DOES FAMILY CONTEXT AND PERSONAL BACKGROUND CONTRIBUTE TO VIOLENT BEHAVIORS LIKE ANIMAL CRUELTY?

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Sara W. Collis, B.S.

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Animal cruelty is a frequent, yet underreported occurrence in the United States. Lack of legislation and policy regarding animal protection has led to a low understanding of the importance of detecting and preventing animal cruelty. However, research in many fields reveals that animal cruelty can be a predictor of sexual abuse, domestic abuse and other co-occurring violence, suggesting that if animal cruelty can be better identified or even prevented, violence towards humans can be lessened. Unfortunately, research about the factors that make an individual more likely to commit animal cruelty is limited, and data regarding these factors is scarce, making correlation studies difficult. If there were a greater understanding about what personal and family context factors in one’s youth increase the likelihood to commit animal cruelty or other severely violent crimes, effective prevention and rehabilitation policies could be implemented to lessen any probabilities for violence. This study looks at survey responses from the *Survey of Adults on Probation* which was developed for the Bureau of Justice Statistics by the United States Department of Justice in 1995. This survey provides data regarding the background and youth experiences of individuals who have been arrested for various offenses, including animal cruelty, sexual assault and aggravated assault. By analyzing the relationship between one’s background and the probability to commit severe violence we can begin to isolate personal and family context factors that increase likelihood to commit animal cruelty. This study
ran multiple regression models and identified that factors such as being raised by one parent, living in a foster home, being sexually or physically abused as a child and using drugs can all lead to a higher probability of committing severely violent crimes, including animal cruelty. This has implications for a number of policy initiatives, including more consistent cross reporting among agencies and organizations as well as preventative and rehabilitative education for people in a position to detect and help at-risk youth.
The research and writing of this thesis is dedicated to my friends and family who supported me along the way and to the many wonderful animals that have been in my life.

Many thanks,
Sara W. Collis
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INTRODUCTION

Animal cruelty first made its way into the public vernacular in the late 1800s when the American Society for the Prevention of Cruelty to Animals (ASPCA) was founded. Since the introduction of the ASPCA, other advocate and nonprofit groups have grown and spread across the United States, sharing the mission of giving animals a voice and eradicating animal cruelty. Along with the ASPCA, groups such as the Humane Society and People for the Ethical Treatment of Animals (PETA) operate in aggregate to oversee the protection of animals; there is no centralized federal department with a similar mission to support them. Each nonprofit organization has state and local chapters that handle an inflow of animal cruelty cases, which can range from abandonment and neglect to torture, beating, stabbing and shooting. Despite multiple organizations and local chapters, these nonprofit groups deal with an overwhelming amount of work—as many as 17 cases of animal cruelty per day (Arluke & Luke, 1997). As a result, many cases go unreported, unanswered and unpunished (Muscari, 2004).

Lack of animal cruelty investigation is detrimental, of course, to the care and well-being of the mistreated animals, but is also highly detrimental to the local and national society in which the cruelty takes place. The reason is straightforward: Animal cruelty is a well-documented and well-researched red flag for concurrent and future violence towards humans (DeGue & DiLillo, 2009). Animal cruelty has been found to have a positive correlation to domestic violence, child abuse, murder and even serial killing. For example, a study completed in 1997 found that 54% of women who were victims of domestic abuse also stated that their abuser had hurt their pet (Ascione, 1997). Another study found that animal cruelty was present in 80% of families under review for child abuse (DeViney, Dickert, & Lockwood, 1983). And a 1997 report shows that
38% of people who “committed violent crimes against animals also had criminal records for violent” crimes against humans (Arluke, et al., 1997, p 8). Finally, an analysis of 354 serial killers found that almost a quarter of them had admitted to committing animal cruelty (Hensley, 2003). Although other factors contribute to a violent personality, the research on violent human behavior pinpoints animal cruelty as a common thread. Animal cruelty is a piece of the puzzle that can be actioned against—it can be recognized, reported and punished through relevant policies. While the public at large and national policy makers may not be aware of the implications of animal cruelty, animal rights advocates, early childhood educators, psychologists, and sociologists alike, are well versed. Research in these fields indicates that by ignoring animal cruelty we are ignoring predictors of preventable violence against humans.

There are at least two related reasons why animal cruelty is an often overlooked national policy issue. One is that there is no single definition or established threshold for what constitutes animal cruelty. While some may believe hitting a dog is acceptable, others may not, and with no consistent legal definition across the country, it is difficult to educate the public on acceptable behavior. Although there is no national or legal definition, academics who focus on animal cruelty do have a definition, relying on that proposed by Frank Ascione, professor and PhD (Faver, 2010, p 366). Ascione defines animal cruelty, also called animal abuse, as “socially unacceptable behavior that intentionally causes unnecessary pain, suffering or distress to and/or the death of an animal” (Ascione, p 228). This wording “socially unacceptable” raises the second reason why animal cruelty is often overlooked (Ascione, p 228). Legal regulation of animal cruelty cases is inconsistent, which makes “socially unacceptable” difficult to define (Ascione, p 228). Laws regarding animal cruelty vary by State; not all States regulate animal cruelty as a felony. Moreover, companion animals are often looked at as “property” rather than “living
beings” (Muscari, 2004, p 20). So when someone stabs and burns a neighbor’s pet, the case is relegated to a conversation about property damage rather than physical violence. This nuance contributes to the belief that animal cruelty is not worthy of judicial and political attention. And due to the inconsistency in the definitions and laws, perpetrators who are taken to court rarely receive guilty verdicts, and even when they do their sentencing is frequently light and dismissive. For example, Northeastern University analyzed 268 adjudicated cases of animal cruelty and found that only 44% resulted in guilty verdicts, and only 14% of these verdicts ended in served jail time (Arluke, et al., 1997).

But decades of research suggest that misunderstanding animal cruelty puts individuals and the public in continued danger. Research has consistently found a positive correlation between animal cruelty and either concurrent or future violence towards humans. The research shows two things: sometimes the animal abuser is committing violence against humans, and sometimes the animal abuser has been a victim of violence themselves. In both situations, recognition that animal cruelty is a marker for human violence could save lives.

Generally speaking, the research that has been done to date categorizes animal cruelty in three ways. These three ways each contribute to public policy in their own manner, and each category also supports the other categories’ findings and recommendations.

1. The first category, which is well researched with little disagreement, suggests that animal cruelty can be a positive predictor for child abuse and domestic violence. In this category, data shows that individuals who commit animal cruelty are either victims of child abuse, or are being exposed to domestic violence (Currie, 2006; DeGue & DiLillo, 2009). The analyses surrounding this data state that children exposed to violence in their home turn
to animal cruelty as an emotional or physical outlet (Faver, 2010). This category offers many implications for improvements in childhood education and development, as well as domestic violence policies. Although there is concern for animals, the greater concern in these cases is for the humans involved. As a result, academics support the need for cross reporting between veterinarian clinics, animal cruelty nonprofits, law enforcement, teachers and social workers, so that cases of animal cruelty can be used to deter concurrent human violence (Muscari, 2004).

2. The second category suggests that animal cruelty can be a positive predictor of other concurrent violence against humans. In this category, the data show that individuals who commit animal cruelty are often simultaneously hurting humans (i.e. spouse abusers, rapists, and murders). This second category is also well researched, and generally academics believe that perpetrators in this category commit animal cruelty as an outlet for their impending aggression and criminal intent (Wright & Hensley, 2003); they may also have related psychological factors (Luke, 1997). Academics in this area push for stricter regulation, more consistent definitions, and a judicial system that recognizes animal cruelty as a serious felony (Wright & Hensley, 2003; Luke, 1997). They also advocate for rehabilitation and education for these criminals (Wright & Hensley, 2003; Luke, 1997), such as the process that Michael Vick (an NFL Quarterback convicted of dog-fighting) underwent.

3. The third category suggests that animal cruelty as a child can be a positive predictor of future violence as an adult (Overton, 2012). In this category, studies generally examine whether children who commit animal cruelty later become violent criminals in adulthood. This third category shows conflicting evidence, with some research finding that animal
cruelty is only a bi-product of family violence, and not a predictor of adult violence (Duncan, 2002; Flynn 1999; Miller & Knutson, 1997). Other research shows that committing animal cruelty as a child can be a positive predictor of adult violence, including serial killing (Gleyzer, et al., 2002; Hensley, et al., 2009; Tallichet & Hensley, 2004; Overton, et al., 2012; Merz-Perez, et al., 2001). This category suggests implications ranging from childhood education policy to criminology best practices. Findings in this third category suggest long term tracking of criminals and intensive rehabilitation programs. It also demonstrates the importance of early childhood education and social constructs, similar to the policy implications in categories one and two.

Across these categories, researchers study animal cruelty and the relationship it might have with violence towards humans. One area less studied includes the contributing family context factors that may make an individual more likely to commit animal cruelty, such as education level, the presence of parents during youth, living in foster care and parental drug or alcohol abuse. Other factors that have been shown to play a role in animal cruelty and other forms of violence (e.g. sexual abuse as a youth, drug use, and mental health disorders) may be exacerbated by these family context factors. Understanding how these factors interact could aid in designing the early childhood education programs, criminal rehabilitation programs and legal proceedings often discussed in the research to date.

For this reason, this present study augments existing research by analyzing the impact of background variables on the likelihood to commit animal cruelty and other violent crime. Relying on a data set not previously analyzed in this field of research, the study examines
questions such as: Is the background of an individual correlated with the likelihood to commit violent crime, including animal cruelty?

Data come from the study *Survey of Adults on Probation, 1995* (Department of Justice, 1995), a project which surveys criminals in order to assess their criminal history and other factors. This study captures data on animal cruelty as well as other crimes, and includes family background and psychographic information for each individual.

This present study will support the field of animal cruelty research and add to the existing categories of study. This study expects to find that an individuals’ background, especially level of education, household income, and the presence of parents, will have a correlation with the likelihood to commit more violent crimes, including animal cruelty. Moreover, this study expects to find that individuals with less education, single parent or foster care households, and parents with substance abuse issues will have a greater likelihood of committing violent crimes than those with more education, two parent households and stable parental health. It also expects to find that mental health, sexual abuse suffered as a youth and substance abuse will further increase the likelihood to commit violence.

If these hypotheses hold true, then the policy implications are numbered. For example, childhood education that teaches empathy and communication with animals has shown positive results in overcoming violent tendencies (Faver, 2010). Expanding this education policy to focus on individuals with a greater probability of committing animal violence and other violent crimes, due to their background, adds a level of insight and detail to the policy initiatives. Additionally, if these hypotheses hold true, the results will support the need for better reporting and legislation
of animal cruelty cases, and more consistency in the national definition and value of animal cruelty.

In order to facilitate a more nationally respected “value” for animal cruelty cases, research needs to continue to demonstrate the connective tissue between animal cruelty and human violence. By demonstrating this connection, this research will not only provide a way of preventing human violence, it will also raise the profile of animal cruelty as a serious issue. In this way, many groups will be served. Criminologists and psychologists will have actionable insights from which to provide recommendations, and policy makers will have data to support the tools that are needed to act on these insights. Educators, social workers and law enforcement will be better informed and better supported in their mission. And finally, animal rights activists will be able to heighten awareness about the role of animals in our communities—and in support of their core mission mentioned earlier—to give animals a voice. This present study seeks to support the academics, professionals and policy makers in stemming violence against humans. It also hopes to advocate for the eradication of animal cruelty, and help groups like the ASPCA and Humane Society raise the flag that animal cruelty is not only “socially unacceptable,” but also a predictor of other violent behaviors.

**Literature Review**

Research on animal cruelty is quite robust and spans practice areas. Sociologists, psychologists, educators, law enforcement, criminologists, and animal activists have all taken an interest in the topic. While research from these varying groups uses different approaches and seeks different
policy outcomes, to date the majority of their studies, quantitative or qualitative, focus on determining whether animal cruelty is a predictive variable for violence against humans. Generally, animal cruelty studies from these varying groups can be segmented into three categories. The first category, which is mostly driven by practitioners concerned with social work and childhood development, looks at whether animal cruelty is predictive of human violence within a family. Here, practitioners are looking for ways to identify and prevent child abuse and domestic violence, outside of reported cases of family violence. The second category, researched mainly by criminologists, psychologists and law enforcement, looks at whether individuals who commit animal cruelty are also perpetrators of violence towards humans themselves. These practitioners are interested in ways of identifying violent human-beings and stemming their violent behavior and criminal action. Finally, the third category, which has been examined by all of the aforementioned practice areas, considers whether animal cruelty in childhood is a leading indicator for more progressive violence in adulthood. Here involved parties look for data that suggest that preventative and rehabilitative measures taken in childhood could deter future aggressive violent behavior.

Data results in the first two categories demonstrate consistent correlations—animal cruelty is positively correlated with violence towards humans. However, results in the third category are conflicting—some studies show a strong, positive correlation between childhood animal cruelty and progressive violence in adulthood, while others show no correlation (Wright & Hensley, 2003; Currie, 2006; DeGue & DiLillo, 2009; Duncan & Miller, 2002).
Warning Signal for Co-Occurring Family Violence.

Research in this first category asks whether children who commit animal cruelty are doing so because they are exposed to violence in their homes: Either child abuse or domestic violence among their parents. The research seeks to find a correlation between animal cruelty and domestic violence, such that identifying animal cruelty could be used to find and prosecute family violence (DeGue & DiLillo, 2009; Currie, 2006). Most research in this area shows a positive correlation, and suggests that animal cruelty can be used to red flag possible violence in a home (DeGue & DiLillo, 2009). For example, a study by Cheryl Currie (2006) analyzed a small sample of “47 mothers and 94 children” in order to assess whether there was a correlation between exposure to domestic violence and animal cruelty (Currie, 2006, p 427). Her results showed that children who had seen domestic violence were “significantly more likely to have displayed animal cruelty” behaviors (p=.03) than those not exposed to domestic violence (Currie, 2006, p 429). Her assessment suggested that children often turn to animal cruelty after witnessing domestic violence in their homes, noting that animal cruelty is a learned behavior (Currie, 2006). Currie indicated that a child who is under the duress of family violence will act out towards animals for two reasons: One, the child believes that violence is an acceptable behavior as displayed by their parent(s) or two, the child finds animal cruelty to be a “self-satisfying” feeling of power in an uncontrollable family dynamic (Currie, 2006). This positive correlation between animal cruelty and violence in the family, suggests that reports of animal cruelty can be used to detect violence in the home. As such, veterinary clinics, law enforcement and animal cruelty groups that report animal cruelty cases should be trained to recognize the presence of family violence and should be empowered to act to determine if family violence exists.
A second study by DeGue and DiLillo (2009), which reviewed reports about animal cruelty and domestic violence from 860 college students, saw similar results. DeGue and DiLillo (2009) found that students who had seen violence, specifically domestic violence, were “significantly more likely to report experiencing animal cruelty (as a witness or perpetrator)” than those who did not experience domestic violence (DeGue & DiLillo, 2009, p 1045-1046). Moreover, when their sample was limited to students who reported witnessing “severe domestic violence,” animal cruelty reports increased considerably suggesting that the more severe the domestic violence, the more likely an individual is to commit animal cruelty (DeGue & DiLillo, 2009, p 1046). They also found that witnessing and committing animal cruelty was a predictor of co-occurring family violence, with “each increasing the odds of child or domestic abuse by 1.5-2 times” (DeGue & DiLillo, 2009, p 1048). Overall, the study found that 62.2% of individuals who had committed animal cruelty had been exposed to child abuse or domestic violence, presenting key indicators for recognizing violence in the home (DeGue & DiLillo, 2009).

With consistent results both Currie and DeGue and DiLillo—among others (DeViney, Dickert & Lockwood, 1983; Faver & Strand, 2003; Flynn, 2000; Simmons & Lehmann, 2007; Carlisle-Frank & Flanagan, 2004)—present a strong case that animal cruelty can be used to identify child abuse or domestic violence. Training child educators, law enforcement, veterinarians and animal rights groups to report cases of animal cruelty can help to build a detection system for identifying family violence.
**Warning Signal for Co-Occurring Violence by the Same Individual.**

While the first category purports that people who commit animal cruelty are victims of human violence themselves, the second category of research argues that individuals who commit animal cruelty are also perpetrators of other violent acts towards humans. This category of research considers whether animal cruelty is just one type of violence in an individual’s overall violent behavior. Findings suggest that those who commit animal cruelty are simultaneously conducting acts of violence towards humans, and therefore, animal cruelty can be used as a predictive variable for the co-occurring crime.

For example, a study by MSPCA and Northeastern University—a partnership between an animal rights group, sociologists and law enforcement—found that animal cruelty can aid in detecting violence towards humans. Using twenty years of data from inmates in Massachusetts (1975-1986), researchers looked at ten years prior and ten post reported animal cruelty in order to identify whether animal cruelty showed a correlation with violence towards humans. The study found that people who committed animal cruelty were “5 times more likely to commit violent crimes against people” (Arluke, et al., 1997, p 8). In 268 cases among 153 individuals, the study identified useful criteria for profiling an individual’s likelihood to commit violence against humans (Arluke, et al., 1997). They found that animal cruelty perpetrators are generally younger (27% were under age 18 and 56% were under age 30), and similar to findings by Currie, that 97% were male (Arluke & Luke, 1997).

The MSPCA study offered a unique point of view regarding policies that might stem animal cruelty and prevent crimes against humans. By reviewing the inmates’ animal cruelty cases, the researchers found that fewer than 50% of the 268 cases resulted in a guilty verdict (Arluke, et al.,
Criminals that received guilty verdicts received only light fines and rarely served jail time (Arluke, et al., 1997). The weak sentencing exacerbates criminal tendencies, facilitating a continued path of violence for these individuals. Research in this category seeks policy outcomes that apply more consistent standards—for example, consistent legislation across states that requires reporting of animal cruelty cases, so that law enforcement can better track individuals with violent behaviors—and more severe penalties for acts of animal cruelty—for example longer prison sentences that would help deter violent tendencies.

**Warning Signal for Future, Progressive Violence by the Same Individual.**

The first two categories of research have shown consistent results study over study—animal cruelty is a predictor of co-occurring violence towards humans. The third category, however, takes a different approach. Rather than assessing whether animal cruelty can be used to flag the likely presence of other violence, this third category looks at whether animal cruelty is a leading indicator of future, and more progressive violence as an individual gets older. Thus, the third category seeks to answer the question: Is animal cruelty an input in the development of a violent personality?

Research shows conflicting results. Some studies demonstrate that animal cruelty is a positive predictor of future violence (see Gleyzer, et al., 2002; Hensley, et al., 2009; Merz-Perez et al., 2001; Tallichet & Hensley, 2004; Overton, et al., 2012); the most dramatic of these studies show that this correlation exists among the majority of serial killers. For example, a study by Ressler and Douglas (1988) found that over one-third of serial killers admitted to animal cruelty in their
childhood, and almost one-half admitted to it in their adolescence (Ressler, et al., 1988). Another study conducted in 2003, profiled 354 serial killers and found consistent reports of animal cruelty in their past (Wright & Hensley, 2003). A report by Wright & Hensley (2003), suggested that serial killers turn to animal cruelty in their youth for a similar reason as those children exposed to family violence: They choose to hurt animals because they are unable to effectively hurt humans that are creating feelings of aggression; animal cruelty acts as a testing ground for violent tendencies as a youth, which can later be applied to human victims in adulthood (Wright & Hensley, 2003).

But other research in the same field shows that animal cruelty is only a bi-product of an unstable childhood upbringing or childhood abuse (see Currie, 2006; DeGue & DiLillo, 2009), and not a predictor of adult violence. A report by Duncan and Miller (2002) which looked at the background variables for violent, adult criminals found that animal cruelty is not as significant a predictor for adult violence, as having an abusive family as a child. According to Duncan and Miller (2002), having an abusive family leads to children with an underdeveloped sense of empathy, which translates to violent behavior, both towards animals and humans.

**Contributing Variables to Animal Cruelty.**

Among all these categories, rarely are contributing factors, such as an individual’s background or upbringing, mentioned. Few studies discuss socioeconomic factors such as education level, household income, and employment status that may have an effect on likelihood to be a violent individual. Few studies mention family context factors such as number of siblings, number of
parents present, or whether parents are married or separated. The only discussion of the effect of such factors in regards to animal cruelty is found in Duncan and Miller (2002). Their descriptive analysis suggests that “an abusive family context may be a better predictor of adult violence than childhood animal cruelty” (Duncan & Miller, 2002, p 1), which lends dispute to multivariate studies that show a correlation between animal cruelty and violence.

In an effort to identify the extent to which socio-economic and family context (family background) variables have an effect on the relationship between animal cruelty and violence towards humans, this paper will use regression analysis to assess the correlation between an individual’s background and likelihood to commit animal cruelty, as well as this same individual’s likelihood to commit other violent crimes. This paper in particular will seek to add to existing research, by considering contributing and compounding variables such as education, family situation and personal experiences that are often under-reported in the existing studies. It will do this by looking at whether these contributing factors make a difference in whether an individual commits animal cruelty and other acts of violence towards humans.

CONCEPTUAL FRAMEWORK

In order to assess the effect that extent that family context and personal context has on committing animal cruelty, this paper will use regression analysis to assess the correlation between and individuals’ background and likelihood to commit violent crimes, including animal cruelty.
Data come from *The Survey of Adults on Probation* which was created for the Bureau of Justice Statistics (BJS) by the United States Department of Justice. The survey gathered information from 5,867 criminals on probation for current offenses and sentences. The survey collected results regarding the criminal histories, punitive outcomes and characteristics of the probationers. A subset of the 5,867 probationers was subsequently interviewed about socioeconomic, family background and personal experiences as youth. Included in these interviews were questions regarding employment, mental health, substance abuse, abuse history and living conditions while growing up. Thus, the 1995 *Survey of Adults on Probation* offers individual level data which can be used to evaluate criminal history (including animal cruelty conduct) and the presence of compounding and contributing background factors which may make an individual more likely to commit violence.

As has been shown in literature to date, finding accurate and robust data on animal cruelty is uncommon, and analysis can be limiting—the *Survey of Adults on Probation* data itself is limited in regards to animal cruelty and offers a low sample size. As a result, this present study will evaluate how background variables contribute to the likelihood to commit violent crimes, of which animal cruelty will be included. More specifically, violent crimes will include animal cruelty, sexual assault and aggravated assault—the end result will be an assessment that includes animal cruelty, but is not able to address it as a separate dependent outcome.

This approach will be used to assess the following null and alternative hypotheses:

\[ H_0: \text{An individual’s family context and personal context factors do not affect their likelihood to commit severely violent crimes} \]
Hₐ: An individual’s family context and personal context factors do affect their likelihood to commit severely violent crimes.

In running this analysis, it is expected that a disadvantaged youth will have an increased likelihood to commit severely violent crimes. For example, it is expected that having a lower education, growing up in a single-family household or in foster care, will increase the likelihood for an individual to commit severely violent crimes. Similarly, it is expected that having parents that do drugs, or were physically or sexually abusive will all have a positive correlation with committing severely violent crimes.

**Data Analysis**

In the *Survey of Adults on Probation*, the following family context variables are available and relevant for use as independent variables: personal drug use, parental drug use, personal physical/sexual abuse, parental presence, foster care history and mental health disorder presence. Additionally, education level is available. Missing from this data set is a parental income and personal income, which is likely an important determinate in understanding and individual’s socioeconomic upbringing.

In order to assess the correlation between family context and personal context variables with regard to severely violent crimes, an animal cruelty variable needs to be extracted from within the *Survey of Adults on Probation*. In the study, individuals were asked to report what crime they had been arrested for/put on probation for; they were also asked to report all other offenses that existed in their criminal records. Each offense is coded according to a specific number (for
example, animal cruelty is coded as offense 607). In order to isolate individuals who have a
criminal history of animal cruelty, a binary variable was generated. This variable was coded as 0
for having no animal cruelty in record and 1 for having an animal cruelty in record. Because
individual offenses were broken out among the first, second, third, fourth and fifth offense, all
counts of animal cruelty from these five offense variables were combined to generate an animal
cruelty variable.

Unfortunately, within the Survey of Adults on Probation a very low number of individuals have
animal cruelty in their records. This lack of data is consistent with other researchers’ complaints
that animal cruelty is under-reported and under-punished, which contributes to ongoing animal
cruelty statistics (see Carter, 1986; Muscari, 2004). In total, only 44 counts of animal cruelty are
reported in this study. However, there are 4,062 individuals with arrest records—the majority
with multiple arrests on their record. If consistent with other similar studies, a higher number of
the individuals in this study would have an animal cruelty arrest in their past than is presently
indicated in the Survey of Adults on Probations’ data.

To solve for this, we must consider other severely violent crimes which may mimic similar
actions as animal cruelty. Much of the literature demonstrates that animal cruelty is a gateway to
additional crime, and thus it can be insightful to study whether background factors lead to an
increased likelihood of severe violence, towards animals or otherwise. The Survey of Adults on
Probation also prompts responses regarding arrests for aggravated assault and sexual assault.
Aggravated assault is defined “as an unlawful attack by one person upon another for the purpose
of inflicting severe or aggravated bodily injury” (Federal Bureau of Investigation, 2009, p 1).
Sexual assault, for the purposes of this study, is defined as both “unwanted sexual contact
between a victim and offender” as well as rape (Bureau of Justice Statistics, 2013). By aggregating animal cruelty, aggravated assault and sexual assault one can expand the variable of interest to other severely violent actions. Thus, the sample size under consideration increases greatly and the study becomes more robust.

Similar to the animal cruelty variable, sexual assault and aggravated assault are coded in the data as a type of arrest; these arrests were spread across 5 survey questions. A binary variable was created that summed these 5 questions and refers to arrests for sexual assault, where 0 means no arrest for sexual assault and 1 equals yes to an arrest for sexual assault. Aggravated assault was designed in the same manner—a binary variable where 0 means no arrest for aggravated assault and 1 equals yes to an arrest for aggravated assault.

In aggregate, animal cruelty, sexual assault and aggravated assault account for severely violent crimes in the data set. Therefore, a final variable was designed which combined all counts of severely violent crimes, which included animal cruelty, sexual assault and aggravated assault: This variable is referred to as severe violence and is also a binary variable, where 0 equals no arrests for severe violence and 1 equals yes for arrests for severe violence. Severe violence is the primary variable of interest for the purposes of this study.

In the context of this study, family background will be studied to understand the effect it has on likelihood to commit severely violent crimes. These independent factors will include presence of parents or foster care growing up, and whether parents abused drugs and alcohol. Presence of parents is captured by the survey question which asks probationers who they lived with growing up; a binary variable that refers to living with one parent while a youth was created. The survey also asks probationers if they spent any time in foster care growing up; results for this question
were captured in a binary variable as well, where 0 means no foster care experience while growing up, and 1 means yes to foster care experience while growing up. Finally, another survey question addresses whether probationers’ parents abused drugs or alcohol. Again a binary variable was created which captured 1 for those whose parents abused drugs or alcohol and a 0 for those whose parents did not.

One might assume that level of education also plays a role in criminal activity for most individuals. For that reason, education will be included in this study. A binary variable was created to capture whether probationers attended high school or college, where 1 means they did attend and 0 means they did not attend.

Although many people assume that violent individuals have innate psychological disorders, some research actually proves otherwise (Hubbard & Matthews, 2008). Therefore, a control variable must be included which will allow for proper evaluation of this dynamic. Thus, whether or not an individual has a history of a mental disorder will be included in the model.

In order to assess how an individual’s background may contribute to their likelihood to commit severely violent crimes, such as animal cruelty, aggravated assault and sexual assault, probit models are run across key variables of interest. Probit is advantageous in this situation, where the dependent variable (severe violence) is a dichotomous variable, ranging from 0 to 1. Unlike OLS, which would result in probabilities falling outside of 0 to 1, probit restricts predicted probabilities to between 0 and 1 (Nagler, 1994). Probit also allows for review of outliers more effectively than OLS, making it a more ideal selection for this analysis where the data is limited to self-reported survey responses. The following probit model will be used to evaluate whether a disadvantaged background increases likelihood to commit violent crimes:
• $\phi$ (Severe Violence) = $\beta_0 + \beta_1$ (One Parent) + $\beta_2$ (Parents Drugs) + $\beta_3$ (Education) + $\beta_4$ (Abused) + $\beta_5$ (Used Drugs) + $\beta_6$ (Mental Health Disorder) + $\beta_6$ (African American) + $\nu$

However, results of probit cannot be directly interpreted solely based on the regression output; rather regressions may be used to determine direction and significance, while magnitude must be evaluated in context of marginal effect. Marginal effect is the “change in the conditional mean of $y$ when regressors $x$ change by one unit” (Cameron & Trivedi, 2005, p 122)

**RESULTS**

Existing literature reports that personal experiences such as being sexually or physically abused as a child can correlate to a higher likelihood to commit animal cruelty and violence towards humans (Currie, 2006; DeGue, 2009; DeViney, Dickert, & Lockwood, 1983). However, literature is limited with regard to other factors that may contribute to violent behavior, including other juvenile experiences, as well as parental influence while a youth. For this reason, in this study the analysis is divided into two categories—family context factors and personal context factors. This allows for a more detailed demonstration of the effects that correlate with violent behaviors. Family context is defined as living arrangement as a youth and whether one’s parents abused drugs or alcohol. Personal context is defined as education level, use of drugs, experience being sexually or physically abused as a youth, having a mental health disorder and one’s race. In this study, each context is first evaluated separately and then in combination in order to complete a full model meant to define the overall effects of background factors on one’s
likelihood to commit violence. Again, violence here is with regard to both humans (aggravated assault and sexual assault) and animals (animal cruelty).

**Family Context**

Literature regarding violence generally does not address whether being raised by one or two parents has an effect on increased tendencies for violent behavior. But one would expect that having two parents present while growing up would create a more stable environment and would therefore result in a lower likelihood to commit severe violence, whether towards humans or animals. Moreover, existing literature in the field of juvenile justice indicates that youth in the foster care or child welfare system have an increased likelihood to crossover into the delinquency system, showing greater likelihood for bad behavior (Herz, Ryan & Bilchik, 2010). These studies also show that youth that are part of both the welfare system and the delinquency system have a higher propensity to have parents with substance abuse problems, or personal substance abuse problems, all factors that lead to developing violent behavior (Herz, Ryan & Bilchik, 2010). Therefore we would hypothesize that having experience living in a foster home or being raised by one parent would have a positive and significant correlation with likelihood to commit severely violent crimes.

Additionally, because children model much of their behavior after that of their parents, we would expect that having parents who abused drugs and therefore participated in illegal behavior, would also have a significant impact on likelihood to commit crime. This tendency will likely manifest itself in both violent and non-violent crimes, though we expect that the combined impact of foster care and having parents who did drugs would lead to more violent tendencies.
By running two models, one which looks at presence of two parents in a youth’s household (Model A) and another that looks at foster care experience (Model B), data can be evaluated to understand the effect of each family environment. Probit analysis demonstrates that parental presence, foster care, and parental drug abuse are all statistically significant at the 99% confidence level and show a positive relationship. Marginal effects provide greater insight into the magnitude of these results. The results show that living with one parent increases likelihood to commit severely violent crimes by 3.9 percentage points compared to those who have had other living arrangements as a youth (Model A). Additionally, exposure to parents that did drugs increases likelihood to commit severely violent crimes by 11.3 percentage points. This suggests that substance abuse in the household is more detrimental than the absence of a two-parent presence as a youth (Model A).

An assessment of the effect of living in a foster home was also completed. Individuals who experienced living in a foster home during their youth are more likely to commit violent crimes by 13.2 percentage points than those who did not, controlling for whether their parents did drugs (Model B). Compellingly spending time in a foster home appears to have larger marginal effects on likelihood to commit severe violence than living with only one parent. This is consistent with studies that show children who have lived in foster care, have more behavioral problems than youth who did not (Leone & Weinberg, 2010).
**Personal Context**

The existing literature deals at length with the positive correlation between being abused as a youth and committing animal cruelty as well as subsequent or co-occurring violent crimes towards humans (Currie, 2006; DeGue, 2009; DeViney, Dickert & Lockwood, 1983). Therefore it would be expected that individuals with a history of sexual or physical abuse would have an increased probability of committing violent crimes, controlling for all other factors. But additional personal experiences may also contribute to violent tendencies, such as not attending or graduating from high school and/or illegal substance abuse as a youth. We would expect that lower levels of education would be correlated with increases in crime, and possibly violence. Involvement with illegal substances would also be expected to correlate with a higher probability of committing severely violent crimes, because use of illegal substances both assumes that individuals feel that illegal activity is appropriate and because these individuals are likely to be exposed to more criminal situations.

Model C looks at the effect of attending high school (grades 8-12), being abused as a youth, and the use of drugs with regard to violent outcomes. Additionally, mental health disorder and race is included in order to provide some context for possible contributing factors that are outside the control of individuals, but may play a role in each case. When looking at simply personal characteristics, regardless of family context as a youth, the results show that individuals who were abused as a youth are 3.6 percentage points more likely to commit severe violence than those who were not (p<0.05). Similarly, drug abuse also has a positive correlation and a near equal magnitude, but it’s more stable in statistical significance (3.3 percentage points; p<.01) than being abused as a youth. This analysis also indicates that having a mental health disorder
increases likelihood to commit severe violence by 4.1 percentage points, holding all other factors constant. This finding would dispute other research that suggests that mental health disorders have no bearing on violent conduct (Hubbard & Matthews, 2008). Race was included in this model because much research shows that African American and other minority youth are disproportionality represented in criminal statistics. In this model, being African American decreases probability of committing violent acts by .7 percentage points, however this result is not statistically significant.

**Full Model: Family Context and Personal Context**

In this present study a final and full model looks at the probability increase that results from the combination of family context and personal context factors. Through the intersection of both factors lies more clarity about the significance and magnitude of these effects. It would be expected that disadvantaged youth, meaning those who grew up in an unstable situation, either without two parents or with parents who abused drugs or alcohol and that had their own personal issues (drugs, physically or sexually abused) would be more likely to be violent. The results uphold this finding: Living in a one parent household or in foster care, being abused as a youth, using drugs, and having a mental health disorder, result in a positive effect on committing violence, compared to those who lived in a two parent household, were not abused as a youth, did not use drugs, had no mental health issues. However, not all of these correlations are significant. For example, all models continually show that being African American lessens the probability of committing severe violence, which would support arguments that suggest that
African Americans are disproportionality overrepresented in the justice system (Bell et al., 2008; Bell et al., 2009; Hill, 2006).

Marginal effects provide more clarity on this model, showing that having parents that did drugs drives the greatest probability of committing severe violence (9.3 percentage points; p<0.01). When this model is altered to include foster care experience rather than living with one parent, foster care is shown to have a greater effect on the probability of committing severe violence than all other factors (10.7 percentage points; p<0.01).

Figure 1: Marginal Effects for Individuals Who Lived with One Parent.

Figure 2: Marginal Effects for Individuals Who Lived in Foster Care.
In general, results demonstrate effects as expected. Family context, especially having parents who did drugs or living in a foster home increases the probability that an individual will engage in severely violent behavior, which may include animal cruelty, aggravated assault or sexual assault. Personal context play a role as well—doing drugs, having a mental health disorder and being sexually or physically abused as a youth all contribute to a greater probability of being violent towards animals and/or humans.

LIMITATIONS

This present study is not without limitations. The Survey of Adults on Probation aggregates responses from individuals currently on probation for an array of crimes. A select group of individuals were evaluated in a follow up questionnaire, from which the majority of the data for this present study is taken. These individuals were only those currently under supervision, and did not include individuals incarcerated, not required to check in with probation officers, or those in residential treatment. For this reason, the present study is limited to an analysis of those who have committed crimes for which they are able to receive probation. Recall that the definition for severe violence as previously indicated includes animal cruelty, aggravated assault and sexual assault. It does not include murder; this is because in the follow up survey there is an extremely small count of murderers on probation (the assumption being that murderers are not often granted probation). As some existing research indicates that violent behaviors progress overtime and that animal cruelty can be a gateway to such things as murder and serial killing (Ressler & Douglas, 1988), it would have been interesting to look at the probability of murder as a result
family and personal context. However, due to the limitations with regard to the type of individuals in this study, this data is not stable enough to be included.

Similarly, because the *Survey of Adults on Probation* used for this present study assesses only those who have been previously arrested for severe violence, it discounts naturally, those who were not arrested. This poses an innate problem with generalization of this study to the general population—animal cruelty, sexual abuse and domestic violence in the data may not be representative of the population as a whole. Moreover, because animal cruelty, sexual abuse and domestic violence often goes unreported (Muscari, 2004), it is difficult to say how the general population may compare to the results found in this study. Further research from the point of view of victims may provide additional comparisons that will augment the study of violence prevention.

Additionally, as with many of the existing studies, omitted variable bias may exist in the current study. In the case of this present study, data analysis is limited to those questions asked in the *Survey of Adults on Probation*, which is focused predominantly on arrest records rather than robust contextual background. Therefore, some components of one’s family context and personal context are missing. For example, regarding family context, parents’ education is missing from the survey results. We would expect that higher parental education would result in a lower likelihood to commit severe violence. Additionally, family income is missing from the survey results. Other studies have shown that children from families with lower incomes have higher abuse rates (Hill, 2006). Because in-family abuse has been shown to correlate with animal cruelty (Currie, 2006; DeGue & DiLillo, 2009), we would then expect that inclusion of family income in this present study would have shown positive influence on committing severe
violence. Personal context factors are absent as well. For example, level of community violence is not available in the survey results. Living in a community with higher levels of violence would likely result in a higher personal probability to commit violence oneself. It is also possible that community violence would have a greater marginal effect on severely violent tendencies than other family and personal context factors.

Finally, it is important to note that much research has been done regarding the effect of being in the welfare system and likelihood to end up in the juvenile delinquency and adult criminal system. Research shows a positive correlation between these groups, suggesting that those in foster care are systematically overrepresented in the justice system—most experts concur that this overrepresentation is due to the increased supervision and judicial scrutiny that these youth are subject to while under the care of a foster home. Therefore, while this present study shows results that are consistent with the research at large, some may argue that foster care inherently introduces other systematic biases to the model, detracting from the significance seen in this study.

POLICY IMPLICATIONS

As upheld in the literature and in this present study, certain experiences as a youth can make individuals more likely to become violent, whether it is towards animals or towards humans. Some of these experiences, such as drug abuse, are preventable; others such as living in foster care, having parents who abuse drugs, being a victim of sexual or physical abuse, and having a mental health disorder are not. Therefore, it is important that research such as this be used to
identify policy options which can perform in a number of ways. First, we must create measures that appropriately react to youth in situations where they are at-risk for becoming violent towards animals and humans. Second, we must design systems that help detect at-risk youth so that preventative or rehabilitative processes can be extended.

In this regard it must first be publicized and documented that youth who use drugs are more likely to be violent towards animals and humans. School education and public campaigns about drug deterrence should acknowledge the incremental differences in violent tendencies that arise in youth who do drugs. This would result in increased awareness about the negative repercussions of drug abuse among youth; it will additionally have the effect of increasing public interest in deterring drug usage among young children and teens. For youth that enter the juvenile justice system proper provisions should immediately be established. Rather than treating the substance abuse alone, a team of specialists should address and assess each individual’s likelihood to commit future violence (Schubert, et al., 2011; The National Center on Addiction and Substance Abuse, 2004). These assessments should act to determine what additional care and reinforcement each at-risk youth requires in order to deter these youth from committing future violence. While more time and staff intensive, the benefit of individualized assessments along with the importance of negating crime result in a net positive outcome.

Additionally, because living in foster care or having a mental health disorder may increase likelihood of violence, proper support and preventative measures should be available for these at-risk youth. Youth with these predispositions should be provided a social worker or therapist and additional empathy training, which may help to contribute to the ability to repress violent
tendencies. Additionally, helping these youth identify with their own risks could alleviate some of the probability that they will become violent towards animals and humans.

For individuals with non-preventable factors, such as having parents who abuse drugs or alcohol, or who are physically or sexually abused, it is incumbent upon the community to recognize that these youth need help and support. This can be accomplished through a cross-reporting effort among law enforcement, hospitals, educators, and veterinary clinics.

If adults are arrested for drug use or alcohol related instances, the justice system and welfare systems ought to assess the risk level of any children related to these adults. These children should be assessed for violent tendencies and should be afforded any support that may be needed in order to help them identify with their own risk factors. Additionally, school officials and nursing staff should be cognizant of the effects of having parents that abuse drugs or alcohol, and should include education around this dynamic, especially in early childhood education. Finally, hospitals can aid in the prevention of severe violence by reporting instances of substance abuse to appropriate parties.

It is also critical to properly assess and support children who are victims of sexual or physically abuse. These youth are at increased risk of becoming violent towards animals and humans; by ensuring all possible parties are aware of this dynamic and designing proper cross reporting systems, severe violence can be prevented. For example, should a hospital discover an instance of child abuse or should a school teacher suspect abuse, not only should the welfare system be alerted, but it should also be acknowledged that these children are at increased risk for committing violence. By providing them with appropriate education, empathy training and
community support, the correlation between their abuse and likelihood to commit severe violence may be marginalized.

Finally, at the heart of this study is an intention of heightening awareness around preventing and detecting animal cruelty. By acknowledging that at-risk youth are more likely to commit animal cruelty and designing cross-reporting systems to identify these youth, communities and officials can begin to lower trends of animal cruelty, and potentially human violence as well. For example, when a veterinary clinic encounters acts of animal cruelty, not only should the justice system be brought in, but the child welfare system as well. These instances may indicate an unstable home environment which has led to a youth becoming violent—by identifying these situations and subsequently whether a youth is involved, proper support can be introduced prior to additional acts of violence. Additionally, because these youth are likely to be victims of sexual or physical abuse, it is important to report the case so that proper precautions can be enacted (Currie, 2006; DeGue &DiLillo, 2009). Currently, these cross reporting systems are not adequately in place, and veterinarian clinics are not empowered to drive change, an issue which has been documented by researchers for years (see Ascione, 2001; Muscari, 2004). By educating veterinary clinics on the importance of reporting animal cruelty, not only for the safety of the animals, but also for safety of the youth involved, a 360-degree approach for helping at-risk youth can be established.

Additional research is needed in order to ensure that these preventative and reactive measures do lessen the effects of having at-risk personal and family context factors. Only then can the true impact of animal cruelty and other violent behaviors be recognized, and socialized to those organizations, officials and community members that can help to prevent it in the nation’s youth.
CONCLUSION

Inconsistencies regarding the severity of animal cruelty have led to a low understanding about the role of animal cruelty in detecting and preventing co-occurring violence towards humans. However, much research has been done that demonstrates that animal cruelty is a gateway indicator for detecting at-risk youth (DeGue & DiLillo, 2009). For example, animal cruelty has been shown to be present when youth who are being physically or sexually abused or live in a household with domestic violence. Additionally, individuals who commit animal cruelty also may commit acts of violence towards humans. Therefore not only is important to be able to detect and prevent animal cruelty itself, it is also important to understand which youth may be at risk for committing animal cruelty and other violent crimes in order to best protect these youths from a future of violence.

In order to do this, we must properly be able to assess and recognize factors that contribute to likelihood to commit animal cruelty and other severely violent acts, such as sexual assault and aggravated assault. Previous research is very light in this regard and not much emphasis has been placed on the relationship between family context and personal context and likelihood to commit severely violent crimes. Even though previous research rarely touches on this dynamic, one could hypothesize that growing up in a disadvantaged situation such as having parents who abused drugs, spending time in a foster home, being sexually or physically abused and/or having a mental health disorder might lead to a higher likelihood to commit severe violence. Animal cruelty is, of course, considered in this severe violence framework. This study contained in this document ran regression models to assess the correlation between family context and personal context on likelihood to commit severe violence. Using responses from the Survey of Adults on
Probation, which captures background and arrest history of individuals on probation, this study evaluates the factors that may lead to a higher probability of committing severely violent crimes. In this equation, severely violent crimes were defined as animal cruelty, sexual assault and aggravated assault. The regression models supported the hypothesis: having a disadvantaged family or personal context as a youth leads to a higher probability to commit severely violent crimes, of which animal cruelty is included. Results such as these can be used to augment policy discussions about the importance of detecting and preventing youth at risk of committing violent crimes.

However, current systems are not adequate to detect and help lessen these probabilities. For example, hospitals often see cases of child abuse or drug abuse; these cases can be leveraged to help detect the possibility that these individuals are likely to commit violence, either towards animals or humans. By cross-reporting these cases to appropriate organizations, including both animal protection systems, welfare systems and justice systems appropriate authorities can assess these cases and institute support and rehabilitation processes as necessary (Ascione, 2001; Muscari, 2004). Additional research would contribute to this assessment and the policy improvements that can be developed to help stem both violence towards animals and violence towards humans.

Research in this field of animal cruelty is scarce—even scarcer is data to evaluate what may lead to animal cruelty. However, by looking at the relationship between family context and personal context factors and also the probability to commit severely violent crimes (in which animal cruelty is included) we can identify common elements that make one more at risk for committing violence. This will serve to both provide support and aid for those youth at risk for committing
violence and protection for the victims of this violence, including animals. And in doing so, we will have raised awareness about animal cruelty in America and the ways in which it can both be prevented and used to help at-risk youth.
### APPENDIX

**TABLE 1: Summary Statistics**

<table>
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<tr>
<th>Variable</th>
<th>Observations</th>
<th>Mean</th>
<th>Std. Dev.</th>
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<th>Max</th>
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Table 2: Family Context and Personal Context on Committing Severely Violent Crimes

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<th></th>
<th>Severe Violence (A)</th>
<th>Severe Violence (B)</th>
<th>Severe Violence (C)</th>
<th>Severe Violence (D)</th>
<th>Severe Violence (E)</th>
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<td>0.366</td>
<td>0.850</td>
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<td></td>
<td>(4.26)**</td>
<td>(3.67)**</td>
<td>(8.91)**</td>
<td>(3.82)**</td>
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<td>Parents drugs</td>
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<td>0.725</td>
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</tr>
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<td>(3.67)**</td>
<td>(8.91)**</td>
<td>(3.82)**</td>
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<td>(8.07)**</td>
<td>(4.41)**</td>
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<td>(3.29)**</td>
<td>(2.82)**</td>
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<td></td>
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**Data Set**