Table 1

Sibling Dyad Composition

	Clinical	Non-Clinical
Sister Pairs	9	18
Brother Pairs	18	13
Sister/Brother Pairs	20	14
$n =$	47	45

Procedure

Families chose from four locations to meet with researchers for data collection, a) the Family Research Laboratory at the University of Manitoba, b) the Elizabeth Hill Centre, c) the Family Centre, or d) the Ma Mawi Centre. Data were gathered over two family visits to the research centre of choice. These visits were typically spaced one week apart. During the first visit, mothers completed consent and demographic information, collected in an interview format. This interview included a question concerning how long the children had been exposed to domestic violence. The mother then completed the Child Behaviour Checklist (Achenbach, 1991) for each child and the Conflicts Tactics Scale (Straus, 1979). To address literacy concerns, the first few questions of the CBCL were read to mothers. If mothers indicated they were comfortable completing the rest of the questionnaire on their own, they were permitted to do so. In most cases, the entire CBCL was read to mothers by an interviewer, while the CTS measure was completed by mothers independently.

As the mother completed these measures, research assistants interviewed siblings separately. Children completed the Parental Acceptance-Rejection Questionnaire (Rohner, 1991), which was read to the children by a research assistant. Adolescents typically completed the scale independently. On the second visit, uncompleted measures were finished and families were paid \$75 for their participation. A number of other measures were collected during these visits, as well as audio and video-recorded data, which will not be included in the present analysis.

Measures

The Child Behaviour Checklist (CBCL) – Parent Form

Animal cruelty was assessed in the clinical and non-clinical groups by maternal report on the Child Behaviour Checklist (Achenbach, 1991). This scale was relevant for children between the ages of 5 and 17 years. Mothers were required to rate their children on a three-point scale consisting of 0 (*never true*), 1 (*sometimes or somewhat true*), and 2 (*very often or often true*). Item 15 (*cruel to animals*) was used in the present study to assess whether children are cruel or not cruel to animals. Answers to Item 15 were converted to a binary scale of 0 (*cruelty to animals not indicated*) and 1 (*cruelty to animals indicated*) for both the clinical and non-clinical samples of children. Although this method may be criticized because only one informant is being used to assess animal cruelty, research has found that parents are often more reliable reporters of children's externalizing problems than the children themselves (Grych, Seid, & Fincham, 1992; Loeber, Green, Lahey, & Stouthamer-Loeber, 1991).

As noted by Achenbach (1991) the CBCL is very useful for outcome research that seeks to determine the relative risk rates for children exposed to a number of identifiable background conditions, such as domestic violence. Achenbach reported that the CBCL could be used to determine whether exposed children have elevated rates of problems in general, or elevated rates of specific problems as measured by particular syndrome scales.

Norming data for the CBCL were drawn in 1989 from a large, representative sample of non-referred, nonhandicapped children (Achenbach, 1991). The CBCL consists of both competence and problem item scales. Construct validity was measured by comparing the CBCL with respective validation scales including the Conner's (1973)

Parent Questionnaire and the Quay-Peterson (1983) Revised Behaviour Problem Checklist. The CBCL scores correlated highly with these scales. Of interest to the present study is the problem scale, which includes Item 15 (*cruel to animals*). The findings of Achenbach (1991) indicate the problem scale has content validity as clinically referred children obtained significantly higher scores on nearly all problem items, including Item 15, as compared to demographically matched non-referred children.

In the present study, several different interviewers administered the scale to all participants. However, Achenbach (1991) reported an inter-interviewer reliability of .95 for the problem scale items. One-week test-retest reliability was .89 for all problem scale items. Although the CBCL was completed by mothers only, Achenbach reported an interparental agreement mean of .76 for all problem scale items. Aggressive behaviour is an externalizing subscale of the problem scale that is of particular interest to the present study as Item 15 (*cruel to animals*) is included within it. Achenbach found that interparental agreement for the aggressive subscale was a respectable .77. In the present study, the primary analysis will utilize scores on Item 15 of the CBCL as a measure of the animal cruelty variable in both the clinical and non-clinical samples.

As shown in Table 2, another pertinent finding by Achenbach (1991) is the small but significant tendency for boys to score higher than girls, and younger children to score higher than older children on Item 15 in referred and non-referred samples alike. The present study did address the possibility that there may be some interaction between parental report of animal cruelty on the CBCL and the age and sex of the children involved.

Table 2

Percentage of Children Reported Cruel to Animals (Achenbach, 1991)

Group	N	Animal Cruelty		N	Age 12 – 18 Years
		Age 4 – 11 Years			
Referred Boys	582	18%		450	16%
Referred Girls	619	11%		459	9%
Non-Referred Boys	582	6%		450	3%
Non-Referred Girls	619	2%		459	1%

The Conflict Tactics Scale (CTS-R) – Self Version

The severity of domestic violence exposure by children was measured by the Revised Conflict Tactics scale (CTS-R) Self Version. This scale was completed by the mother, and asked questions about her own behaviour during a conflict with her present or most recent dating partner. Mothers were asked to rate how often they had carried out each of the 41 items on a 5-point scale ranging from 1 (*never did this*) to 5 (*more than once a month*). The original Conflict Tactics scale was devised by Straus (1979) and continues to be one of the most widely used measures of domestic conflict and violence. Conflict is operationalized by the tactics or methods used to reach a resolution. These tactics can range from passive to forceful physical attacks. The goal of the CTS is to operationalize and measure the range of conflict tactics used between intimate partners.

The original measure was made up of three scales, physical aggression, verbal

aggression, and reasoning. While the reliability of the physical aggression scale was strong (Cronbach's alpha of .82, Straus, 1990), controversy over the reliability of the verbal aggression and reasoning scales led to several revised versions of the CTS. The present study utilized a revised version by Josephson and Check (1990) who provided two reasons for their changes to the scale. The first was to represent a broader range of conflict tactics used by couples, and the second, to study violent conflict tactics in the context of other conflict resolution styles. The Conflict Tactics Scale-Revised (CTS-R) included 2 new non-violent conflict tactics (Avoidance and Passive-Aggressive/Indirect Tactics), a revised version of the verbal aggression scale called Escalation and Blame, and an improvement of the reliability of the reasoning scale.

Josephson and Check (1990) provided reliability and validity information for the CTS-R based on a sample of 384 students (273 women, 104 men, 7 unknown) from two Canadian universities (average age = 22.8 years). Students were asked to complete the survey based on their own actions in a romantic relationship. The results of factor analysis of the CTS-R replicated the factor structure reported by Straus (1979) on his norming sample of 2,143 American couples. As reported by Josephson and Check, even with the addition of new items, the three types of conflict tactics identified by Straus (reasoning, verbal aggression, and physical aggression) emerged as separate, identifiable factors. Additionally, the correlates of the added scale Escalation and Blame suggested it was conceptually quite different from the original CTS Verbal Aggression scale and may be a measure of conflict-intensifying behaviour patterns (Josephson & Check). The reliability of this new scale on the CTS-R was .91. In fact alpha reliabilities for all items added in the CTS-R were .80 or higher, which compare favourably to the standard set by the

physical aggression scale on the original CTS (Josephson & Check).

In the present study, the Physical Aggression subscale (9 items), the Escalation and Blame (Verbal Aggression) subscale (9 items), and the Passive-Aggressive/Indirect Tactics Subscale (9 items) were each investigated as possible mediators of animal cruelty for children in the clinical sample.³ The Avoidance subscale (5 items) was explored alone as a secondary analysis of the severity variable. The reliability for this scale on the CTS-R was .80.

Proportion of lifetime exposure to domestic violence

Mothers in the clinical sample estimated children's exposure to domestic violence in months as part of the demographic information they provided. To take each child's age into consideration, the length of exposure in months was then converted to a proportion of lifetime exposure for each child ($M = .45$, $SD = .31$, $Range = .01 - 1.00$). That is, the number of months children were exposed to domestic violence was divided by their age in months to create a proportion of lifetime exposure (e.g.: a child 120 months old exposed to domestic violence for 40 months was exposed for 33.33% of her life. Therefore, the proportion of lifetime exposure for this child would be .33).

The Parental Acceptance-Rejection Questionnaire (PARQ) -- Child Version

The quality of the mother-child relationship was measured by the Parental Acceptance-Rejection Questionnaire (Rohner, 1991), which was completed by all children in the study. This questionnaire was created based on parental acceptance-rejection theory (PART). As explained by Rohner, this theory of socialization attempts to

³ These subscales were not summed together to create one total severity scale as that would have equated three different forms of aggression that were not equal in terms of their impact on children (e.g., the impact of exposure to maternal physical domestic aggression may not be equal to exposure to maternal use of passive-aggressive techniques).

explain and predict the effects of parental acceptance and rejection on child development. There has been compelling evidence for the hypothesis that parental acceptance-rejection is associated universally with the psychological adjustment of children regardless of gender, race, geography, language, or culture (see Abdul & Rohner, 2002 for review).

In PART theory, parental acceptance and rejection are bi-polar items on a warmth continuum. Rejection, at one end of the continuum, is defined as the absence of parental warmth and affection. It can be expressed in three ways: aggression/hostility, neglect/indifference, and/or in an undifferentiated form where children perceive rejection that does not take either of the two forms mentioned. At the other end of the continuum is acceptance, defined as unconditional parental affection as perceived by the child. It can be expressed physically (cuddling, kissing, comforting, spending time with the child) and/or verbally (complimenting, praising). The PART theory posits that all children can place their relationship with a parent somewhere along this continuum and that it is the children's perception of rejection, not a specific set of actions by parents that can predict children's behavioural and personality dispositions (Rohner, 1991). PART theory predicts that children who perceive relationships with their parents to be at or near the rejection end of the warmth continuum will be more likely than children who perceive themselves as accepted to display specific forms of maladjustment including hostile and aggressive behaviour (Rohner, 1991).

The Parental Acceptance-Rejection Questionnaire (PARQ) is a 60-item self-report questionnaire that allows children to share their perceptions concerning their relationship with their mother. There are four scales, perceived warmth/affection (20 items), perceived hostility/aggression (15 items), perceived indifference/neglect (15 items), and perceived

undifferentiated rejection (10 items). All items are arranged in cyclical order. The first scale measures forms of maternal behaviour that indicate acceptance on the warmth continuum. The last three scales measure forms of behaviour that indicate rejection on the warmth continuum. The highest possible total score on the PARQ is 240 and the lowest is 60 with a mid-point of 150. High scores indicate high perceived maternal rejection. The first scale, perceived warmth/affection, is reverse scored so that a high score on the questionnaire overall reveals minimum perceived maternal warmth/affection and maximum perceived rejection (Rohner, 1991).

As reported by Rohner (1991), the validity and reliability of the PARQ was guided by the formal validation standards outlined in the American Psychological Association's *Standards for Educational and Psychological Tests* (1974). Norming data for the PARQ Child Version were based on a sample of 118 female and 102 male children (aged 9 to 12 years) living in the metropolitan Washington, D.C. area. The sample was approximately evenly distributed across social-class and ethnic group (African-American and Euro-American). The results revealed no significant age, gender, social-class, or ethnic group differences in children's responses to the instrument. The internal reliabilities (coefficient alpha) of the scales ranged from .72 to .90 indicating all items in the scale were sampling the same content area (Rohner, 1991). A measure of concurrent and convergent validity was reported for each scale within the PARQ Child Version. Each scale was found to correlate significantly to its respective validation scale. Divergent validity was established by correlations; each scale correlated more strongly with its respective validation scale than with the other scales in the questionnaire, as determined by an intercorrelated matrix of each PARQ scale with every other PARQ scale and with all validation scales used

(Rohner, 1991).

In the present study, this scale was read to children by an interviewer. It should be noted that the handbook suggests the scale be used for children between the ages of 9 and 12 and therefore the norming data for the scale, which were based on children aged 9 to 12, may not accurately represent all of the children in the present study who ranged from 5 to 17 years in age. Children were read a statement about their mothers (e.g., 'My mother says nice things about me') and then asked to rate this statement on a 5 point scale ranging from 1 (*almost never true*) to 5 (*almost always true*). Children were given a graphic of a likert scale to help them remember the choices they could make. This was especially helpful to children below the age of 9 years. The primary analysis utilized the overall PARQ score as the measure of the quality of the mother-child relationship variable. The perceived PARQ Hostility/Aggression subscale was also explored as a mediator of animal cruelty among children in the clinical sample.

Method of Data Analysis

Hypotheses One to Three

Data analysis was conducted in two stages. To address hypothesis one, the prevalence of animal cruelty in children in the clinical (94 subjects) and non-clinical (90 subjects) samples were compared using a Chi-Square statistic. This test assessed whether the observed frequency distribution of animal cruelty in the clinical sample differed significantly from the observed frequency distribution of animal cruelty in the non-clinical sample. This statistic was appropriate to test the first hypothesis because both variables were of a categorical nature. An alpha level of .05 was used for all statistical tests.

For hypothesis two, the gender of children cruel to animals was compared with the gender of children not cruel to animals. Clinical and non-clinical groups were combined to analyze this variable. The Chi-Square statistic was used to explore the relation between gender and animal cruelty because two categorical variables were compared. As noted by Levin and Fox (2000) the Chi-Square is the appropriate statistic for comparing two nominal variables.

For hypothesis three, the age of children cruel to animals was compared with the age of children not cruel to animals. Clinical and non-clinical groups were again combined to analyze this variable. An independent-samples t-test was used to explore the relation between age and animal cruelty in children. This statistic compared the mean ages of the two groups. When using this statistic, it is preferable that participants are randomly assigned to two groups (in this case, cruel or not cruel to animals) so that differences between these groups will be less likely due to confounding factors. However, in the present study, children could not be randomly assigned to cruel and not cruel groups.

Strengths and Limitations of the Hypothesis One to Three Analyses

A Chi-Square was used for the first hypothesis. Although making few demands on the data, the Chi-Square statistic does have some important assumptions. As contended by Levin and Fox (2000), the data must be nominal, cell frequencies must not be too disproportionate (i.e., disproportionate cell frequencies may cause the statistic to become unstable), data must be gathered randomly, and at least two independent samples of respondents must be obtained. In the present study, the first two assumptions of the Chi-Square statistic were well met. The data were not randomly gathered, but breaching this assumption of the Chi-Square is frequent in research and not typically considered a

serious offence (Levin & Fox, 2000).

On the other hand, a breach of the independence assumption of the Chi-Square is a more serious violation. Although care was taken to administer tests independently to both mothers and children, it can be argued that samples of sibling dyads are not independent of one another. Although mothers reported separately as to whether her older child and younger child were cruel to animals, it may be argued that children from the same family violate the independence of observations assumption. Therefore an attempt was made to compare the older and younger sibling groups in each sample separately. This was to insure that only one family member was included within a single Chi-Square analysis. A Chi-Square was calculated for the younger sibling group. However, a Chi-Square for the older sibling group could not be calculated because there was a cell frequency of one for the non-clinical group. This cell frequency would cause the Chi-Square statistic to become unstable and thus unreliable. As a result, it would be unknown whether older siblings in the clinical group were significantly more likely to engage in animal cruelty than older siblings in the non-clinical group if sibling groups remained separated in the analysis.

Therefore, to answer hypothesis one more conclusively, a second Chi-Square was performed. However, to do so, it was first necessary to determine whether animal cruelty was dependent on sibling status, namely, was engaging in animal cruelty more likely among older or younger siblings. To find out, older and younger siblings in the clinical and non-clinical samples were merged so that there was only one group of older siblings and one group of younger siblings ($n = 94$ and $n = 90$ respectively). Findings indicated that animal cruelty was not dependent on sibling group.

With this knowledge, older and younger siblings within the clinical and non-clinical samples were merged. The clinical group ($n = 184$) was then compared to the non-clinical group ($n = 180$). It is acknowledged that the merging together of older and younger siblings within each sample, although conducted to answer hypothesis one more conclusively, may have resulted in a violation of the independence of observations assumption for the Chi-Square statistic. Therefore, it is suggested the reader interpret and draw conclusions from this finding with caution.

Hypotheses Four to Ten

For the second stage of the analysis, variables expected to mediate animal cruelty in children exposed to domestic violence (i.e., clinical group only) were investigated. To address hypotheses four to ten, four logistic regression models were used. Variables were entered into each model in a block method.

Imputation of Missing Data

Twenty-nine percent of the PARQ cases ($n = 27$) and 11% of the CTS cases ($n = 10$) had missing total or subscale scores. To add to the power of the analyses these scores were imputed using a mean person substitution method. This method of replacing missing individual item scores with the overall subscale mean for that individual was chosen because it acknowledges individual differences across subjects (Roth, Switzer, & Switzer, 1999). In their investigation on missing data techniques (MDT's), Roth, Switzer, and Switzer concluded, "the answer to the question of which MDT's are most effective for estimating indices of covariation with missing items appears to be the mean person" (p. 228). They further stated that researchers should avoid the mean item MDT (substituting missing items with the mean response of the entire group on the scale) as it ignores

individual differences when estimating missing data. They reported that the mean item MDT resulted in significantly reduced covariances when data were missing at the test level and somewhat biased estimates for regression weights. Based on this argument, the mean person MDT was selected over the mean item MDT in the present study.

A further consideration on the use of MDT's is the percentage of individual scale items missing. As noted by Huisman (2000), the danger of MDT's comes from the possible difference between responders and non-responders. Results based on imputed data become increasingly biased as the percentage set to missing is increased (Lawrence, Kenneth, & Pieper, 1997). In the study by Roth, Switzer, and Switzer (1999) the highest percentage set to missing was 20%. In the present study, the percentage set to missing was a more conservative 5% to avoid biasing the results as much as possible. Scores were imputed for missing items using the mean person substitution method when the total proportion of missing items for a measure was 5% or fewer. Missing items were imputed on the PARQ and the CTS measures. As the PARQ has 60 items, scores were imputed for cases with three or less items missing. The CTS has 41 items, therefore scores were imputed for cases with two or less items missing. To calculate item scores, each applicable case was calculated based on the subject's mean response to the subscale within which the item was missing. The mean subscale score was used rather than the mean scale score because the subscales were very different from one another, and in the case of the CTS, could not be tallied together. The mean subscale score was added to cases that had three or less (PARQ) or two or less (CTS) missing items on the total scale. A total of six CTS and 13 PARQ imputed case scores were added to the analyses by use of the mean person substitution method. It should be noted that the significance of the five

independent variables (or lack thereof) did not change as a result of score imputation.

Strengths and Limitations of the Hypotheses Four to Ten Analyses

Logistic regression models require several assumptions. First, the dependent variable must be dichotomous. The animal cruelty variable was converted into a binary variable and so this condition was met by the data. Second, the model must be correctly specified, meaning it contained all relevant predictors and no irrelevant predictors. As argued by Wright (1995) this assumption is rarely met in practice. In the present study, it may be that one or more independent variables were not relevant predictors of animal cruelty; however, because the nature of the present study was exploratory and the predictors were chosen on a theoretical basis, all were included in the analyses. Third, all categories must be mutually exclusive and collectively exhaustive. The present dataset meets this assumption as no case was in more than one outcome category at one time, and every case was a member of one of the analyzed categories. Fourth, variables included within a single regression model should not be significantly correlated with one another, in order to avoid multicollinearity. To satisfy this assumption, independent variables that were significantly correlated were not included within the same model (see Table 5 for correlations).

Fifth, outcomes must be statistically independent of one another. In the present study, the clinical and non-clinical samples were independent of one another. However, the children within each sample were made up of sibling dyads. Although mothers reported separately as to whether her older child and younger child were cruel to animals, and the question was not asked concurrently (i.e., the mother completed one or more questionnaires about one sibling before addressing questions about the second), it may be

argued that because the children were in the same family the independence of observations assumption was violated. Ideally, with a larger sample size, the older and younger sibling groups would have been run separately to ensure that only one family member was included within a single logistic regression model. However, the sixth assumption of logistic regression is that samples must include a minimum of 10 events for every variable investigated in order to get reasonably stable estimates of the regression coefficients (Peduzzi et al., 1996). This can either be the event (16 children reported to be cruel to animals) or its counterpart (76 children reported to be not cruel to animals). However, Hosmer and Lemeshow (2000) have further commented on the findings of Peduzzi, noting that the relevant quantity is the frequency of the least frequent outcome. Therefore, in the present study, with 10 events per variable necessary to determine stable estimates of the regression coefficient, approximately 1.6 variables can be reasonably investigated. However, because the present study was exploratory in nature, seven variables were investigated in four models.

The first model included the severity of maternal physical domestic aggression and the proportion of child lifetime exposure to domestic violence. In the second model, maternal verbal domestic aggression and maternal hostility/aggression toward the child (PARQ Hostility/Aggression subscale score) were entered. In the third model, the frequency of maternal use of passive-aggressive behaviours and the quality of the mother-child relationship (total PARQ score) were examined. In the last model, maternal avoidance of domestic conflict was examined (CTS-R Avoidance subscale score). The seven variables were separated into four models to avoid issues of multicollinearity and relieve some overfitting of the data. Still, it is acknowledged that the use of seven

variables has overfit the dataset. Therefore, relationships that seem statistically significant may actually be noise. The reader is cautioned to interpret the results while keeping in mind the findings may not replicate well with larger data sets due to the small sample size.

Evidently, separating the older and younger sibling groups would have resulted in sample sizes too small for the analyses of even one variable. Therefore, older and younger siblings were combined and analyzed together. To ensure empirically that the independence of observations assumption was not violated the number of sibling pairs in which both siblings were cruel to animals ($n = 3$) were compared to the number of sibling pairs in which the mother indicated one child was cruel to animals and the other was not ($n = 10$), as well as the number of sibling pairs in which the mother indicated neither child was cruel to animals ($n = 32$). These frequencies are displayed in Table 3. Results indicated that children whose siblings were cruel to animals were not more likely to be cruel to animals themselves, as reported by their mothers $\chi^2(1, n = 45) = 2.707, p = .100$. That is, mothers who indicated one child was cruel to animals in the clinical group were not more likely to indicate the second child was cruel to animals as well.

Table 3

Frequency of Sibling Dyads Cruel and Not Cruel to Animals

Child Cruel to Animals	Sibling Cruel to Animals		n
	No	Yes	
No	32	4	36
Yes	6	3	9
<i>n</i> =	38	7	45

As argued by Keller (2001):

Independence of observations implies that the current data value provides no indication of the next data value. For independent processes in a state of statistical control, the best predictor of the next observation is the average. For dependent (or auto-correlated) processes, the best predictor of the next observation is based upon some function of the current observation (or a prior observation). (p. 1)

Based on this definition of independence of observations, it could be argued that the sibling pairs are independent. That is, information about one sibling concerning animal cruelty provided no additional information about their older or younger sibling. As such, given that the true dependence of the sibling groups in the present study is debatable in terms of the dependent variable, and the limited sample size, older and younger siblings from the same family were combined in all regression analyses to better satisfy the sample size assumption of the logistic regression model. It is recognized that, given a large sample size, analyses separated by sibling group would have been a superior choice.

CHAPTER 4: RESULTS

The means, standard deviations, and ranges for the seven potential mediating variables investigated in the present study are presented in Table 4. As illustrated in Table 5 there were significant Kendall's Tau-B correlations between these variables. There were significant positive correlations between the CTS-R subscales and significant negative correlations between the CTS Avoidance Score and both the PARQ Rejection Total Score and Hostility Score. Thus, mothers in the clinical sample who used conflict avoidance tactics more frequently with a domestic partner were less hostile and rejecting of their children, as reported by their children. Table 6 displays the Pearson's Product-Moment correlations for these seven variables, and Table 7 illustrates the differences between the Kendall's Tau-B and Pearson's Product-Moment correlations. The majority of the Kendall's Tau-B coefficient scores are lower than the Pearson's Product-Moment scores. The lower scores on the nonparametric measure reflect the ordinal nature of the data and indicate the strength of the correlations between the variables was artificially inflated by use of the parametric correlation coefficient. As the mediating variables were ordinal, the findings of the present study should be inferred to the general population with caution, as the findings were not based on assumed underlying mathematical distributions.

As shown in Table 8 there was a significant and negative relation between maternal use of passive-aggressive techniques and animal cruelty in children. That is, children exposed to more frequent maternal use of passive-aggressive techniques were less likely cruel to animals than children exposed to less frequent use of maternal passive-aggressive techniques.

Table 4
Descriptive Statistics for the Eight Mediating Variables

	<i>M</i>	<i>SD</i>	Minimum	Maximum	<i>N</i>
Proportion of Lifetime Exposure	.45	.31	.01	1.00	92
			.01	1.00 ^a	
CTS Physical Aggression Score	5.40	7.71	.00	35.00	94
			.00	45.00 ^b	
CTS Verbal Aggression Score	22.56	11.73	1.00	45.00	90
			.00	45.00 ^c	
CTS Passive-Aggressive Score	16.48	10.88	1.00	43.00	94
			.00	45.00 ^d	
CTS Avoidance Score	13.87	7.71	.00	25.00	92
			.00	25.00 ^e	
PARQ Rejection Total Score	147.06	45.93	84.00	231.00	80
			60.00	240.00 ^f	
PARQ Hostility Subscale	35.46	13.19	15.00	57.00	80
			15.00	60.00 ^g	

Note: Scores indicate the minimum and maximum scores for the scales listed.

^a1.00 indicates child exposed to domestic violence for entire life. ^{b,c,d}45.00 indicates maximum physical violence, verbal aggression, and passive-aggressive techniques respectively. ^e25.00 indicates maximum avoidance of violence. ^f240.00 indicates child perceives maximum rejection. ^g60.00 indicates child perceives maximum hostility/aggression.

Table 5

Kendall's Tau-B Correlations between Potential Mediator Variables

	Prop. Life Exp.	CTS Phys. Aggr.	CTS Verb. Aggr.	CTS Pass- Aggr.	CTS Avoid- ance	PARQ Total Reject.	PARQ Host- ility
Proportion of Lifetime Exp.	--	.104	.069	-.018	.040	-.049	-.004
CTS Physical Aggression Score		--	.348**	.252**	.369**	.033	.077
CTS Verbal Aggression Score			--	.389**	.264**	.049	.065
CTS Passive-Aggressive Score				--	.205**	-.018	-.006
CTS Avoidance Score					--	-.220**	-.179*
PARQ Rejection Total Score						--	.817**
PARQ Hostility Subscale							--

* $p < .05$. ** $p < .01$ (two-tailed)

Table 6

Pearson Product-Moment Correlations between Potential Mediator Variables

	Prop. Life Exp.	CTS Phys. Aggr.	CTS Verb. Aggr.	CTS Pass- Aggr.	CTS Avoid- ance	PARQ Total Reject.	PARQ Host- ility
Proportion of Lifetime Exp.	--	-.007	.091	-.047	.032	-.004	.027
CTS Physical Aggression Score		--	.368*	.366**	.470**	-.034	.032
CTS Verbal Aggression Score			--	.544**	.418**	.035	.063
CTS Passive-Aggressive Score				--	.320**	-.042	-.006
CTS Avoidance Score					--	-.303**	-.282*
PARQ Rejection Total Score						--	.953**
PARQ Hostility Subscale							--

* $p < .05$. ** $p < .01$ (two-tailed)

Table 7

Differences between the Pearson Product-Moment and Kendall's Tau-B Correlations

	Prop. Life Exp.	CTS Phys. Aggr.	CTS Verb. Aggr.	CTS Pass- Aggr.	CTS Avoid- ance	PARQ Total Reject.	PARQ Host- ility
Proportion of Lifetime Exp.	--	.097	.022	-.029	.008	-.045	.023
CTS Physical Aggression Score		--	.020	.114	.101	-.001	.045
CTS Verbal Aggression Score			--	.155	.154	.014	.002
CTS Passive-Aggressive Score				--	.115	-.024	.000
CTS Avoidance Score					--	-.083	-.103
PARQ Rejection Total Score						--	.136
PARQ Hostility Subscale							--

Table 8

Kendall's Tau-B Correlations between Predictor Variables and Outcome Variable

	Animal Cruelty	<i>n</i>
Proportion of Lifetime Exposure	-.083	90
CTS Physical Aggression Score	-.015	92
CTS Verbal Aggression Score	-.116	88
CTS Passive-Aggressive Score	-.179*	92
CTS Avoidance Score	-.108	90
PARQ Rejection Total Score	-.150	80
PARQ Hostility Subscale	-.117	80

* $p < .05$ (one-tailed).⁴*Animal Cruelty and Exposure to Violence*

The first hypothesis predicted that children exposed to domestic violence would be significantly more likely to engage in animal cruelty, as reported by their mothers, than children not exposed to violence. Tests for this hypothesis were conducted in two stages. The results of the first analysis indicated that children in the younger sibling group exposed to domestic violence were not significantly more likely to display animal cruelty, as reported by their mothers, than children in the younger sibling group not exposed to violence $\chi^2 (1, n = 96) = 1.249, p = .205$.

A Chi-Square for the older sibling group was not calculated because there was a

⁴ One-tailed tests were conducted because it was predicted that the findings for each of these mediating variables would point in a particular direction.

frequency of less than five within this dataset. As shown in Table 9, only one older sibling in the non-clinical group was reported to have engaged in animal cruelty. As a result, it was unclear whether older siblings in the clinical group were significantly more likely cruel to animals than older siblings in the non-clinical group.

Table 9

Animal Cruelty in the Clinical and Non-Clinical Groups Separated by Sibling Category

Animal Cruelty	Clinical	Non-Clinical
Younger Siblings		
No	37	40
Yes	9	5
Older Siblings		
No	39	44
Yes	7	1
Siblings Combined		
No	76	84
Yes	16	6

However, as it was found that animal cruelty was not significantly related to sibling status, $\chi^2 (1, n = 182) = 1.861, p = .172$, a second Chi-Square was performed to test hypothesis one more conclusively. In this Chi-Square sibling groups were combined.⁵ The results indicated that children in the clinical sample (exposed to domestic violence) were significantly more likely to have displayed animal cruelty, as reported by their mothers, than children in the non-clinical sample, $\chi^2 (1, n = 182) = 4.924, p = .026$. An odds ratio comparing the risk for animal cruelty in the clinical and non-clinical groups indicated that children in the exposed group were 2.95 times more likely to engage in animal cruelty than children in the non-clinical group [95%, *CI* = 1.097 to 7.918].

As illustrated in Table 8, it was also found that children reported to be cruel to animals were significantly more likely to be reported to have other physical, behavioural, and socio-emotional problems on the CBCL. The significance of these findings will be commented on in the discussion section.

⁵ It is acknowledged that the merging together of older and younger siblings within this sample, although conducted to answer the gender hypothesis more conclusively, may have resulted in a violation of the independence of observations assumption for the Chi-Square statistic. Therefore, it is suggested the reader interpret and draw conclusions from this finding with caution.

Table 10

Kendall's Tau-B Correlations between Animal Cruelty and Other CBCL Items

CBCL Items	Animal Cruelty	
	Clinical Group	Non-Clinical Group
Destroys own things	.402**	.252*
Is demanding	.205*	.262*
Physically attacks others	.199*	.207*
Steals things at home	.236*	.229*
Does not get along with others	.199*	.074
Easily jealous	.287**	.180
Eats things that are not food	.208*	-.028
Feels dizzy	.219*	-.071
Feels not loved	.285**	-.043
Feels others are out to get him/her	.216*	.083
Has a fear of animals or places	.262**	.116
Has asthma	.198*	-.099
Has bad friends	.250*	-.009
Lonely	.223*	.153
Plays with sex parts too much	.231*	-.051
Repeats acts/compulsions	.242*	.129
Suspicious	.212*	-.106
Other problems (not listed on CBCL)	.452**	-.027

* $p < .05$. ** $p < .01$

Hypothesis Two

Hypothesis two predicted that across both samples, more males than females would be reported cruel to animals. To examine gender, the clinical and non-clinical groups and older and younger sibling groups were combined as numbers were too small to run these groups separately when separated by sibling status. These frequencies are displayed in Table 11. Findings indicated that child gender was not significantly related to animal cruelty, $\chi^2(1, n = 182) = .076, p = .392$. To provide additional information, a second Chi-Square was conducted for the clinical sample collapsing across sibling status. Frequencies were too small to conduct the same analysis with the non-clinical group. Findings indicated gender did not have a significant impact on the dependent variable in the clinical group, $\chi^2(1, n = 92) = 1.74, p = .339$. Clinical status and gender frequencies are displayed in Table 12.

Table 11

Frequency of Animal Cruelty by Gender

Animal Cruelty	Gender		<i>n</i>
	Male	Female	
No	85	75	160
Yes	11	11	22
<i>n</i> =	96	86	182

Table 12

Frequency of Animal Cruelty by Gender and Clinical Status

Gender			
Animal Cruelty	Male	Female	<i>n</i>
Clinical Group			
No	47	29	76
Yes	9	7	16
Non-Clinical Group			
No	38	46	84
Yes	2	4	6

Hypothesis Three

Hypothesis three predicted that the mean age of children reported cruel to animals would be younger than the mean age of children who were not. To examine age, one independent-samples *t* test statistic (equal variances not assumed) was run for the younger siblings and one for the older in both the clinical and non-clinical groups to meet the independence assumption. Findings indicated that children who were cruel to animals were not significantly older or younger than children who were not cruel to animals in the non-clinical groups [younger sibling group: $t(43) = -.912, p = .184$ (one-tailed); older sibling group: $t(43) = -.164, p = .435$ (one-tailed)], and the clinical groups [younger sibling group: $t(44) = -.281, p = .390$ (one-tailed); older sibling group: $t(44) = .851, p =$

.199 (one-tailed)].⁶ The means and standard deviations for these groups are reported in Table 13. It should be noted that clinical children reported to be cruel to animals were significantly older than non-clinical children reported to be cruel to animals, $t(22) = 1.781, p = .048$ (one-tailed). The means and standard deviations for these groups are reported in Table 14.

⁶ One-tailed tests were conducted because it was predicted that younger children would be more likely cruel to animals than older children (i.e., it was expected the findings would point in a particular direction).

Table 13

Descriptive Statistics for Age Variable and Animal Cruelty

Group	<i>M</i> ^a	<i>SD</i>	<i>n</i>
Clinical Sample			
Younger Siblings			
Cruel	8.7	.91	9
Not Cruel	8.4	.39	37
Older Siblings			
Cruel	10.5	.96	7
Not Cruel	11.5	.47	39
Non-Clinical Sample			
Younger Siblings			
Cruel	6.8	1.30	5
Not Cruel	7.8	2.51	40
Older Siblings			
Cruel	10.0	-	1
Not Cruel	10.3	2.85	44

^a Mean age is reported in years.

Table 14

Descriptive Statistics for the Age of Children Cruel to Animals

	$\bar{X}^a$	SD	Observed Range		n
Clinical Children Cruel to Animals	9.52	.68	5.58	15.25	16
Non-Clinical Children Cruel to Animals	7.79	.69	5.75	10.42	6

^a Mean age is reported in years.

Mediators of Animal Cruelty

For the second set of analyses, variables expected to mediate animal cruelty in children exposed to domestic violence (i.e., clinical group only) were investigated. To address hypotheses four to ten, four logistic regression models were conducted. Variables were entered into each model in a block method. The first model included the severity of maternal physical domestic aggression and the proportion of child lifetime exposure to domestic violence. In the second model, maternal verbal domestic aggression and maternal hostility/aggression toward the child (PARQ Hostility/Aggression subscale score) were entered. In the third model, the frequency of maternal use of passive-aggressive behaviours and the quality of the mother-child relationship (total PARQ score) were examined. In the last model, maternal avoidance of domestic conflict was examined (CTS-R Avoidance subscale score). The dependent variable for each model was animal cruelty in children.

Hypothesis Four

Hypothesis four predicted that children exposed to more severe maternal domestic physical aggression would be significantly more likely to engage in animal cruelty than children exposed to less severe physical aggression. As shown in Table 15, this hypothesis was not supported.

Hypothesis Five

Hypothesis five predicted that children exposed to more severe maternal domestic verbal aggression would be significantly more likely to engage in animal cruelty than children exposed to less severe verbal aggression. As shown in Table 16, maternal verbal aggression was significantly and negatively related to animal cruelty. That is, children exposed to more severe maternal verbal aggression were significantly less likely to be reported cruel to animals.

Hypothesis Six

Hypothesis six predicted that children exposed to more frequent maternal use of passive-aggressive techniques with a domestic partner would be significantly more likely to engage in animal cruelty than children exposed to less severe domestic aggression. As shown in Table 17, the frequency of maternal use of passive-aggressive techniques with a domestic partner was significantly and negatively related to animal cruelty. That is, children exposed to more frequent use of passive-aggressive techniques were significantly less likely to be reported cruel to animals.

Hypothesis Seven

Hypothesis seven predicted that children of mothers who avoided conflict with their domestic partners would be significantly less likely to engage in animal cruelty than

the children of mothers who indicated they avoided conflict less often. This hypothesis was not supported.

Hypothesis Eight

Hypothesis three predicted that proportion of lifetime exposure to violence for children would predict animal cruelty in children. As indicated in Table 15, hypothesis eight was not supported.

Hypothesis Nine

Hypothesis nine predicted that children exposed to domestic violence who reported more rejecting mother-child relationships would be significantly more likely to engage in animal cruelty. As indicated in Table 17, this hypothesis was not supported.

Hypothesis Ten

Hypothesis ten predicted that children exposed to domestic violence who reported their mothers were more hostile and aggressive would be significantly more likely to engage in animal cruelty than children exposed to domestic violence who reported less hostile and aggressive mother-child relationships. As indicated in Table 16, this hypothesis was not supported.

Table 15

Summary of Simultaneous Logistic Regression Analysis for Domestic Physical Aggression and Proportion of Child Lifetime Exposure Predicting Child Animal Cruelty

Predictors ^a	<i>B</i>	Odds Ratios	<i>df</i>	Wald
Domestic Physical Aggression Subscale	-.024	.976	1	.371
Proportion of Child Lifetime Exposure	-.919	.399	1	.972
Constant	-1.014	.363	1	4.202
Test		χ^2	<i>df</i>	<i>p</i>
Goodness-of-fit test				
Hosmer & Lemeshow		6.399	8	.603

Note. For all analyses, odds ratios greater than one denoted the variable was positively related to animal cruelty in children. Odds ratios of less than one denoted the variable was negatively related to animal cruelty.

^a_{*n*} = 90.

Table 16

Summary of Simultaneous Logistic Regression Analysis for Domestic Verbal Aggression and Mother-Child Hostility Predicting Child Animal Cruelty

Predictors ^a	<i>B</i>	Odds Ratios	<i>df</i>	β
CTS Verbal Aggression Subscale	-.060	.942*	1	4.086
PARQ Hostility/Aggression Subscale	-.025	.976	1	1.089
Constant	.601	1.825	1	.381
Test		χ^2	<i>df</i>	<i>p</i>
Goodness-of-fit test				
Hosmer & Lemeshow		6.372	8	.606

^a $n = 77$.

* $p < .05$.

Table 17

Summary of Simultaneous Logistic Regression Analysis for Domestic Passive-Aggressive Tactics Use and Mother-Child Rejection Score Predicting Child Animal Cruelty

Predictors ^a	<i>B</i>	Odds Ratios	<i>df</i>	β
CTS Passive-Aggressive Subscale	-.103	.902*	1	5.873
PARQ Total Score	-.013	.987 ^b	1	3.017
Constant	1.679	5.358	1	1.760
Test		χ^2	<i>df</i>	<i>p</i>
Goodness-of-fit test				
Hosmer & Lemeshow		7.537	8	.480

^a*n* = 80. ^bPARQ Total Score was significant at the *p* < .10 level.

**p* < .05.

Table 18

Summary of Simultaneous Logistic Regression Analysis for
Maternal Avoidance of Domestic Conflict Predicting Child Animal Cruelty

Predictor ^a	B	Odds Ratios	<i>df</i>	β
CTS Avoidance Subscale Score	.040	1.041	1	1.096
Constant	-2.117	.120	1	10.628
Test		χ^2	<i>df</i>	<i>p</i>
Goodness-of-fit test				
	Hosmer & Lemeshow	12.406	7	.088

^a*n* = 90

Summary of Logistic Regression Models

To summarize, the first logistic regression model was not significant. The second and third logistic regression models indicated that the severity of maternal verbal aggression and the frequency of maternal use of passive-aggressive techniques were significant predictors of animal cruelty. These models also indicated that the quality of the mother-child relationship was not a significant predictor of animal cruelty. The fourth logistic regression model indicated that maternal domestic conflict avoidance was not a significant predictor of animal cruelty. These findings will be discussed in the following section.⁷

⁷ Koster and Piotrowski (2000) presented a poster session that investigated animal cruelty using the present dataset. Variables that might mediate animal cruelty in the clinical group were examined. Sixteen children in the clinical group who were cruel to animals were compared against a matched sample of 16 children in the clinical group who were not cruel to animals (analyses were conducted by C. Piotrowski). A hierarchical logistic regression was used to compare the two groups on the mediating variables: self esteem, severity/length (the two variables were summed to create a combined score), and the quality of the mother-child relationship (using the total score on the PARQ). It should be noted that this work differed significantly from the present study, and that all analyses in the present study were conducted independently by the author.

CHAPTER 5: DISCUSSION

Research has suggested there is an increased risk for animal cruelty among children exposed to violence (Ascione, 1998; DeViney, Dikert, and Lockwood, 1986).

The findings of the present study suggest that children exposed to domestic violence may be more likely cruel to animals than children not exposed to violence, and that the style of maternal conflict patterns may mediate this link.

Animal Cruelty and Children Exposed to Violence

In the present study, the first hypothesis predicted that children exposed to domestic violence would be significantly more likely to be cruel to animals than children not exposed to violence. Results indicated this hypothesis was supported. An odds ratio suggested that children exposed to domestic violence were almost three times more likely to display animal cruelty than children without a history of violence. However, the confidence interval was very large (95% $CI = 1.097$ to 7.918). As such, the range of mean values that the true population mean is likely to fall within is difficult to determine (Levin & Fox, 2000).⁸

Still, these findings support the work of Ascione (1998) who also found that children exposed to domestic violence were at increased risk for animal cruelty. Ascione interviewed 22 women with children at a shelter for battered women. A total of 7 mothers who had experienced domestic violence (32%) indicated their children were cruel to animals. In total, seven children were reported cruel to animals but the total number of

⁸ It should also be noted that data were collected using was survey rather than experimental methods (i.e., variables were not manipulated and subjects were not assigned to groups at random). As such, although children exposed to domestic violence were more likely reported to be cruel to animals than non-exposed children, it can not be concluded that such exposure caused this behaviour due to the lack of control implicit in the design of the study.

children in this study was not reported. In the present study, a total of 13 mothers ($n = 46$) who had experienced domestic violence (28%) reported their children were cruel to animals, as compared to 13% of mothers in the non-clinical sample ($n = 45$). In total 16 children were reported cruel to animals (17%) in the present study.

There were important differences between the present study and Ascione's work. For example, Ascione used a battery of questions (the early version of the Battered Partner Shelter Survey-Pet Maltreatment Assessment, Ascione, Weber, & Wood, 1997) to assess animal cruelty while the present study used a single item from the CBCL. By asking a battery of questions, Ascione may have been able to expose more cases of child animal cruelty. Ascione also recruited families from a shelter sample, whereas the present study sampled from the community. By using a shelter sample, he may have examined children exposed to more severe domestic violence. However, Ascione did not measure the severity or duration of violence experienced by women and children within his sample so it is unknown if the violence experienced by the women in his study was more severe than in the present study.

Mothers in the present study also received therapy for the violence they had experienced prior to data collection. In Ascione's study, it is unknown if mothers had received therapy or treatment for the violence they had experienced before data collection. It may be that the therapy received by mothers in the present study improved their ability to deal with the violence they had experienced, and in turn, improved parenting and/or relationships with their children. Yet, the quality of mother-child relationships was not a significant predictor of animal cruelty in the present study, so it can not be stated that therapy-related improvements in the mother-child relationship made it less likely that

children would be reported to be cruel to animals.

In spite of these differences, both studies suggest an increased risk for animal cruelty among children exposed to domestic violence. Unfortunately, very little research has addressed the prevalence of animal cruelty among children exposed to domestic violence, and there is a paucity of research exploring animal cruelty and exposure to violence in general. From a theoretical perspective, social learning theory suggests that parents who favor aggressive solutions to problems tend to have children who use similar aggressive tactics (Bandura, 1978). As noted by Ascione (1999) children exposed to domestic violence may seek out more vulnerable victims to play out the violence they have been exposed to, including younger children and animals. This psychological phenomenon was termed identification with the aggressor by Ferenczi and Mosbacher (1933) who first described the mechanism as an extension of psychoanalytic theory. They suggested that physically or sexually abused children may compulsively repeat the violence they have experienced against others, and thereby place the aggression under their control. As noted by Frankel, (2002) it is a tactic typical of people in weaker positions such as children.

In the present study, it may be that children exposed to domestic violence who were cruel to animals were identifying with the aggressor and replaying those experiences with animals. As stated by Ascione (1993) "powerlessness is frightening and demoralizing, and unfortunately, exerting control over another can restore a sense of self-efficacy" (p. 55). However, mothers who indicated they had used physical violence against a domestic partner were no more or less likely to indicate their children were cruel to animals, $\chi^2 (1, n = 47) = 1.174, p = .279$, in the present study. Therefore, evidence was

not found to substantiate that children reported to be cruel to animals were identifying with a female aggressor. However, the severity and frequency of male-to-female domestic violence was unknown.

It is also important to note that the majority of children exposed to violence were not reported cruel to animals by their mothers. While it may be that some mothers were unaware their children were cruel to animals, it is also likely that the majority of children did not emulate violence they were exposed to by engaging in animal cruelty. Yet, it would not be expected that all child targets would carry out a selected outcome (Rossman, 2001). From a social learning perspective, children do not retain information gained from their exposure to violence in similar ways. Furthermore, their conceptions do not translate into courses of action in similar ways, nor are the motivational processes involved in the execution of such actions similar across all children. It is important to note that some children exposed to domestic conflict reject their parents as models (Cox, Paley, & Harter, 2001). For the remainder of children who choose to model the aggression they are exposed to, it would be improbable to expect that all would model aggression on animals. As noted by Bandura (1978) models teach general lessons, tactics, and strategies of behaviour that enable children to go beyond what they have seen and heard. Important differences between children and families would affect how children chose to model the violence they were exposed to.

For example, some children may have found aggressing against animals was more easily concealed and/or less likely to be punished than the same action taken against a younger sibling. In the present study it was unknown how many children had pets in the home. Based on previous research, it is likely that children exposed to domestic violence

with pets in the home were exposed to adult examples of animal cruelty (Ascione, 1998; Weber, 1999). Thus some children exposed to domestic violence in the present study were likely exposed to adult models of animal cruelty more often than the other children in that sample. As well, children with pets would have had more access to animal targets to model aggression on. It is also likely that the mothers of families with pets would more easily observe the behaviour of their children around animals. Therefore, given that some children may not model the aggression they are exposed to, that children may reproduce the violence they are exposed to in a number of ways, and that the experiences of children without pets may be different than the experiences of children with pets in a violent home, it is not surprising that the majority of children exposed to violence were not reported to be cruel to animals in the present study.

From an ecological systems theory viewpoint (Bronfenbrenner, 1979) the findings of the present study suggest that children exposed to violence at the microsystem level of their environment were more likely cruel to animals than children who were not exposed to violence at this level. Apfel and Simon (1996) have noted that memories of violence do not fade in children's minds but stay fresh, with very little threat needed to sustain feelings of insecurity and danger. As such, exposure to violence at the microsystem level may have influenced some children to view their environment as threatening or unpredictable as compared to children who were not exposed to violence. Indeed, it was found that overall, children exposed to domestic violence were significantly more likely to be suspicious, clingy, feel unloved, feel that others were out to get them, and feel that bad things will happen to them compared to children in the non-clinical group. As shown in Table 10, it is interesting the note that children who were cruel to animals and exposed

to domestic violence were more likely to fear animals or places than other children in the clinical group. This was not true for children cruel to animals in the non-clinical group. It may be that the experience of exposure to domestic violence influences some children to become more fearful of their environment. Fear may then prejudice children to misinterpret the signals of animals in their environment as threatening and lash out.

Yet, it is important to note that children are affected by multiple levels within their environment simultaneously. In the present study it is unknown how exposure to violence at the exosystem (neighbourhood) and macrosystem (larger community) level may have contributed to animal cruelty in children. Although there is no direct research correlating exposure to exosystem level violence with animal cruelty in children, a study by Van der Merwe & Dawes (2000) found that children who were directly exposed to neighbourhood or larger community violence were more aggressive and had less self-control than children who had not had such experiences. In North America, exposure to violence at the exosystem level (community violence) has been linked to a host of psychological disturbances among children and youth including increased aggression (see Aisenberg & Mennen, 2000 for review). Although anecdotal reports of increased animal cruelty among children in war zones exist (Ascione, 1998), research has yet to systematically examine the influence of community violence on the treatment of animals by children.

At the macrosystem level, information from more than 3500 research studies indicate that violence in the media contributes to aggressive behaviour in children and youth, desensitizes them to violence, and increases their fear of being harmed (see American Academy of Pediatrics, 2001 for review). Gerbner (1995) reviewed the prevalence of animal cruelty within television media and noted that such exposure may

desensitize children to violence against animals specifically. As noted by Ascione (1999) the Internet is another media source through which children may accidentally or purposely gain access to depictions of animal cruelty. From an ecological systems theory perspective, exposure to community and/or media violence may influence the behaviour of children toward animals. However, methodical research within these areas has not yet been conducted.

Gender and Animal Cruelty in Children

In the present study, it was hypothesized that across both samples, more males than females would be reported cruel to animals. However, no significant gender differences were found. In fact, an equal number of male ($n = 11$) and female ($n = 11$) children were reported cruel to animals when the clinical and non-clinical samples were combined. More female ($n = 4$) than male children ($n = 2$) were reported cruel to animals in the non-clinical group. However, the significance of this finding can not be determined due to the small sample size. In the clinical sample, the near equal frequencies of male ($n = 9$) and female ($n = 7$) children reported to be cruel to animals indicate gender did not have a significant impact on the dependent variable for children exposed to domestic violence. The absence of any gender difference in the clinical group is even more striking as there were significantly more boys than girls in this sample, and boys had been exposed to domestic violence for a significantly longer proportion of their lifetime than girls ($t = 2.439$, $n = 82$, $p = .017$). This outcome does not lend support to the findings of Luk et al., (1999) who examined 141 children with persistent problems related to conduct disorder. They reported a slight (though non-significant) trend that being cruel to animals was linked with the male gender. However, there is an important difference

between children sampled in the research or Luk et al. as compared to the present study. Specifically, children in the present clinical sample were not clinically-referred, but categorized as such based on their exposure to domestic violence. As a result, the findings of the present study may not be directly comparable to that study.

Achenbach (1991) also noted a very small but significant tendency for boys to score higher than girls on Item 15 of the CBCL (*cruel to animals*) in referred and non-referred samples alike. Due to the small sample size in both the clinical and non-clinical samples in the present study, it may be that a slight tendency for boys to score higher than girls was undetected. Yet, it is interesting to note that equal numbers of boys and girls were cruel to animals across both samples, and more girls than boys were reported to be cruel to animals in the non-clinical sample. Community response to animal cruelty in children has traditionally been *boys will be boys* (Ascione, 1999). Data used in the present study were gathered between 1996 and 2000 and may represent societal changes in the behaviour of girls toward animals (or the willingness of mothers to disclose this behaviour in girls). That is, the slight tendency for boys to score higher than girls regarding questions about animal cruelty may be no longer an actuality. Based on the sample size, this is clearly speculation and further research with larger sample sizes is needed to confirm or disprove this hypothesis.

Still, recent studies have documented that boys exposed to domestic violence were more likely than girls to demonstrate externalizing behaviour. However, such research has tended to look only at main effects. That is, mediating variables have been ignored. As argued by Kerig (2000) "Important gender differences may emerge not as mean differences between boys and girls, but as differences in the patterns of relationships

amongst variables” (p. 90). For example, Kerig found that the effects of exposure to domestic violence on children were mediated by perceived threat for boys and self-blame for girls. Foo (2002) also documented that appraisals of self-blame for marital conflict were associated with later physical aggression for girls, but not boys. Although such mediating factors were not investigated in the present study, it may be that gender does interact with animal cruelty in more complex ways.

Age and Animal Cruelty in Children

Although it was predicted that the mean age of children cruel to animals would be younger than the mean age of children not cruel to animals, the present findings indicate age was not significantly related to animal cruelty. This finding is in disagreement with the findings of Achenbach et al. (1991) and Achenbach (1991) who noted that younger children scored higher than older children on the item ‘cruel to animals’ on the ACQ and CBCL respectively. The findings of Achenbach applied to referred and non-referred children alike. In the present study, the clinical and non-clinical samples were combined to increase size of the sample. Still, the size of this sample ($n = 182$) may not have been large enough to detect slight age differences between children who were and were not cruel to animals as the frequency of animal cruelty was quite low ($n = 22$).⁹

Yet, it is interesting to note that clinical children who were reported to be cruel to animals were significantly older than non-clinical children reported to be cruel to animals, $t = 1.781$, $n = 22$, $p = .048$ (one-tailed).¹⁰ The importance of this finding is difficult to determine as there are no quantitative studies to suggest that animal cruelty is normative for children below a certain age or non-normative beyond a certain age. Arluke (2003)

⁹ More recent empirical literature concerning the average age of children cruel to animals has yet to be conducted.

¹⁰ The descriptive statistics for this finding are displayed in Table 14.

conducted a qualitative investigation of childhood animal cruelty among undergraduate students and concluded that cruel behaviour may serve a developmental purpose for younger children, much as ordinary play does. Although Arluke did not report the ages that children were cruel to animals, he stated that:

Many of the respondents thought animal abuse was a 'normal' part of growing up and a reflection of childhood 'innocence'. Thus they forgave themselves and others for such acts. In this regard, some relied on a vocabulary of motives that dismissed their abuse as a 'rite of passage'. This approach asserted that their prior behaviours were normal for children, and they no longer were children, having long stopped such play. From their perspective, children engage in animal cruelty because they are children, or as one respondent said of his earlier throwing a cat through a basketball hoop, 'We were young. We were kids. It was a stage for me.' Similarly, another respondent said of her animal abuse, 'It was just what most kids will go through. If you don't torture a cat, you are going to torture some type of animal.' (p. 426)

In the present study, the significant finding that children cruel to animals and exposed to domestic violence were older than children cruel to animals and not exposed to violence may lend credence to the typology developed by Ascione (2001). He indicated that children who fall into the first category entitled 'exploratory/curious animal abuse' were likely of preschool or early elementary age and lacking in training on the physical care and human treatment of animals. Humane education interventions were likely sufficient to prevent animal cruelty among these children. In the second category entitled 'pathological animal abuse' children were more likely to be older than children in the

exploratory/curious group. Rather than indicating a lack of education about animals, animal cruelty among these children was symptomatic of psychological disturbances related to a number of factors including the experience of abuse. For these children, professional, clinical intervention was warranted. Indeed, the findings of the present study suggest that while there may be normative dimensions to animal cruelty among younger children, other risk factors (i.e., exposure to violence) may be present in lives of older children who are cruel to animals.

Maternal Ethnicity

Due to the reliance on clinical and non-clinical group comparisons in the analysis of hypothesis one, equivalency of groups on variables other than exposure to domestic violence was very important (Mohr, et al., 2003). As such, it is important to note that mothers in the clinical sample were more ethnically diverse than mothers in the non-clinical sample. However, clinical mothers of Euro-Canadian descent were no more likely than non Euro-Canadian mothers to state that one or both children were cruel to animals. In fact, the ethnic diversity within the clinical sample was reflected among the mothers who reported their children were cruel to animals. Within the clinical sample 62% of mothers were of Euro-Canadian decent, 30% were Aboriginal, and 6% were ethnically mixed. Of the mothers who reported their children were cruel to animals in the clinical sample 69% ($n = 9$) were of Euro-Canadian decent, 23% ($n = 3$) were Aboriginal, and 7% ($n = 1$) were ethnically mixed. Therefore, it may be argued that maternal ethnicity did not affect the reporting of animal cruelty among mothers in the clinical sample.

In the non-clinical sample, although 11% of mothers were Aboriginal, and 2% were each Asian, African-Caribbean, and East Indian respectively, 100% of mothers ($n =$

6) who reported their children were cruel to animals in this sample were of Euro-Canadian descent. It is difficult to draw conclusions from these small frequencies. In future studies with larger sample sizes, it would be interesting to note if ethnic differences exist between mothers who do and do not report their children are cruel to animals in clinical and non-clinical populations.

Mediating Variables

The Impact of the Maternal Physical Aggression on Animal Cruelty

The fourth hypothesis predicted that children exposed to more severe physical domestic aggression would be significantly more likely to engage in animal cruelty than children exposed to less severe physical domestic aggression. This hypothesis was not supported. This finding was surprising as 67% of mothers indicated they had been physically aggressive toward a male domestic partner in the present study and Ridley and Feldman (2003) have reported that relationships with female-to-male aggression are characterized by poorer resolution of problems within the relationship and more distance after arguments. As well, they reported that constructive communication was 40 to 50 times less likely to occur in these relationships and male-to-female unilateral verbal aggression and mutual verbal aggression between partners was more frequent. As female-to-male physical aggression was significantly and positively correlated with female-to-male verbal aggression and passive-aggressive/indirect tactics usage in the present study, it would be expected that such increases in negative domestic conflict would impact the outcome of children exposed to violence. Indeed, exposure to female-to-male physical aggression was significantly and positively correlated with a host of other child problem behaviours on the CBCL (e.g., physically attacks others, destroys own things, has bad

friends, stores things, stares blankly, cheats, and gets hurt a lot). Yet when maternal physical aggression was coded as 0 (*mother was not physically aggressive*) and 1 (*mother was physically aggressive*) a larger percentage of non-violent mothers (17.2%, $n = 5$) as compared to violent mothers (11.5%, $n = 7$), reported child animal cruelty (however, this finding was not significant).

It may be that maternal physical aggression mediates the outcome of children exposed to domestic violence, but may not mediate the outcome of animal cruelty among children specifically. Yet interestingly, all three of the mothers in the clinical sample who reported both of their children were cruel to animals also indicated they had been physically aggressive toward a male domestic partner. Further studies with larger sample sizes are needed to determine the relevance of these observations in regard to animal cruelty. Based on the sample size in the present study, female-to-male physical domestic aggression was not a significant mediator of animal cruelty in children.

The Impact of Verbal Aggression and Passive-Aggressive Techniques on Animal Cruelty

Hypotheses five and six predicted that children exposed to more severe maternal domestic verbal aggression and more frequent use of passive-aggressive behaviours would be significantly more likely to engage in animal cruelty than children exposed to less severe verbal aggression and less frequent use of passive-aggressive behaviours respectively. The findings indicated that severity of maternal verbal aggression and passive-aggressive behaviours were significant predictors of animal cruelty. However, contrary to the proposed hypotheses, children exposed to more severe maternal verbal aggression, as well as to more frequent use of passive-aggressive techniques were significantly less likely to engage in animal cruelty.

Drawing on social learning theory, it may be that mothers who used more verbal aggression and/or passive-aggressive techniques with a domestic partner had children who modeled these indirect behaviours on humans and non-human beings rather than more overt physically aggressive actions. That is, such children may have learned to model their mothers by reacting to conflicts and problems in their lives with non-violent methods. This modeling may have also extended to the dealings of such children with animals. Indeed, children who were not cruel to animals in the present study were significantly less likely to be physically aggressive toward other people $\chi^2(1, n = 91) = .6349, p = .012$. However, this point is difficult to argue without knowledge of maternal definitions of animal cruelty. Some mothers may have included verbal aggression and passive-aggressive techniques in their definition of animal cruelty when assessing their children.

Within social learning theory, the fourth function involved in modeling is that of motivational process. That is, the rewards or punishments others receive for their actions influence if and how a child will model those actions. It may be argued that children who observed their mother defending herself against male-to-female conflict and aggression, in the context of a home that included domestic violence, learned that using aggression against others had consequences. As such, children exposed to domestic violence and severe/frequent maternal use of verbal aggression and passive-aggressive behaviours in retaliation to that violence may have internalized the violence they were exposed to but not expressed that behaviour overtly for fear of retaliation.

The Impact of Maternal Avoidance of Domestic Violence on Animal Cruelty

Hypothesis seven predicted that the children of mothers who avoided conflict with their domestic partners would be significantly less likely to engage in animal cruelty than the children of mothers who avoided conflict less. This hypothesis was not supported. Yet this subscale may be important to include in future studies about the effects of domestic violence on the mother-child relationship. While the subscale did not have a significant impact on animal cruelty, increased maternal conflict avoidance was significantly correlated with child reports of less hostile and aggressive mother-child relationships, as well as less rejecting mother-child relationships overall as reported by children. That is, children of mothers who reported more frequent conflict avoidance with a domestic partner indicated better relationships with their mothers than the children of mothers who avoided domestic conflict less. This meaning of the finding is difficult to discern without further information about the parenting style of mothers who did and did not avoid domestic conflict. It may be that mothers who avoided conflict with a partner felt more in control of the aggression that occurred in the relationship. In turn, greater levels of control over the violence they were experiencing improved their ability to cope and to parent. It may also be that mothers who avoided conflict with their partner were successful in reducing the level of violence their children were exposed to. Yet, there were significant positive correlations between maternal conflict avoidance and maternal use of physical aggression, verbal aggression, and passive-aggressive techniques, indicating that children exposed to more maternal conflict avoidance were also exposed to more severe female-to-male aggression. Clearly, further research is needed to better understand this finding.

The Impact of the Proportion of Lifetime Exposure to Violence on Animal Cruelty

The eighth hypothesis predicted that children with longer lifetime exposure to domestic violence would be significantly more likely to engage in animal cruelty than children with shorter lifetime exposure. This hypothesis was not supported. As suggested by Cummings (1998) children exposed to domestic violence over a long period of time may begin to view their surroundings as threatening. Such fears may influence children to lash out at siblings, peers, and possibly pets.

However, in the present study, many children were not living in domestically violent homes at the time of data collection. As well, the duration of time that had elapsed between living in a violent home and data collection was unequal across families. These uncontrolled factors may have had a significant impact on the lack of findings regarding this variable. Indeed, Emery (1996) has noted that children whose mothers left a violent relationship had fewer behaviour problems. Holden, Stein, Ritchie, Harris, and Jouriles (1998) followed mothers who had experienced domestic violence for six months and concluded that time away from the violent home had positive effects for children exposed to domestic violence. These findings were replicated by Rossman (1999) as well.

To better understand the relationship between proportion of lifetime exposure to domestic violence and animal cruelty in children, it is suggested that future studies examine the length of time children were exposed to domestic violence, but carefully control for the length of time between child exposure and data collection. However, it should also be noted that the impact of this variable on animal cruelty was very small, as well as non-significant. While the proportion of lifetime exposure to domestic violence may mediate the outcome of children across some variables, it is possible this variable

does not mediate the behaviour of animal cruelty in children specifically.

The Mother-Child Relationship and Animal Cruelty

The ninth hypothesis predicted that children exposed to domestic violence who reported more rejecting mother-child relationships would be significantly more likely to engage in animal cruelty. This hypothesis was not supported. Hypothesis ten predicted that children exposed to domestic violence who reported more hostile mother-child relationships would be significantly more likely to engage in animal cruelty. This hypothesis was also not supported. These findings were surprising as much research has shown that mother-child relationships often suffer as a result of the stress, depression, and/or anxiety experienced by maternal caregivers in violent partner relationships (Jaffe et al., 1990; Holden & Ritchie, 1991). As well, research has found that a positive mother-child relationship was the best buffer to prevent children exposed to domestic violence from developing externalizing behaviour problems (O'Keefe, 1994).

Yet, as noted by Lynch (2003) the interrelationship between domestic violence, parenting, and child outcome is very complex. Lynch interviewed 50 women and their children from violence shelters and from the community and examined the parent-child relationship as a resiliency factor. She found the severity of domestic violence mothers had experienced predicted the quality of maternal parenting. In the present study, data were not available to determine if the severity of domestic violence mothers had experienced predicted the quality of maternal parenting. A single item indicating whether mothers had received medical treatment for domestic violence was not correlated with the quality of maternal parenting (as evidenced by the Total PARQ Score) or animal cruelty.¹¹

¹¹ Fifty-five percent of mothers in the present study reported they had received medical treatment for domestic violence.

Yet, as illustrated in Table 5, increased maternal avoidance of conflict was correlated with the quality of maternal parenting. Based on this finding and the findings of Lynch (2003), future research should consider the impact of the severity of domestic violence experienced by mothers when examining the quality of the mother-child relationship as a possible mediator of child outcome for children exposed to domestic violence.

Lynch (2003) also found that maternal health mediated the relation between domestic violence and maternal parenting. A requirement in the present study was that all clinical mothers had to have previously received counseling for domestic violence. These counseling experiences may have lessened the stress, depression, and anxiety of mothers who had experienced domestic violence. This may have in turn improved their health and the quality of their parenting, confounding the mediating effects of the mother-child relationship on animal cruelty among children exposed to violence.

Lynch noted that a mother's position in the Stages of Change model (Prochaska, DiClemente, & Norcross, 1992) regarding the stay-leave decision-making process was a significant predictor of child outcome. Lynch reported the children of mothers in the Maintenance stage had the most positive outcomes. This stage implied mothers had left their violent domestic partner and were maintaining that change. In the present study, many of the mothers had left their violent domestic partner at the time of data collection and would have therefore been in the Maintenance stage. As well, research has documented that mothers have fewer depressive symptoms and parenting stress after leaving a violent domestic relationship (Emery, 1996; Holden et al., 1998). Mother-to-child aggression has been found to decrease over time as well (Giles-Sims, 1985; Holden et al., 1998). As this predictor was significant at the $p < .10$ level, it is suggested that the

size of the current sample was not large enough to detect the influence of the mother-child relationship predictors on animal cruelty.

Strengths of the Present Study

Sampling Strengths

The present study incorporated a number of strengths. Although not ideal, the community-based sample used in the present study can be considered a strength of this research. In past research, there has been an overuse of shelter samples, clinical settings such as social agencies, samples of children exposed to violence without a comparison group, and adult-self reports (Duncan & Miller, 2003; Mohr et al., 2003). As argued by Mohr, the use of shelter samples threatens the external validity of the research because families in shelters differ from community-based families in a number of ways. For example, such samples draw on more severe cases of domestic violence (Carlson, 2000). However, as noted by Mohr et al., selection bias may still exist in the present study as families who did not volunteer to participate may differ from those who did.

Within the animal cruelty literature, the use of community and comparison samples is rare. Within the literature concerning children exposed to violence, the use of community samples and comparison groups has been more common. However, many do not fully report the demographic differences between the samples (Mohr et al., 2003). The present study attempted to match the clinical and comparison sample on a number of important demographic variables. The samples were similar concerning maternal age, income level, marital status, and child age. However, the two samples differed significantly in terms of maternal ethnicity and educational attainment.

Still, the diversity of the both the clinical and non-clinical sample is a strength of

the present study and adds to the external validity of the study. As noted by Mohr, et al. (2003) the majority of research examining exposure to domestic violence in children has focused on elementary-age children. Children in the present study ranged in age from 5 to 17 years. As well, although the majority of families included in the present study were Euro-Canadian and living below the poverty line, the clinical and non-clinical groups were made up of families representing a wide range of income levels and cultural groups. As noted by Saunders (2003) "few studies in the child violence literature have examined changes in predictor-outcome relationships due to different levels of moderator variables such as gender or racial and ethnic identification" (p. 359). In the present study, the age and gender of children were examined in relation to the outcome variable were examined. As well, ethnic differences between mothers who reported children to be cruel or not cruel to animals were examined.

Strengths of the Data Collected

Reports of animal cruelty in the present study were current rather than retrospective. The overuse of adult retrospective self-reports to investigate animal cruelty in childhood has been a frequent critique of research in this area (Ascione, 1993). Duncan and Miller (2002) suggest that using current rather than retrospective reports, as in the present study, help control for the unreliability of trying to recall behaviours that took place decades before.

The reliability of the data collected was increased by use of a multi-informant approach. As noted by Sternberg, Lamb, and Dawud-Noursi (1998) it is important to gain information from both mothers and children to assess the effects of domestic violence on children. As well, participants were also asked survey questions in one-on-one interviews

with trained research assistants rather than filling out the surveys on their own. This personal survey format neutralized literacy rates differences across mothers and children as measures were read to participants by the assistants. As well, assistants were able to answer questions about items that were ambiguous to participants as each survey progressed.

As well, the study examined variables that might mediate exposure to domestic violence and animal cruelty in children. While the severity of male-to-female violence may have yielded important information about animal cruelty among children exposed to domestic violence, the examination of the severity of exposure to female-to-male negative conflict and violence on children in the present study was an important contribution to the research literature as there is paucity of research investigating this variable (Ridley & Feldman, 2003).

Limitations and Future Research

Measurement Inaccuracy

The present study has several limitations which naturally lead to a number of suggestions for future research. The first set of limitations concerns the measurement and definition of animal cruelty. In the present study, animal cruelty was assessed by a single dichotomous item and was reported by mothers. As noted by Felthous and Kellert (1987) animal cruelty is often solitary and secretive behaviour. Mothers may not be aware of their children's behaviours toward animals or they may not want to admit to themselves or others that their children commit such behaviours. Indeed, mothers may have wanted to present their children in socially desirable ways, and may have not indicated animal cruelty when it was present. Offord, Boyle, & Racine (1991) investigated maternal and

child reports of animal cruelty in a non-clinical sample of children (aged 12 to 14). While maternal reports of animal cruelty suggested a prevalence of 2%, children's self-reports indicated a prevalence of 10%. In the present study, maternal reports of animal cruelty suggested a prevalence of 17.39% in the clinical sample, and 6.67% in the non-clinical sample. It is realistic to speculate that maternal reports of child animal cruelty in the present study may underestimate the prevalence of the actual behaviour in both the clinical and non-clinical samples. If children exclusively had been asked about their behaviour toward animals, it also would have been likely that some children would have responded in socially desirable ways (i.e., indicating their treatment of animals was not outside the socially acceptable for their culture and subculture). A preferred approach, and one that is suggested for future research, is to obtain several reports, including mothers, fathers, teachers, siblings, peers, and the children themselves.

Mothers were also not presented with a clear definition of animal cruelty before deciding whether their children were or were not cruel to animals. This is a major shortcoming of this research. However, it was better than providing parents with a definition of animal cruelty that did not consider cultural reflexivity within the definition. In the present study, mothers were able to decide whether or not their children were cruel to animals based on their own definition of that behaviour. It may be argued that a parent is the most important and prominent figure in the social composition of a child's world (Nash & Calónico, 1996). As such, a mother's personal definition of animal cruelty may more appropriately determine whether a child's treatment of animals falls outside what is acceptable within the microsystem of that individual family. The problem in the present study was that it was unknown how mothers defined the behaviour. Mothers in the

clinical sample were significantly more ethnically diverse than mothers in the non-clinical sample, and it is unknown how these cultural differences may have influenced personal definitions.

Animal cruelty is currently defined in the majority of literature as “a socially unacceptable behaviour that intentionally causes unnecessary pain, suffering, or distress to and/or death of an animal” (Ascione, 1993, p. 228). However, for this definition to be useful, it needs to specify what socially unacceptable behaviour is. For example, mothers provided this definition would be unsure whether to rate their children’s behaviour according to their own beliefs or that of the larger society. Asking mothers to provide a subjective definition of animal cruelty within the subculture of their family and ethnic belief system would add to a depth of a qualitative analysis of childhood animal cruelty. Yet, such an approach might make quantitative data analysis difficult. Therefore, important ground work for quantitative researchers interested in the topic of animal cruelty should be to first examine how animal cruelty is defined among various subcultures of a population. It would be expected there is a threshold in every culture at which pain, suffering, or distress inflicted upon an animal becomes unnecessary (i.e., unacceptable). In every culture, there must a finite scale ranging from necessary to unnecessary infliction of suffering on animals, so that a meta-scale that represents all cultural scale clusters is possible. This approach, similar to that of Smorti, Menesini, and Smith (2003) in their work on cross-cultural parental definitions of child bully behaviour, might create a consistent standard for use across future studies.

Another limitation concerning the measurement of animal cruelty was that it was based on a one-item measure from the Child Behavior Checklist. Achenbach (1991)

analyzed the covariance for the items in the problem scale of the CBCL and found that referred children did score significantly higher on the 'cruel to animals' item than demographically matched non-referred children. In fact, this item made up 4% of the variance accounted for by the referral group status, suggesting that 'cruel to animals' may have some ability to distinguish children who are experiencing behavioural and emotional problems from children who are not. In the present study a standardized or even frequently used multi-item measure of animal cruelty would have been a preferred data collection instrument to a one-item measure. Guymer et al. (2001) have piloted an instrument entitled *Children's Attitudes and Behaviors towards Animals (CABTA)* that may hold promise as a measure of child animal cruelty. Although it does not include qualitative information about children's behaviour, the measure holds promise as a reliable and valid tool for detecting animal cruelty in children and may be useful for future research in this area.

There are other measurement issues in the present study that could be improved upon. For example, the severity of female-to-male violence was used as a predictor of animal cruelty in children. It is suggested that future studies examine the severity of violence perpetrated by both domestic partners rather than just one partner. The severity of male-to-female violence may also be an important factor mediating the relationship between exposure to domestic violence and animal cruelty in children. In addition, the sole use of the CTS to measure the nature and extent of domestic violence may be problematic, as the CTS does not measure malevolent acts not motivated by conflict (Mohr, 2003). Mohr reported that 81% of studies in the domestic violence literature used the CTS. The rest used non-standardized measures or relied on legal reports. It is

suggested that future studies further investigate familial experiences of domestic violence with greater depth and dimension. Rather than providing one family member with a measure to complete, qualitative interviews with mothers, fathers, and children about the experience of living in a violent home would provide needed depth to this literature base and uncover abusive experiences that conventional measures may not include.

Sampling Limitations

In the present study, a second set of limitations concern the sample of mothers and children who volunteered to participate. First, the present study did not address whether children exposed to domestic violence also experienced other forms of child abuse. Research suggests that children who experience more than one form of violence are at much greater risk for maladjustment (Rutter, 1997). Exposure to domestic violence and physical child abuse are known to overlap in families (Appel & Holden, 1998). This was described as the "double whammy" by Hughes (1989) who reported that children who experienced both were functioning at lower levels than comparison children on both internalizing and externalizing type behaviors. In fact, it is common for children to have been the victims as well as the witnesses of several types of family violence on multiple occasions (Saunders, 2003). As noted by Mohr et al. (2003), "it has become increasingly evident that most negative child and family outcomes are likely to result from multiple, frequently co-occurring, reciprocal, and interacting risk factors, contexts, systems, causal events, and processes" (p. 266).

In the present study, it may be that children in the clinical group were more often victims of abuse than children in the non-clinical group and this double exposure resulted in greater symptomology as reported by their mothers, including animal cruelty. The

results of DeViney, Dickert, and Lockwood (1983) suggest children who experience child abuse are more likely cruel to animals. Findings by Ascione (1998) and the present study suggest children exposed to domestic violence are also more likely cruel to animals. Therefore is expected that the co-occurrence of both child abuse and child exposure to violence would also be related to child animal cruelty. This would be an important direction for future research. In addition, it is also important to better understand the environmental factors that protect children from adverse life experiences and lessen the risk of poor developmental outcomes (Mohr, 2003). For example, recent findings by Flouri and Buchanan (2003) suggest that even after a father's separation from the family, the quality of the father-child relationship is correlated with children's externalizing behaviour problems. Although the father's role is frequently ignored in research concerning children exposed to domestic violence, future research should also consider the influence of the father or other significant adults on child outcome. More broadly, it is suggested that future studies on child animal cruelty examine co-occurring risk and protective factors in the family.

Another sampling limitation concerned whether or not there were pets in the home. The importance of this information is based on the findings of Ascione (1998) who documented that cruelty towards pets in the home was more likely in domestically violent homes. He found that 71% of women with children exposed to domestic violence reported that their partners were cruel to animals within the home. It may be that children in the clinical sample were modeling behaviour they saw in their home (i.e., adults being cruel to animals), rather than transferring the inter-spousal violence they witnessed to animals. It is suggested that future research include a careful inventory of pets in the home as well

as domestic animals kept near the home and a determination of the treatment of those animals by adults in the home

A further sampling issue concerned the differences in education and ethnicity between the clinical and non-clinical families. There were significantly fewer mothers who had completed more than 12 years of schooling in the clinical sample. However, mothers who reported their children were cruel to animals in the clinical sample were no more or less educated than mothers who reported their children were cruel to animals in the non-clinical sample. There were also significantly more mothers of non Euro-Canadian descent in the clinical as compared to the non-clinical sample. However, clinical mothers of Euro-Canadian descent were no more likely than non Euro-Canadian mothers to state that one or both of their children were cruel to animals. Still, it is suggested that future research include both an ethnically diverse clinical sample as well as a matched comparison sample of participants.

A final limitation involved the urban bias of the sample. All participants in the present study were currently living in a mid-sized western Canadian city. Research by Logan et al. (2003) suggests there are important differences between rural and urban women's experiences of domestic violence. Although preliminary, the results of that research indicate rural women in violent relationships receive less social support, experience more physical violence, and are in worse overall health than urban women in violent relationships. In terms of animal cruelty, the hunting and farming activities that take place in rural communities result in socialization experiences that are very different for rural dwelling children as compared to urban children. Therefore, the results of the present study should not be generalized to rural dwelling communities. It is suggested that

future studies ask families how long they have lived in an urban community, as well as recruit comparison groups of participants from rural communities in order to examine rural versus urban differences.

Statistical Limitations

The next set of limitations concern the lack of statistical power to detect effect sizes related to animal cruelty. As prevalence rates for animal cruelty within populations of children are generally low (below 4%), sample sizes of at least one hundred participants are recommended to allow researchers greater statistical test choice options and to allow for minimal power to detect significant differences (Ascione, Kaufman & Brooks, 2000). In the present study, although the sample size was very close to one hundred, prevalence of animal cruelty in the non-clinical sample was too low to examine if the mediating variables in the clinical sample (i.e., quality of the mother-child relationship) would have influenced animal cruelty in this sample as well. As well, several statistical tests involving the use of frequency counts could not be used due to the low frequency of animal cruelty. As this study was exploratory in nature, logistic regression models were used that overfit the data, and such use may have induced statistical significance where it did not exist. It is suggested that future studies on animal cruelty in children draw upon larger sample sizes to ensure a higher frequency of animal cruelty.

Implications for Practice

Given the limitations within the present study and keeping in mind the findings are exploratory in nature; certain implications for practice can be tentatively suggested. As clinical families are more likely to seek mental health treatment, and research has documented that clinical children are more likely to be cruel to animals, it is important for

therapists to become familiar with this behaviour. As clinical treatment enhances the positive effects of the passage of time for children exposed to domestic violence (Rossman, 2001), it may be that clinical treatment may help children who are cruel to animals.

Achenbach (1991) reported the item 'cruel to animals' on the CBCL had some ability to distinguish children who were experiencing behavioural and emotional problems from children who were not. The findings of the present study suggest that children who are cruel to animals are significantly more likely to be reported to have other internalizing and externalizing behaviours on the CBCL. As such, it may be that animal cruelty in children is a clinical marker for multiple problems that children are experiencing. Still, it is important to recognize that patterns of chronic behaviour may be more significant than isolated events (Loeber, Keenan, Lahey, Green, & Thomas, 1993). Loeber, et al. noted that while a single assessment of animal cruelty did not differentiate boys with various disorders on the DSM, over a three-year period, animal cruelty did significantly distinguish boys with conduct disorder from boys with oppositional defiant disorder.

However, it is important for therapists to go beyond the DSM to examine the importance of animal cruelty as something more than a symptom of a larger disorder. As the findings of the present study suggest that animal cruelty is more likely to be present among children in families experiencing violence, therapists working with children cruel to animals without a reported history of family violence should conduct a thorough family assessment to determine if violence is indeed present in the home. As noted by Ascione (2001) animal cruelty related to the experience of abuse may suggest children have

internalized lessons of power and control and professional, clinical intervention is warranted. Therapeutic farms such as Green Chimneys in New York have had success abating the behaviours of children cruel to animals by involving them in the rehabilitation of abused animals. The children see the aftermath of animal cruelty, the suffering of the animal, but did not impose the violence. As such, it is believed they do not gain negative feelings of power from this interaction. It is believed that these experiences rebuild children's empathy (Ross, 1999). As well, children are exposed to adult models of positive human-animal interaction. Such treatment programs hold promise for clinicians working with children cruel to animals. As stated by Ross, "it is no secret that animals heal the children in our care" (p. 367).

Yet, it is important to recognize that animal cruelty may be a normative part of development for some children (Arluke, 2003). As well, the phenomena of *equifinality* may apply to animal cruelty. That is, many paths or experiences may lead to the same outcome (Rossman, 2001). While research has focused on violence in the lives of children as a predictor of animal cruelty, other yet unknown experiences may also be associated with the behaviour. Clinicians should attempt to learn more about parental norms, rules, and instruction concerning the treatment of animals within the families of children who are cruel to animals. As well, cultural and geographic (i.e., rural vs. urban) considerations should be taken into account in order to assess the origins of the behaviour.

CHAPTER 6: CONCLUDING COMMENTS

In conclusion, the incidence and complexity of animal cruelty among children exposed to domestic violence, and to family violence in general, has been inadequately documented in the research literature. The results of the present study suggest that children exposed to domestic violence are more likely to engage in animal cruelty than children not exposed to violence. From a social learning theory perspective, these children may have been modeling the violence they were exposed to on animals. From an ecological systems viewpoint, exposure to violence at the microsystem level may have influenced some children to view their environment as more threatening or unpredictable. Indeed, children exposed to domestic violence were more fearful and unsure of their environment (i.e., they were more likely to feel unloved, be suspicious, and fear animals and places) than children who were not exposed to violence. These fears may have influenced children exposed to domestic violence to misinterpret signals from the animals in their environment as threatening and lash out.

Children reported to be cruel to animals did not differ in age or gender from children who were not reported cruel to animals. However, children cruel to animals and exposed to violence were older than children cruel to animals and not exposed to violence. This finding lends support to the typology developed by Ascione (2001) who suggested that animal cruelty among younger (preschool and early elementary) children may be exploratory or curious play, while animal cruelty among older children may be symptomatic of psychological disturbances related to a number of factors including the experience of violence. Within the sample of children exposed to domestic violence, the results indicated that proportion of lifetime exposure to domestic violence, the quality of

the mother-child relationship, and maternal physical domestic aggression were not significant predictors of animal cruelty. However, children exposed to more severe maternal verbal aggression and more frequent use of maternal passive-aggressive techniques were less likely to be reported to be cruel to animals. From a social learning theory perspective, these findings may suggest that children who observed their mothers' defense against male-to-female conflict and violence may have internalized that aggression against other beings, including animals, was not without consequence.

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