Psychological risk factors for childhood nonhuman animal cruelty
Hawkins, Roxanne D.; Hawkins, Emma L.; Williams, Joanne M.

Published in:
Society and Animals

DOI:
10.1163/15685306-12341448

E-pub ahead of print: 01/06/2017

Document Version
Peer reviewed version

Link to publication on the UWS Academic Portal

Citation for published version (APA):

General rights
Copyright and moral rights for the publications made accessible in the UWS Academic Portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

This is an Open Access item distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (http://creativecommons.org/licenses/by-nc-nd/4.0/), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way.

Take down policy
If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.
Psychological Risk Factors for Childhood Nonhuman Animal Cruelty: A Systematic Review

Roxanne D. Hawkins
School of Health in Social Science, The University of Edinburgh, United Kingdom

Emma L. Hawkins
Division of Psychiatry, The University of Edinburgh, United Kingdom

Joanne M. Williams
School of Health in Social Science, The University of Edinburgh, United Kingdom

Correspondence should be sent to Roxanne Hawkins, School of Health in Social Science, The University of Edinburgh Medical School, Teviot Place, Edinburgh, United Kingdom. Email: s1477956@sms.ed.ac.uk
Despite growing research into human-nonhuman animal relationships, little is known about childhood cruelty to nonhuman animals. The purpose of this review was to investigate the potential psychological risk factors for childhood cruelty to animals. The aim was to assemble, synthesize, and evaluate the quality and breadth of existing empirical research and highlight areas in need of further study. The review reveals a myriad of potential psychological risk factors associated with childhood animal cruelty, but highlights the decrease in publications on this topic over time and the lack of high-quality publications. Investigating the factors underlying cruel behavior towards animals has great implications for animal welfare and child wellbeing, and is vital for designing and implementing successful universal and targeted interventions to prevent cruelty to animals.

**Keywords:** animal cruelty, childhood, human-animal interactions, prevention, risk factors
**Childhood Animal Cruelty**

Ascione (1993) defined animal cruelty as “socially unacceptable behavior that intentionally causes unnecessary pain, suffering, or distress to and/or the death of an animal” (p. 228). Motivation can be defined as “an internal force originated from a need not satisfied which impels the individuals to be involved in a specific behaviour” (Schiffman & Kanuk, 2004). Ascione (2005) proposed a classification system for the underlying motivations of animal cruelty behavior. The first category, explorative/curious animal abuse, likely applies to very young children who may hurt non-human animals unintentionally due to a lack of supervision and/or a lack of knowledge about the humane treatment of animals; they may lack the cognitive maturity needed to understand cruelty to animals and may benefit through appropriate animal-related education.

The second category, pathological animal abuse, is likely to apply to children who are slightly older, where cruelty to animals may be symptomatic of psychological difficulties. Children who fall into this category may suffer from personality, conduct, or other psychiatric disorders but may not yet have had a professional diagnosis (animal cruelty is part of the diagnostic criteria for Conduct Disorder; American Psychiatric Association, 2013). The third category, delinquent animal abuse, applies to adolescents where animal cruelty may be part of a broader pattern of delinquent and antisocial behavior (Walters & Noon, 2015). Other factors associated with childhood animal cruelty include peer reinforcement, behavior imitation, mood enhancement, sexual gratification, forced animal abuse, attachment to animals, phobias of particular animals, abusive experiences and post-traumatic play, self-injury, rehearsal for interpersonal violence, and participating in animal abuse as a vehicle for emotional abuse (Ascione et al., 1997).
On initial inspection, research on childhood animal cruelty emerges from many disciplines and, without systematic review, it is difficult to draw firm conclusions from the literature. To date, there have been no systematic reviews on the topic of childhood animal cruelty.

The Cochrane Collaboration and the National Institute for Health and Clinical Excellence assess available evidence to inform guidelines, policy, and practice (Saks & Allsop, 2007). Systematic reviews are becoming common practice in research and are widely believed to be at, or close to, the top of a hierarchy of evidence. With emphasis on judging the quality of evidence, systematic reviews help to map out areas of uncertainty and identify research gaps, as well as help to ensure that clinical practice is kept up-to-date with the best research evidence available: “A systematic review enables the reader to appraise critically the most robust evidence available in an attempt to synthesize what is known, and not known, about the efficacy of particular interventions” (Saks & Allsop, 2007, p. 34).

Our aim was to conduct a systematic review of published studies that have investigated psychological risk factors associated with childhood animal cruelty. Psychological risk factors can be defined as “a characteristic at the biological, psychological, family, community, or cultural level that precedes and is associated with a higher likelihood of problem outcomes” (O’Connell, Boat, & Warner, 2009, p. 28). Our study aims to provide an unbiased synthesis of research in this area for the use of academics, policymakers, practitioners, and any others interested in this topic. It is vital that we understand any potential factors that may play a role in children’s cruel behavior toward animals in order to successfully intervene and foster a positive and beneficial relationship between children and animals. It is equally important that we identify strengths and weaknesses in the current literature to better inform future studies.
The aims are to (1) identify the scope of research on psychological risk factors for childhood animal cruelty and identify knowledge gaps; (2) assemble, summarize, and evaluate the empirical research base for psychological risk factors for childhood animal cruelty; and (3) provide recommendations for future research.

Research Questions

The research questions were the following:

(1) What are the psychological risk factors for childhood animal cruelty?

(2) Are there age and gender differences in childhood animal cruelty?

(3) How many published, peer-reviewed articles have investigated psychological risk factors for childhood animal cruelty?

Materials and Methods

Protocol

To identify valid literature, the PRISMA guidelines (Moher et al., 2009) were consulted, and a Boolean search was conducted on July 20, 2015, and again on February 01, 2016.

Search Procedure

Studies were identified by searching a large and varied range of electronic databases to increase coverage and account for the diversity of journals that animal cruelty literature is published in. The eighteen databases that were searched include ERIC, Child Development and Adolescent Studies, Environment Complete, GreenFILE, Family Studies Abstracts, SocINDEX, Peace Research Abstracts, Psychology and Behavioural Sciences Collections, EMBASE (including EMBASE classic), CAB Abstracts, MEDLINE (including MEDLINE daily update), The Joanna Briggs Institute EBP Database, PsychINFO, ASSIA, PubMed, Web of Science, Science Direct, and Scopus. Search terms (Table 1) for all of the databases
included at least one identifier for psychological risk factors, at least one identifier for animal cruelty, and at least one identifier for the target age group.

---------------

Table 1 here

---------------

**Eligibility Criteria**

Eligible studies were identified by applying pre-defined inclusion and exclusion criteria. The criteria stated that (a) studies had to be written in English; (b) articles were in peer-reviewed journals; (c) primary research had to be empirical; and (d) the study population had to include children, adolescents, or adults retrospectively reporting on their childhood. Review studies, books, dissertations, media analyses, magazine articles, and conference abstracts were excluded as well as non-English articles and those that did not include animal cruelty as a stated measure in the investigation.

**Study Selection**

The study selection process consisted of three stages. Firstly, duplicate studies were removed. Secondly, titles and abstracts were screened for relevance to animal cruelty. Finally, studies were checked for eligibility using the pre-defined inclusion and exclusion criteria.

The literature search resulted in a total of 838 citations. Following the removal of duplicates, a total of 449 citations remained. During title and abstract screening, 269 papers were removed, leaving a total of 180 articles for eligibility assessment. At this stage, 91 studies were removed, as they were not directly relevant to childhood animal cruelty; 46 studies were removed due to article type; and 4 studies were removed, as they were not
available in the English language. The final sample included 39 articles (4.7% of the total initial pool). A flowchart of the study selection process is presented in Figure 1.

Figure 1 here

---------------

Data Extraction and Evaluation

Information was extracted from each of the final papers in order to achieve the aims of the review. Data items included the psychological factors that were investigated and the results of each study in order to identify commonly reported associations (see Table 2). Data items also included the study type, animal cruelty measurement, participants (number, age, and gender), country of study, and setting of research (Table 3). Additional data items were extracted for exploratory purposes, including first author, date of publication, and name of journal.

---------------

Tables 2 and 3 here

---------------

Quality Assessment

Individual studies were assessed using a validated quality assessment tool for studies with diverse designs (QATSDD; Sirriyeh, Lawton, Gardner, & Armitage, 2012). These guidelines consist of 16 quality criteria, all of which apply to mixed methods; 14 apply to qualitative studies and 14 apply to quantitative studies. Each paper was scored from 0 to 3 for each item and entered into a scoring grid by two independent researchers. A total score and percentage were then computed for each study (Table 4). Case studies could not be easily assessed using
these criteria, and so they were not included in the quality assessment procedure. Using the obtained overall quality score, each paper was categorized into the following: (1) quality criteria are very well met (80-100%), (2) quality criteria are well met (60-79%), (3) quality criteria are fairly met (40-59%), (4) quality criteria are slightly met (20-39%) and (5) quality criteria are hardly met (below 20%). The publications were scored by two authors independently ($K = .78$), with the Cohen’s kappa demonstrating a substantial strength of agreement (Landis & Koch, 1977).

Table 4 here

Results

The final sample articles reviewed were published between 1971 and 2014, with the majority of these published between 2001 and 2010 (51.3%). Despite the limitation to English-language articles, there was an international representation of research, with the majority (66.6%) from the USA ($n = 26$). Other countries included Australia ($n = 6$), the UK ($n = 2$), and Canada, Italy, Switzerland, Malaysia, and China (1 study each).

The articles were published in a wide variety of disciplines, with the majority ($n = 17$) published in interdisciplinary journals including *Child Abuse & Neglect* ($n = 3$) and the *Journal of Interpersonal Violence* ($n = 9$). Specific disciplines that articles were published in included psychology (*Journal of Applied Developmental Psychology*, $n = 1$), psychotherapy (*Journal of Child Psychotherapy*, $n = 1$), criminology (*International Journal of Offender Therapy and Comparative Criminology*, $n = 2$), child health and welfare (*Child: Care, Health and Development*, $n = 1$), psychiatry (*Child Psychiatry and Human Development*, $n = 3$), social sciences (*Human Relations*, $n = 1$), and human-animal interactions (*Anthrozoos: A*
Meta-analysis was not appropriate due to the heterogeneous nature of the included study designs, participants, measures, and reported outcome measures; thus, the results of this review are in a descriptive and qualitative narrative synthesis.

**Age Group and Sample Sizes**

The majority of studies relied on retrospective reporting of childhood cruelty to animals (41%), focusing on adults \( n = 17 \) or adolescents \( n = 16 \). A smaller number of studies focused on children aged 5 to 11 years \( n = 14 \) or young children under 5 years \( n = 1 \). One study did not specify the age group studied. Out of the 39 studies included, only 12.8% collected data from children directly.

Excluding case studies and studies that used existing data, good sample sizes were used overall (mean = 300, range 38-893). Good size samples were used for children (mean = 291, range 50-532), adolescents (mean = 182, range 50-281), adults (mean = 281, range 102-860), parent report studies (mean = 427, range 38-893), and mother and child reports (mean = 330, range 131-496).

**Methodology of Studies**

Questionnaires were the most common method of investigation \( n = 20, 51.3\% \), half of which involved retrospective reporting with convicted adults. The second and third most common methods used existing data \( n = 7 \) and data from psychiatric and/or behavioral assessments \( n = 6 \). Other methods included interviews \( n = 5 \), retrospective interviews \( n = 4 \), telephone interviews \( n = 2 \), and case studies \( n = 5 \).

The most common research settings were school classrooms \( n = 6 \) and prisons \( n = 6 \). Other research settings included a child’s home \( n = 2 \), therapy sessions \( n = 1 \), over the telephone \( n = 1 \), an inpatient psychiatric hospital \( n = 2 \), and within a safe house \( n = 1 \).
The majority of studies \((n = 21, 53.8\%)\) relied on existing data or did not specify the research setting.

Studies used a varied selection of animal cruelty measures, including the Animal-Related Trauma Inventory (Boat, 1994) \((n = 3)\), an item within the Child Behavior Checklist (Achenbach, 1991) \((n = 5)\), Physical and Emotional Tormenting Against Animals Scale (Baldry, 2004) \((n = 2)\), Children's Attitudes and Behaviours towards Animals Questionnaire (Guymor et al., 2001) \((n = 2)\), Children and Animals Inventory (Dadds et al., 2004) \((n = 3)\), Children's Treatment of Animals Questionnaire (Thompson & Gullone, 2003) \((n = 2)\), and Attitudes Toward the Treatment of Animals Scale (Henry, 2004) \((n = 2)\). The following measures were used in a single study each: Experiences with Animals (a modified version of Flynn, 1999), an item within the Child Assessment Schedule (Hodges et al., 1982), Pet Maltreatment Assessment (Ascione & Weber, 1995), an item from the Child Sexual Behavior Inventory (Friedrich, 1997), and an item from the Children and Animals Assessment Instrument (Ascione et al., 1997).

**Prevalence of Childhood Animal Cruelty**

Three studies found a relatively high rate of exposure to animal cruelty (Miller & Knutson, 1997; Thompson & Gullone, 2006; DeGue & DiLillo, 2008). For example, DeGue and DiLillo (2008) found that 22.9% of 860 college students in America reported some exposure to animal cruelty. Three studies (Baldry, 2005; Gullone & Robertson, 2008; Kellert & Felthous, 1985) found a relatively high prevalence of animal cruelty behavior: 40%, 20.6%, and 60%, respectively. Lucia and Killias (2011) found that 48% of 3,648 pupils in 7th, 8th, and 9th grades (ages 13-16 years) admitted to having maltreated an animal at least once.
Psychological Risk Factors for Childhood Animal Cruelty

The most common risk factor investigated in relation to childhood animal cruelty was behavioral problems ($n = 19, 48.7\%$). The second and third most common factors were child abuse and neglect by caregivers ($n = 14$) and domestic abuse ($n = 10$). Other factors included witnessing animal abuse ($n = 8$), bullying and victimization ($n = 8$), personality ($n = 8$), psychiatric problems and/or mental illness ($n = 8$), family functioning/context ($n = 7$), sexual abuse ($n = 6$), empathy ($n = 3$), and coping style ($n = 1$). The majority of studies investigated a combination of several of these factors.

The most common finding was that childhood animal cruelty is one of many symptoms of behavioral disturbance ($n = 16$), and in particular it is a symptom of conduct disorder ($n = 4$), fire setting, or within a triad with enuresis and fire setting ($n = 4$). Animal cruelty is common among those with general behavioral problems (Sanders, 2013), such as problems with peers and sexually acting out (Boat et al., 2011), as well as aggression ($n = 4$). Childhood animal cruelty was also associated with more severe behavioral problems, such as destructiveness and stealing (Tapia, 1971), temper tantrums, assaultive outbursts, childhood fights, and truancy (Felthous, 1980).

Anger, leading to aggression, was a commonly reported motivation of animal cruelty behavior. Overton (2011), for example, found that one quarter of 180 adult inmates were motivated out of anger to be cruel to animals as a child. Sakheim et al. (1991) found that children who were cruel to animals developed aggressive fantasies or became easily enraged by peers or adults, and that children’s poorly controlled aggression took the form of behaving in a cruel and sadistic manner towards animals (as well as towards younger children). Sakheim also reports a link between childhood animal cruelty and severe fire setting; intense
anger at maternal rejection, neglect, or abandonment; and poor social comprehension and judgement.

Childhood animal cruelty was found to be associated with bullying and victimization experiences in 7 studies (Sanders et al., 2013; Baldry, 2005; Henry & Sanders, 2007; Boat et al., 2011; Tapia, 1971; DeGue & DiLillo, 2008; Gullone & Robertson, 2008). Abusing animals during childhood “for fun,” an indicator of sadism, was one of 9 motivations reported (Hensley et al., 2011; Hensley & Tallichet, 2005). Hensley et al. (2011) and Overton et al. (2011) found that over 60% of adult inmate respondents reported that they were cruel to animals as a child “for fun.” Dadds, Whiting, and Hawes (2006) found that animal cruelty in boys was associated with an early psychopathy pathway characterized by callous and unemotional traits (often seen in Conduct Disorder; American Psychiatric Association, 2013), and disregard and callous lack of empathy for others. Animal cruelty within this sub-group of children displaying conduct disorder may reflect low meta-cognition or low reflective function (Patrick et al., 1994).

Animal cruelty is a symptom of various psychiatric and mental health issues as highlighted by 9 studies (Felthous, 1980; Shapiro, Prince, Ireland, & Stein, 2006; Kruesi, 1989; Tapia, 1971; Rogeness et al., 1984, Sverd et al., 1994; Ascione et al., 2003; Luk, 1999; Dadds et al., 2006). The studies that investigated this link were mainly case studies or clinical data (e.g., from Diagnostic and Statistical Manual of Mental Disorders classification criteria), and so animal cruelty was one of many reported problematic symptoms. Shapiro et al. (2006) describe a study of a 7-year-old girl who displayed social withdrawal, low productivity in school, “odd behaviour,” as well as cruel fantasies and both real and symbolic cruelty to animals, suggesting a possible link between early life stress, psychiatric illness, and childhood animal cruelty. Tapia (1971) found that factors relating to animal cruelty ranged from biological factors (e.g., Organic Brain Syndrome) to mental illness, to environmental
factors or a combination of psycho-bio-social factors in 18 cases of children, all boys (ages 5-15 years). Other psycho-biological studies have found associations between animal cruelty and low levels of serotonin (5HIAA; Kruesi, 1989) and zero dopamine (Rogeness, 1984).

Three studies considered empathy in relation to childhood animal cruelty (Henry 2006; Lucia, 2011; Thompson & Gullone, 2008). Thompson and Gullone (2008), for example, found that empathy and (to a lesser degree) attachment to parents and peers negatively correlated with animal cruelty, but are positively associated with the humane treatment of animals. Furthermore, animal cruelty was negatively correlated with prosocial behavior. Thompson and Gullone (2008) concluded that humane animal treatment fosters the normal development of empathy and that empathy serves as a mediating role in the associations between animal cruelty, attachment to parents and peers, and humane animal treatment.

Adverse Childhood Experiences

A common finding was that childhood animal cruelty is associated with a cumulative burden of aversive childhood experiences including trauma and neglect ($n = 3$), harsh parenting ($n = 2$), family conflict ($n = 1$), parent’s low education ($n = 1$), and prolonged separation from a father figure ($n = 1$). Various forms of abuse were commonly related to childhood cruelty to animals in the studies reviewed including domestic abuse ($n = 9$), child abuse ($n = 4$), and sexual abuse ($n = 6$). McEwan et al. (2014), for example, found that children who were cruel to animals were more likely to have been maltreated by family members than other children, but highlighted that not all children who are cruel to animals have been maltreated.

There seems to be an overlap between various forms of abuse within the home; DeGue and DiLillo (2008) found that 60% of 860 college students who had witnessed or perpetrated animal cruelty as children also reported experiences of childhood maltreatment.
and domestic violence. Becker et al. (2004) concluded that family variables (such as marital violence and harsh parenting) increase the likelihood of childhood animal cruelty. Although childhood adversities were not included in the original search terms, these studies represented the majority of studies on childhood animal cruelty. Therefore, these results may not be a comprehensive synthesis in relation to childhood adversities and childhood animal cruelty behavior.

Witnessing Animal Cruelty

Witnessing animal cruelty could lead to the imitation of this behavior (Overton, 2011), and it was another common factor associated with childhood animal cruelty behavior \( n = 8 \). Children who frequently witnessed animal abuse reported higher levels of animal cruelty behavior (Thompson, 2006). Thompson concluded that the damaging effects of witnessing animal cruelty are cumulative and animal cruelty is a widespread phenomenon. The age of the child who witnesses animal cruelty and who the child observes may have an effect. Hensley and Tallichet (2005) found that inmates who had observed a friend abuse animals as a child were more likely to hurt or kill animals more frequently, while those who were younger when they first witnessed animal cruelty hurt or killed animals at a younger age.

Age and Gender

A number of gender and age differences were found in the literature. Childhood animal cruelty is most commonly observed or reported in boys \( n = 5 \), male teenagers \( n = 1 \), and retrospectively reported in adult males \( n = 6 \). However, Currie (2006) found no gender or age differences and Mellor and Yeow (2008) found no gender differences in child animal cruelty behavior, although there were gender differences for risk factors of animal cruelty.

There seems to be conflicting evidence for age trends of animal cruelty. Much of the animal cruelty literature focuses on teenagers, and animal cruelty as part of delinquency,
which greatly increases during adolescence. Some of the findings highlighted in this review, however, suggest that animal cruelty is also an issue with younger children. For example, Tapia (1971) reported an average onset age for animal cruelty of 9.5 years, Boat et al. (2011) observed animal cruelty in children aged 3 to 17, and McEwan et al. (2014) found that most reports of animal cruelty were in young children. Moreover, Hensley and Tallichet (2005) found that those who had committed animal cruelty at a younger age were more likely to have engaged in multiple acts of animal cruelty. There may be different developmental trajectories for animal cruelty with risk factors specific to different age groups. The family will be of great importance for younger children, but peer group influence may become focal to teenagers (Compas, Hinden, & Gerdhardt, 1995).

**Discussion**

The aim of this study was to systematically review the existing literature to answer three main research questions: (1) What are the psychological risk factors for childhood animal cruelty? (2) Are there age and gender differences in childhood animal cruelty? (3) How many published peer-reviewed articles have investigated psychological risk factors for childhood animal cruelty? The systematic review revealed a range of potential psychological risk factors associated with childhood animal cruelty including, but not limited to sadism, callous and unemotional traits, and lack of empathy, mental health, conduct disorder, abuse, fire setting, aggression, destructiveness, and bullying. However, the review also highlights a lack of high-quality publications, and confirms the need for more stringent methodological procedures to better explore these factors.

Within recent years, there has been a growing interest in the positive aspects of human-animal relationships, although relatively little research has focused on negative relationships between children and animals. Within the wealth of research into child
development, studies focusing on children’s relationships with animals, specifically childhood animal cruelty, remain underrepresented (McCardle et al., 2011). Few studies were published prior to 2000, with scientific interest peaking between 2001 and 2010 (20 published studies), and only ten studies published since 2011. Psychologists working with children tend to ignore reports of animal cruelty (Signal et al., 2013), and the cross-disciplinary interest in animal cruelty may be hindering the gathering and interpretation of findings. Since the 1970s to present, only two studies have been published in psychological journals: *Journal of Applied Developmental Psychology* (Gullone & Robertson, 2008) and *Psychology of Violence* (Lucia & Killias, 2011). Only seven studies have been published in human-animal interaction journals: *Anthrozoos: A Multidisciplinary Journal of the Interactions of People & Animals* (e.g., Henry, 2006), and *Society & Animals* (e.g., Thompson & Gullone, 2006).

The overall quality of the published research was relatively low; only 2 papers (5.9%) scored 1 (“quality criteria are very well met”). Despite the majority of publications (not including case studies) receiving a score of 2 (“quality criteria are well met”; rater 1: 61.8%; rater 2: 64.7%), a large number of papers (rater 1: 29.4%; rater 2: 26.5%) received a score of 3 (“quality criteria are fairly met”). One paper received a score of 4 (“quality criteria are slightly met”), and no publications received a score of 5 (“quality criteria are hardly met”). See Sirriyeh et al. (2012) for full assessment criteria. The lack of high-quality publications needs to be addressed in future studies.

The results from this review indicate a wide range of potential psychological risk factors for childhood animal cruelty, and highlight possible social and environmental factors that may have an impact on child-animal relationships. Many studies in this review focused on forms of abuse as a risk factor of animal cruelty (e.g., Baldry, 2005). The relationship between family violence and animal cruelty appears to be comorbid; one form of abuse
appears to coexist with another. Children observe treatment of companion animals at home and will vicariously learn this behavior. Witnessing animal cruelty is a risk for childhood animal cruelty. Hensley and Tallichet (2005) concluded that the onset and reoccurrence of childhood animal cruelty is influenced by the behaviors of a child’s family. Exposure to violence can disrupt the development of empathy, which may lead to “empathy deficits” and thus increase the likelihood of aggression (Ascione, 1993; Flynn, 1999). Normative empathy levels emerge during childhood and may serve as a protective factor against engaging in aggressive behavior (Thompson & Gullone, 2003).

Children who are cruel to animals are at risk of developing conduct-disordered behaviors (Boat et al., 2011) and delinquency, especially those who demonstrate aggression (Lucia, 2011). Felthous and Kellert (1986) concluded that childhood animal cruelty may represent a pattern of impulsive, diffuse aggression, and antisocial behaviors (see also Arluke et al., 1999), and it is included under antisocial behavior (World Health Organization, 2004). Research linking cruelty to animals and other forms of behavioural disturbance (see Lockwood & Ascione, 1998) led to the inclusion of animal cruelty within the diagnosis for conduct disorder, first appearing in the revised third edition of the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 1987). However, research establishing the diagnostic significance of animal cruelty behavior is still almost non-existent (Gleyzer et al., 2002). The roots of cruelty may be first apparent in preschool years, and so very early interventions may prevent antisocial behavior from escalating (Lewchanin & Randour, 2008).

Childhood animal cruelty was not specifically mentioned within the aims or hypotheses in many of the published studies on mental health, and was instead one of many symptoms reported as part of wider investigations. The results from this review indicate that childhood animal cruelty can be one of many symptoms of various psychiatric and mental
health issues, which can either occur as an isolated act (associated with a psychotic mental state) or as a repeated act associated with a history of violent offending. Seven studies in this review were published in psychiatric journals, but animal cruelty was not the sole focus and was often reported as a sidenote in case studies or as part of a diagnosis. Previous research has found associations between cruelty to animals (during the lifetime) and psychiatric disorders, characterized by self-control deficits including lifetime alcohol use disorder, pathological gambling, conduct disorder, and personality disorders (Vaughn et al., 2009); childhood animal cruelty may be a warning sign for compromised mental health. Future animal cruelty research could investigate associations between mental health, animal cruelty behavior, and other behavioral disturbances, thus filling an important gap in the current human-animal interaction research.

Gullone and Robertson (2008) concluded that animal abuse is not an uncommon childhood behavior and appears more common in those who witness others committing animal cruelty. McEwan et al. (2014), however, concluded that childhood animal cruelty was a relatively rare phenomenon, having been reported in 9% of a sample of 2,232 children (5-12 years of age). Three studies found a relatively high rate of exposure to animal cruelty, and animal cruelty is most commonly witnessed in boys, as indicated by various studies in this review. Exposure to animal cruelty in childhood appears to be widespread and cumulative in nature, being a “normal rite of childhood” beginning as early as 3 years of age (Boat et al., 2011), steadily declining between 5 and 10 years (McEwan et al., 2014), and leveling off at around 12 years of age (Boat et al., 2011). Frick et al. (1993) revealed that the median age that animal cruelty appears is 6.5 years, which is earlier than bullying and vandalism. The majority of studies on childhood animal cruelty have not directly observed or measured animal cruelty in children, instead they focused on retrospective reports from adults or reports of caregivers. If exposure to animal cruelty and the act of animal cruelty in children are
common, and children are influenced and affected by members of their primary social environment, it may be more beneficial to investigate children directly and intervene early on in childhood to prevent the cycle of abuse before it begins.

Research Gaps and Recommendations

This review identified a number of gaps in the childhood animal cruelty literature. Firstly, empathy (cognitive and affective) as well as compassion were underrepresented in the animal cruelty literature; three studies in this review investigated empathy while none examined compassion. Empathy and compassion should be considered in future research, as studies have demonstrated a link between empathy and violence (McPhedran, 2009), compassion and violence (Ascione & Arkow, 1999), and violence toward animals and violence toward humans (Ascione, 2001; Merz-Perez & Heide, 2003).

Another possible consideration that has been overlooked in relation to childhood animal cruelty, but appears to be linked to cognitive empathy, is children’s beliefs about animal mind. Believing that nonhuman animals are sentient could have an effect on attitudes towards the treatment of animals and may determine the nature of interactions with animals. For example, Knight et al. (2004) found that lower scores on beliefs about animal mind were related to adult males’ higher acceptance of animals being used in experimentation, and using animals for personal decoration, entertainment, and financial gain. Hills (1995) found a link between empathy and beliefs about animal mind, concluding that conceptualizing animals as insentient may lead to unacceptable behaviors due to the relief of ethical and moral impediments (Knight et al., 2004).

Furthermore, children’s beliefs about animal minds may be related to attitudes towards animal cruelty, as well as compassion toward animals, humane and caring behavior toward animals, emotional attachment, and attitudes towards animals (Hawkins & Williams,
Therefore, perceived animal sentience may have an effect on how children treat animals and requires further research: If children believe animals are unemotional and insentient, are they more likely to harm them? If so, how can we change children’s beliefs about animal mind to promote humane behavior towards animals?

Personality refers to individual differences in characteristic patterns of thinking, feeling, and behaving and may have a driving influence on intentions and acts of animal cruelty in childhood, although personality variables in relation to childhood animal cruelty are not well-quantified (Oleson & Henry, 2009). The Dark Triad, for example, is characterized by a lack of empathy as well as callousness and manipulation towards both human and nonhuman animals (Kavanagh et al., 2013). Callousness has been studied extensively in relation to aggression among children (Frick et al., 2003) and has been associated with animal cruelty in children (Dadds, Whiting, & Hawes, 2006). Therefore, researchers should consider integrating research methodologies for callousness into the study of animal cruelty (e.g., Gupta, 2008).

Conversely, traits such as agreeableness, low extraversion, and narcissism have been associated with the opposition to the use of animals in research (Furnham et al., 2003). Eight studies in this review investigated personality variables to some extent, with the majority of the findings indicating an association between childhood animal cruelty and sadism (e.g., Hensley & Tallichet, 2005). Further research investigating individual differences and personality could open up new avenues in this area and provide potentially useful and significant discoveries, especially for the development of animal cruelty prevention programs. Moreover, neurobiology may be implicated in childhood animal cruelty (e.g., Tapia, 1971; Kruesi, 1989; Rogeness, 1984) and cannot be overlooked given recent research on the link with callousness and violent behavior (Rosell & Siever, 2015).
Despite an international representation of research in this area, the cultural spread was heavily biased towards the USA, which represented the majority of the studies included in this review (66.6%), followed by Australia (15.4%). Therefore, results from this review lack generalizability to other cultures and societies. Indeed, cultural differences in the treatment of animals appear to be an important factor (Serpell, 1996), and future research should take this into consideration.

The current research base relied heavily on retrospective reports, which are potentially biased or inaccurate. Retrospective reports have been used to identify risk factors and links between animal cruelty in childhood and future violence in adulthood (Flynn, 1999). However, the reliability and validity of long-term recall is questionable (Hardt & Rutter, 2004). Future studies should place greater value on observational and cognitive research methods to explore child-animal relationships in order to elevate the integrity of animal cruelty research. However, due to the sensitivity of this topic, childhood animal cruelty may be difficult to measure and experimental research may not be appropriate, which may explain the lack of studies currently investigating this topic. Future research needs to overcome these methodological difficulties to elevate the potential quality of future research in this area. One possibility is to measure children’s attitudes towards animal cruelty, which may be predictive of behavior (Hawkins & Williams, 2016; Hawkins, Williams, & Scottish SPCA, in press; Hawkins et al., under review).

Across this review, there was little consistency in the animal cruelty measures used, and there is currently no strong psychometric evidence to support the reliability or validity of these measures, thus limiting cross-study comparisons and the possibility of meta-analysis. Animal cruelty was commonly only one of many items on a checklist of behavioral symptoms, such as those items within the Child Behaviour Checklist (Achenbach, 1991). Future studies should aim to create standardized animal cruelty measures that are designed
specifically for animal cruelty in children. This would enable the use of consistent outcome measures and allow greater comparisons between studies.

Animal cruelty is one symptom of a wide range of behavioral problems, such as conduct disorder, and future research should explore this in greater depth: Is animal cruelty just one of a host of behavioral issues or is animal cruelty a specific form of behavior problem with a distinct causal pathway? Miller (2001) suggests that once a clearer picture of childhood animal cruelty has been established through further investigation, methods to prevent cruelty can be designed; childhood animal cruelty could potentially be prevented through animal cruelty prevention programs (Hawkins et al., in press).

Conclusion

This systematic review provides the first narrative meta-synthesis of empirical research on psychological risk factors for childhood animal cruelty. The results show a range of potential risk factors involved in childhood animal cruelty behavior but these factors are complex, multifaceted, and may be interrelated. It is important to highlight the lack of high-quality research in this area. Due to the significant implications for society, child wellbeing and safety, and animal welfare, it is important that future research addresses and improves upon the methodological flaws outlined in this review.

Research on childhood cruelty to animals seems to have come to a standstill during more recent years. The lack of standardized childhood animal cruelty measures as well as sensitivity issues may be impeding the advancement of research in this area. There are considerable advantages in addressing these problems. Research into childhood animal cruelty will not only provide significant information to advance our scientific understanding of animal cruelty behavior and child-animal relationships in general, but could also produce
significant benefits for developing animal cruelty prevention programs aimed at promoting compassionate and humane behavior towards animals.

References


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


Frick, P. J., Cornell, A. H., Barry, C. T., Bodin, S. D., & Dane, H. E. (2003). Callous-unemotional traits and conduct problems in the prediction of conduct problem severity,


Figure 1. Flowchart of the study selection process.