



BRILL

Society and Animals 15 (2007) 107-126

Society
& Animals
Journal of
Human-Animal Studies
www.brill.nl/soan

Bullying and Animal Abuse: Is There a Connection?

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Sent 23 December 2005, Accepted 17 October 2005

Abstract

In recent years, school violence has become an issue of great concern among psychologists, educators, and law-enforcement officials. The purpose of the current study was to examine the relationship between bullying, victimization, and abuse of nonhuman animals. The study assessed bullying and victimization experiences, animal abuse, and attitudes toward animals within a sample of 185 college males. Results of the study highlighted the important distinction between males involved in single episodes of animal abuse and those involved in multiple episodes of animal abuse. Further, results highlighted the significance of the bully/victim phenomenon with regard to participation in multiple acts of animal abuse. Those who were above the median with regard to both victimization and perpetration of physical bullying exhibited the highest rates of involvement in multiple acts of animal abuse and also exhibited the lowest levels of sensitivity with regard to cruelty-related attitudes pertaining to animals. The study discusses theoretical mechanisms linking bullying and animal abuse as well as directions for future research.

Keywords

bullying, animal abuse, animal cruelty, frequency, attitudes toward animals

Introduction

In recent years, an increased awareness of school violence has astonished our country. Dramatic examples such as the shooting rampage at Columbine High School in Littleton, Colorado, have created a sense of urgency among educators and researchers to examine school bullying and the factors that surround this phenomenon. Specifically, investigation of potential predictors of bullying, victimization, and the bully/victim cycle are of utmost interest. Because cruelty to nonhuman animals has been identified as having a strong connection to subsequent violence toward humans (Wright & Hensley, 2003), this behavior and its link to bullying warrants research attention.

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DOI: 10.1163/156853007X187081

It is well documented that children who are bullies hold positive attitudes toward violence (Hazler, Carney, Green, Powell, & Jolly, 1997; Olweus, 1978) and are more likely than their peers to engage in domestic violence, criminality, and substance abuse later in their lives (Farrington, 1993; Olweus, 1993; Ross, 1996). Victims, on the other hand, perform significantly more self-destructive actions than do their non-involved peers (Hazler et al.) and are more likely than non-bullied individuals to bring weapons to school to protect themselves (Carney & Merrell, 2002). A third subgroup, identified as the bully/victim, appears to be the most maladjusted of the three (Haynie, et al., 2001). These are individuals who have experienced both being a victim of bullying and being a bully toward others. According to Kumpulainen, Rasanen, and Henttonen (1999), they are the most likely of the three groups (bully, victim, bully/victim) to remain chronically involved in bullying throughout their entire lives.

In addition, research on animal abuse has associated violence toward animals with a host of indicators of pathological social development. According to Henry (2004a), individuals who reported abusing animals in childhood also reported greater involvement in a variety of delinquent behaviors in adolescence and adulthood—including higher rates of participation in violent, property, and drug-related crimes. Ascione (2001) summarizes the relationship between animal abuse and antisocial behavior. Moreover, Flynn (1999a) found that those who reported having engaged in childhood animal abuse also were much more likely to endorse other acts of violence. In particular, these individuals who engaged in cruelty to animals (who are less powerful beings than they) were much more likely to support violence against women and children (who are perceived as less powerful members of society).

Previous research on animal abuse has also highlighted the importance of victimization as a correlate of the perpetration of abuse toward animals. Deviney, Dickert, and Lockwood (1983) reported that animal abuse was more likely to occur in homes in which child abuse also occurred. This suggests that being a victim of maltreatment may increase one's risk of becoming a perpetrator of animal abuse. Consistent with this hypothesis, Ascione, Friedrich, Heath, and Hayashi (2003) reported elevated rates of animal abuse among a sample of children identified as having been victims of sexual abuse, and Henry (2006) found that self-reports of childhood maltreatment were associated with the early emergence of animal abuse. Taken together, these studies suggest that victims of maltreatment may themselves be at increased risk for the perpetration of violence toward other beings—in this case, toward animals.

Conceptually, the link between bullying and animal abuse appears clear: In both cases, aggression and/or cruelty are directed against a perceived weaker

being. Various theoretical viewpoints may help explain the link. For instance, Ascione (1993) stated that children who exhibit forms of violence might be experiencing a deficit in the development of empathy. This lack of empathy could serve as a marker of, and/or precursor to, other forms of violent behavior. From this perspective, both bullying and animal abuse would be indicative of deficiencies in empathy toward other living beings. In addition, social learning theory provides the explanation that children engage in abusive behaviors toward animals and other people because they have learned that violence and intimidation are appropriate means for social interaction. From this perspective, both bullying and animal abuse are behaviors that are acquired on the basis of observing others engage in such behaviors. These behaviors, if viewed as effective, would become incorporated into the individual's behavioral repertoire. Consistent with this model, Henry (2004b) reported that a history of observing animal abuse was strongly associated with a history of participation in animal abuse.

Although the link between bullying behavior and animal cruelty seems probable, the potential association has received minimal research attention. To our knowledge, only one study investigating this connection has been published. Utilizing a sample of 532 Italian children, Baldry (2005) examined how animal abuse, abuse at home, and school bullying relate. She found that boys and girls who reported participating in direct school bullying were twice as likely to have committed some form of animal abuse when compared to their non-bullying peers. Overall, her findings displayed an association between animal abuse and bullying, with a stronger relationship found with boys.

A second purpose of the present study was to examine the effect that frequency of participation in animal abuse has on the animal abuse/bullying relationship. Previous research (Flynn, 1999a, 1999b; Henry, 2004a, 2004b, 2006) has found that approximately one-third of college-aged men report having been involved in at least one act of animal abuse. Given this relatively high base rate, it is likely that some individuals identified as animal abusers in previous research engage in acts of animal cruelty only to a very limited extent. For example, a young male may engage in an act of animal cruelty, feel bad about the act, and never repeat the behavior again. In earlier research, this individual would be identified as an animal abuser by virtue of this single act. However, this one act of cruelty may not be indicative of a deeper psychological disturbance. To date, little research has addressed the degree to which frequency of involvement in animal abuse is indicative of psychopathology. In the current study, we hypothesized that the individuals who have engaged repeatedly in acts of animal abuse would be most at risk for exhibiting other indicators of disturbed social and psychological development. Specifically, we predicted that the relationship between animal abuse and involvement in

bullying would be strongest among those who reported involvement in multiple, rather than single, episodes of animal abuse. Further, based on the research reviewed earlier suggesting the greatest level of maladjustment among bully/victims (Haynie, et al., 2001; Kumpulainen, et al., 1999), we predicted that the highest rate of involvement in repetitive animal abuse would be found among the bully/victim group.

Individual differences in attitudes toward the treatment of animals have been the focus of several recent studies. A number of social and psychological correlates have been shown to be related to attitudes toward animals, including personality (Mathews & Herzog, 1997), empathy toward humans (Taylor & Signal, 2005; Henry, 2006), observation of acts of animal abuse (Henry, 2004a), and participation in animal abuse (Henry, 2004b). A third purpose of the current study was to explore attitudes toward animals as a function of both participation in animal abuse and involvement in bullying.

The methodology used in the current study was substantially retrospective. Participants were asked to report the types and extent of bullying they experienced or in which they participated during their school years; types of animal abuse in which they had ever engaged; and their current attitudes toward animals. As such, the design of this study did not allow for a determination of the temporal ordering of the onset of these behaviors. The purpose of this study was not to examine whether bullying led to animal abuse, whether animal abuse led to bullying, or whether both animal abuse and bullying result from some other factor. Rather, this study sought,

1. to examine the empirical relationships among reports of animal abuse and reports of bullying; and
2. to explore whether those relationships varied as a function of parameters of those phenomena, such as frequency of animal abuse or one's role as either perpetrator or victim of bullying.

Although there are limitations to reliance on retrospective reports (Henry, Caspi, Moffitt, & Silva, 1994), this methodology is commonly used in research on animal abuse. Retrospective reports of animal abuse have been shown to covary in meaningful ways with current attitudes toward animals (Henry, 2006), with current attitudes regarding familial violence (Flynn, 1999a), and with rural versus urban rearing environments (Tallichet & Hensley, 2005). Further, retrospective reports of animal abuse have been shown to differentiate violent from non-violent incarcerated offenders (Merz-Perez, Heide, & Silverman, 2001). These results, taken together, suggest that retrospective reports of this nature can be treated as meaningful correlates of other types of socially relevant behaviors and attitudes.

In summary, the purpose of the current study was to examine the relationship between bullying, victimization, and animal abuse. Is an individual who is willing to abuse animals at higher risk for abusing people? Only males were investigated in the present study because most research indicates that the base rate of animal abuse tends to be substantially lower among females than among males (Flynn, 1999a, 1999b; Henry, 2004a, 2004b, 2006.) It was hypothesized that males who mistreat animals would be more likely than non-abusers to engage in school bullying. In addition, it was expected that the more an individual engaged in animal abuse, the more likely he would be involved in bullying behaviors and/or the victimization process. Last, it was hypothesized that those who were identified as bully/victims would engage in multiple episodes of animal abuse, while their peers would more often be involved in no incidents or a single incident of animal abuse.

Methods

Participants

Participants in this study were 185 male students enrolled in sections of Introductory Psychology. Research participation was a requirement of the Introduction to Psychology course. The mean age of participants was 22.2 years ($SD = 4.90$), with a range of 18 to 48 years. Seventy-two % of participants identified themselves as White, 9% Hispanic, 8% Black, 9% Asian, 3% American Indian/Alaska Native, 2% Pacific Islander, and 5% Other. (These percentages sum to more than 100% because participants could identify themselves as members of more than one race/ethnicity group.)

Materials

Experiences with Animals survey. Participants' history of animal abuse was assessed using a modified version of the self-report survey employed by Flynn (1999a, 1999b), which in turn was an adaptation of the Boat Inventory on Animal-related Experiences (Boat, 1999). Modification of the survey involved the deletion of a section pertaining to sexual contact with animals. Self-reports of this type of behavior have been shown to yield very low base rates (Flynn, 1999a, 1999b). In the current study, the survey was comprised of two sections. The first section examined participants' pet ownership and attachment to pets. The second section explored whether the participant had ever engaged in animal abuse.

Participation in animal abuse. Four items on the survey assessed participation in animal abuse. Study participants were asked the following questions:

1. Have you ever intentionally killed your own or someone else's pet (other than to help the animal because it was hurt, old, or sick; to protect yourself or another person; or because they were farm animals always intended for slaughter)?
2. Have you ever intentionally killed a stray or wild animal (other than to help the animal because it was hurt, old, or sick; using traps or poisons to control rodent infestation; to protect yourself or another person; while hunting; or for food)?
3. Have you ever intentionally hurt or tortured a non-human animal for the purpose of teasing it or causing pain?
4. Have you ever tried to control or intimidate someone by threatening to hurt, or by actually hurting, an animal?

Participants who responded, "yes" to any of these items were considered to have engaged in animal abuse. Fifty-five participants (30%) were identified as having engaged in animal abuse. Among these 55 participants, 10 (18%) reported having killed a pet, 36 (65%) reported having killed a stray animal or an animal in the wild, 18 (33%) reported having tortured an animal, and 4 (7%) reported having tried to control someone by threatening to hurt, or hurting, an animal. (These sum to more than 55 because participants could report having engaged in more than one type of abuse behavior.)

In order to better understand the nature of the behaviors being reported, participants identified as having engaged in animal abuse were asked a series of follow-up questions. For example, they were asked to indicate the age at which they first engaged in that type of behavior. Response categories included "2-5 years," "6-12 years," "13-18 years," and "over 18 years." Responses were combined across the four types of animal abuse behavior. Specifically, the earliest age category at which any type of animal abuse occurred was taken as the age at which animal abuse first occurred. Thus, if participants indicated that they had first killed a stray or wild animal while between the ages of 6 and 12, and had subsequently tortured an animal while between the ages of 13 and 18, "6-12 years" would be taken as the age of first animal abuse. Analysis of this variable indicated that the majority of participants reported having first engaged in animal abuse between the ages of 6 and 12 (58%) or between the ages of 13 and 18 (32%). Only 5% of participants reported having first engaged in animal abuse prior to age 6, and only 5% reported having first engaged in animal abuse after the age of 18.

In order to examine the types of animals targeted in the acts of abuse, participants who were identified as having engaged in abuse were asked to iden-

tify the type of animal who was abused. Response options included (a) dogs; (b) cats; (c) other small animals (rodents, birds, reptiles, poultry); (d) large animals (horses, sheep, goats, cattle, donkey, pigs); and (e) other. Across the four types of animal abuse included in the survey, perpetrators of animal abuse most often stated that they had targeted small animals (75%), followed by cats (20%), dogs (16%), large animals (5%), and other (4%).¹ (These percentages sum to more than 100% because respondents could identify more than one type of animal targeted.)

Frequency of participation in animal abuse. If a participant was identified as having engaged in animal abuse, they were asked to indicate the number of separate incidents in which they were involved. For each type of animal abuse in which the participant indicated he had been involved, he was asked to indicate whether he had been involved in 1, 2, 3-5, or 6 or more separate incidents. A participant, who responded "yes" to more than one type of abuse or who indicated involvement in a single type of abuse on more than one occasion, was considered to have engaged in multiple acts of animal abuse. Of the 55 participants who reported engaging in animal abuse, 22 (40%) indicated that they had been involved in only a single act of abuse, and 33 (60%) indicated that they had been involved in multiple acts of abuse.

Attitudes toward the treatment of animals survey (ATTAS). A 23-item attitude scale was used to assess sensitivity to the treatment of animals (Henry, 2004a, 2004b, 2006). Participants were asked to indicate the extent to which they would be bothered by thinking about a particular type of treatment of an animal. Each item was phrased, "How much would it bother you to think about..." Items assessed a variety of types of treatment of animals such as failing to provide adequate food, shelter, or medical care; using animals in medical research; encouraging animals to fight; and killing or hurting an animal for no apparent reason. Items also assessed attitudes pertaining to companion animals (pet dogs, cats, rabbits); domestic stock animals (horses, cows, pigs.); and wild animals (deer, rabbit, squirrel).

Sample items from the ATTAS include,

1. How much would it bother you to think about someone intentionally encouraging, or causing, animals to fight one another (e.g., dog fighting, cock fighting, etc.)?
2. How much would it bother you to think about someone intentionally killing a companion animal (e.g., pet dog, cat, rabbit, etc.) other than to help the animal because it was hurt, old or sick? and
3. How much would it bother you to think about someone failing to provide medical care for a domestic stock animal that is clearly injured or ill?"

Participants responded to each item on a 5-point scale ranging from 1 "None at all" to 5 "A lot." Thus, higher scores reflected relatively more discomfort with the type of treatment specified.

On the basis of a previous factor analysis of the ATTAS (Henry, 2006), the items on the survey were divided into three subscales: Cruelty (8 items), Utilitarian (8 items), and Caregiving (7 items). Subscale scores were computed for each participant by averaging items within subscale. The Cruelty subscale assessed individual differences in attitudes regarding the intentional harm of animals for no apparent reason. High scores on the Cruelty subscale reflected discomfort with acts of pointless harm to animals. The Utilitarian subscale assessed individual differences in attitudes regarding the utilitarian use of animals as sources of food or as subjects for research. High scores on the Utilitarian subscale reflected discomfort with the use of animals as resources. The Caregiving subscale assessed individual differences in attitudes regarding a person's responsibilities for ensuring the safety and well being of an animal. High scores on the Caregiving subscale reflected discomfort with the failure to meet the basic needs of an animal. Henry lists items comprising each subscale and evidence of the validity of the subscales.

Complete ATTAS data were available for 179 participants. Mean scores for the Cruelty, Utilitarian, and Caregiving subscales were 3.96 (SD = 0.77), 2.14 (SD = 0.73), and 3.80 (SD = 0.69), respectively. Cronbach's alphas for the subscales ranged from 0.74 to 0.84.

Bully/Victim questionnaire. A participant's history of being a victim or perpetrator of either verbal or physical bullying was assessed using a 63-item questionnaire. This questionnaire was a modified version of the Bully/Victim Questionnaire (Olweus, 1993). The questionnaire was divided into three sections, assessing participants' experiences in elementary, middle, and high school. Within each section, participants were asked a series of questions assessing the extent to which they were victims of verbal bullying (5 items in each section); physical bullying (3 items in each section); the extent to which they were perpetrators of verbal bullying (5 items in each section); or physical bullying (3 items in each section).

Verbal bullying included behaviors such as name-calling; spreading lies or rumors; making hurtful comments regarding race/ethnicity; or making hurtful comments of a sexual nature. Within each section, participants were asked to indicate the frequency with which they were either victims or perpetrators of the particular type of verbal bullying. For each question, response options included 0 "never," 1 "once," 2 "2 or 3 times," 3 "Regularly (1-2 times per week)," and 4 "Frequently (several times per week)."

Physical bullying included behaviors such as hitting, kicking, pushing; stealing, destroying property; or being threatened or forced to do things.

Within each section, participants were asked to indicate the frequency with which they were either victims or perpetrators of the particular type of physical bullying. For each question, response options included 0 "never," 1 "once," 2 "2 or 3 times," 3 "Regularly (1-2 times per week)," and 4 "Frequently (several times per week)."

Procedure

Assessment occurred in a 2-hour session for groups of 15-30 participants at a time. Each participant was informed that all survey information would be held confidential; only participant numbers were utilized to track data. Completion of the surveys was done individually. The order of the surveys was counterbalanced within survey packets to control for order effects.

Results

Construction of Animal Abuse and Bullying Groups

The primary questions addressed in this study were

1. Did those who engaged in only a single act of animal abuse differ from those who never engaged in animal abuse with regard to bullying or victimization history? and
2. Did those who engaged in multiple acts of animal abuse differ from those who engaged in either one or no acts of animal abuse with regard to bullying or victimization history?

In order to assess the first of these questions, the 22 participants who reported engaging in a single act of animal abuse were compared to the 130 participants who reported never engaging in animal abuse. In order to address the second question, those who reported engaging in a single act of animal abuse were combined with those who reported never engaging in animal abuse. Thus, the 33 "multiple abuse" participants were compared to the 152 "single or no abuse" participants.

In order to construct victim and perpetrator groups for verbal and physical bullying, responses were summed across the three sections of the questionnaire. For example, to construct the "victim of verbal bullying" group, the items related to being a victim of verbal bullying were summed across the elementary school, middle school, and high school sections of the questionnaire. This summed value provided a global index of the extent to which the participant was a victim of verbal bullying throughout his school years. High scores on this global index could be attained by reporting either a relatively

small variety—but a high frequency—of bullying experiences or by reporting a wide variety—but low frequency—of bullying experiences. Of course, those who reported both a high variety and high frequency of bullying experiences would have the highest scores on this index. Groups were then defined by computing the median of the summed global index. Those above the median were labeled “high verbal bullying victims,” and those below the median were labeled “low verbal bullying victims.”² The same process was repeated to construct “physical bullying victim,” “verbal bullying perpetrator,” and “physical bullying perpetrator” groups.

Complete bullying/victim data were available for 184 participants. Scores on the “victim of verbal bullying” index ranged from 0 to 41 with a median of 8.0. Scores on the “victim of physical bullying” index ranged from 0 to 19 with a median of 2.0. Scores on the “perpetrator of verbal bullying” index ranged from 0 to 38 with a median of 5.0. Scores on the “perpetrator of physical bullying” index ranged from 0 to 24 with a median of 1.0.

Based on the procedure described above, 97 (53%) participants were included in the “low verbal bullying victims” group; 87 (47%) were included in the “high verbal bullying victims” group; 95 (52%) were classified as “low verbal bullying perpetrators”; and 89 (48%) were classified as “high verbal bullying perpetrators.” Eighty-nine (48%) participants were classified as “low physical bullying victims”; 95 (52%) were classified as “high physical bullying victims”; 107 (58%) were classified as “low physical bullying perpetrators”; and 77 (42%) were classified as “high physical bullying perpetrators.”

*Relationship between bullying and participation in single acts of animal abuse.*³ Chi-square tests of independence were used to examine the relationship between a history of bullying and one-time animal abuse. In this analysis, comparisons were made between those who reported having been involved in only a single incident of animal abuse and those who had never engaged in animal abuse. Results indicated that being a high victim or high perpetrator of physical or verbal bullying was not related to participation in a single act of animal abuse. Fourteen % of the “high victim of physical bullying” group, compared to 15% of the “low victim” group, were one-time animal abusers ($\chi^2 = 0.02$, *ns*). Fifteen % of the “high perpetrator of physical bullying” group, compared to 15% of the “low perpetrator” group, were one-time animal abusers ($\chi^2 = 0.00$, *ns*). Twelve % of the “high victim of verbal bullying” group, compared to 16% of the “low victim” group, were one-time animal abusers ($\chi^2 = 0.52$, *ns*). Fifteen % of the “high perpetrator of verbal bullying” group, compared to 14% of the “low perpetrator” group, were one-time animal abusers ($\chi^2 = 0.01$, *ns*).

Relationship between bullying and participation in multiple acts of animal abuse. Next, chi-square tests of independence were used to examine the relationship between a history of bullying and multiple acts of animal abuse. In this analysis, comparisons were made between those who reported having been involved in two or more acts of animal abuse and those who never engaged in animal abuse or engaged in animal abuse only once. Results are reported in Table 1 and indicated that victim and perpetrator status for both physical and verbal bullying are associated with an increased risk for engaging in multiple acts of animal abuse. Twenty-five % of the “high victim of physical bullying” group, 29% of the “high perpetrator of physical bullying” group, 24% of the “high victim of verbal bullying” group, and 24% of the “high perpetrator of verbal bullying” group reported engaging in multiple acts of animal abuse.

Table 1. Relationship between Physical and Verbal Bullying and Multiple Acts of Animal Abuse

		Participated in animal abuse two or more times	χ^2
Victim of physical bullying	Low n = 89	8 (9%)	8.47, p < .01
	High n = 95	24 (25%)	
Perpetrator of physical bullying	Low n = 107	10 (9%)	11.52, p < .01
	High n = 77	22 (29%)	
Victim of verbal bullying	Low n = 97	11 (11%)	5.23, p < .01
	High n = 87	23 (24%)	
Perpetrator of verbal bullying	Low n = 95	11 (12%)	4.62, p < .05
	High n = 90	21 (24%)	

In order to examine the combined effects of victimization and perpetration of physical bullying on involvement in animal abuse, bullying data were used to construct four groups:

1. those who were both low victims and perpetrators of physical bullying (low victim/low perpetrator, $n = 66$);
2. those who were high victims but low perpetrators of physical bullying (high victim/low perpetrator, $n = 41$);
3. those who were low victims but high perpetrators of physical bullying (low victim/high perpetrator, $n = 23$); and
4. those who were both high victims and high perpetrators of physical bullying (high victim/high perpetrator, $n = 54$).

A chi-square test of independence was then used to examine rate of involvement in multiple acts of animal abuse across these four groups. The high victim/high perpetrator group reported a significantly higher rate of multiple acts of animal abuse than did the other three groups. Thirty-three % of those in the "high victim/high perpetrator" group reported involvement in two or more acts of animal abuse. In comparison, multiple acts of animal abuse were reported by 6% of the "low victim/low perpetrator" group, 15% of the "high victim/low perpetrator" group, and 17% of the "low victim/high perpetrator" group ($\chi^2 = 15.67, p < .01$).

A similar chi-square test of independence was conducted to examine the combined effect of victimization and perpetration of verbal bullying on involvement in animal abuse. Again, four groups were constructed on the basis of the verbal bullying data: Those who were both low victims and perpetrators of verbal bullying (low victim/low perpetrator, $n = 68$), those who were high victims but low perpetrators of verbal bullying (high victim/low perpetrator, $n = 27$), those who were low victims but high perpetrators of verbal bullying (low victim/high perpetrator, $n = 29$), and those who were both high victims and high perpetrators of verbal bullying (high victim/high perpetrator $n = 60$). The chi-square revealed that, while the highest rate of multiple acts of animal abuse was found in the "high victim/high perpetrator" group, the relationship did not reach statistical significance. Twenty-seven % of those in the "high victim/high perpetrator" group reported involvement in two or more acts of animal abuse. In comparison, multiple acts of animal abuse were reported by 9% of the "low victim/low perpetrator" group, 19% of the "high victim/low perpetrator" group, and 17% of the "low victim/high perpetrator" group ($\chi^2 = 7.09, p = .07$).

Relationship between bullying, attitudes toward animals, and participation in multiple acts of animal abuse. A one-way multivariate ANOVA was used to

examine the relationship between participation in multiple acts of animal abuse and scores on the subscales of the ATTAS. Results of these analyses are presented in Table 2. Comparisons revealed that those who reported having been involved in two or more acts of animal abuse scored significantly lower on the Cruelty and Utilitarian subscales than did those who reported having been involved in only one or no acts of animal abuse. Recall that low scores on the Cruelty and Utilitarian subscales reflected less discomfort with the abuse or exploitation of animals. Thus, those who reported having been involved in two or more acts of animal abuse reported less distress regarding cruelty toward animals or the use of animals as resources than did those who reported having been involved in only one or no acts of animal abuse.

Previous analyses indicated that the highest rate of multiple acts of animal abuse occurred among those who were both high victims and high perpetrators of physical bullying. In order to further explore the effects of both victimization and perpetration, a 2 (high vs. low victim of physical bullying) X 2 (high vs. low perpetrator of physical bullying) multivariate ANOVA was conducted, with the subscales of the ATTAS as dependent variables. A significant victim by perpetrator interaction was found for the Cruelty subscale ($F(1, 169) = 5.16, p < .05$). Observation of group means revealed that those who were both high victims and high perpetrators of physical bullying had the lowest scores on the Cruelty subscale. Post-hoc analyses revealed that the "high victim/high perpetrator" group scored significantly lower on the Cruelty subscale than did the "high victim/low perpetrator" group ($t(90) = 2.58, p < .05$.) None of the other group-wise comparisons were statistically significant. Means and standard deviations on the Cruelty subscale are presented in Table 3.

Table 2. Mean (SD) ATTAS Subscale Scores by Participation In Animal Abuse

ATTAS subscales	Animal Abuse	
	0 or 1 act	2 or more acts
Cruelty ^a	4.03 (0.73)	3.63 (0.86)
Utilitarian ^b	2.19 (0.72)	1.87 (0.72)
Caregiving	3.81 (0.68)	3.79 (0.72)

^a $F(1, 172) = 6.87, p < .05$

^b $F(1, 172) = 5.05, p < .05$

Table 3. Mean (SD) ATTAS Cruelty Scores for Victims and Perpetrators of Physical Bullying

		Perpetrator of physical bullying	
		Low	High
Victim of physical bullying	Low	3.95 (0.76)	4.13 (0.66)
	High	4.18 (0.65)	3.76 (0.85)

Joint contributions of bullying and attitudes toward animal abuse. In order to examine the joint contributions of attitudes toward animal abuse and bullying behaviors to animal abuse, a logistic regression analysis was conducted with multiple incidents of animal abuse as the dependent variable. Scores on the Cruelty subscale of the ATTAS, victim and perpetrator status for verbal bullying and victim and perpetrator status for physical bullying, were entered as predictors. Results are presented in Table 4. A history of being a high perpetrator of physical bullying was related to multiple acts of animal abuse. The odds ratio for high perpetrators (2.85) indicated that being a high perpetrator of physical bullying was associated with increased risk for participation in multiple acts of animal abuse.

Table 4. Logistic Regression: ATTAS Subscale Scores and Bullying as Predictors of Participation in Multiple Acts of Animal Abuse

Predictors	Odds ratio	p-value
ATTAS Cruelty	0.63	.10
High victim of physical bullying	2.41	.11
High perpetrator of physical bullying	2.85	.04*
High victim of verbal bullying	1.77	.27
High perpetrator of verbal bullying	0.92	.86

* $p < .05$

Discussion

Two major patterns of findings emerged from this study. First, results of this study highlighted the important distinction between males involved in single episodes of animal abuse and those involved in multiple episodes of animal

abuse. Specifically, one-time animal abusers did not differ from non-offenders with regard to a history of perpetration or victimization of either physical or verbal bullying. In contrast, those involved in multiple episodes of animal abuse were more likely to report being above the median with regard to both victimization and perpetration of physical bullying and verbal bullying than were those who were either one-time animal abusers or non-abusers. Second, results also highlighted the significance of the bully/victim phenomenon with regard to participation in multiple acts of animal abuse. Those who were above the median with regard to both victimization and perpetration of physical bullying reported the highest rate of multiple acts of animal abuse. One-third of the men who were above the median with regard to both victimization and perpetration of physical bullying reported involvement in multiple acts of animal abuse. In addition, a significant victim X /perpetrator interaction revealed that the lowest scores on the ATTAS Cruelty subscale (which reflected more tolerance of animal cruelty) were found among those who were both high victims and high perpetrators of physical bullying.

Results of this study confirm and extend the findings of Baldry (2005). In that study, boys who were victims and perpetrators of either "direct" or "indirect" bullying were at increased risk for participation in at least one type of animal abuse. The results of the present study confirm that high levels of bullying and victimization are associated with involvement in animal abuse. However, the current findings suggest that primarily those who participated in multiple acts of animal abuse carry this relationship. It should be noted that the Baldry study was conducted on a large sample of Italian preadolescents. In contrast, the current study was conducted with a sample of American college students. It is possible that cultural differences or age differences between the samples (or both) may modify the relationship between bullying and animal abuse. Moreover, the discrepancy in the definitions of bullying used in the two studies could further explain the difference in results.

In the current study, 30% of males were identified as having been involved in one or more episodes of animal abuse. This relatively high rate of participation in animal abuse has been found in several other studies (Flynn, 1999a, 1999b; Henry, 2004a, 2004b, 2006.) It appears that some participation in animal abuse may be considered normative among American males. As such, involvement in a single episode of animal abuse may not be indicative of disturbed social or psychological development among American males. Cultural differences in the degree to which animal abuse is a useful indicator of disturbed social development deserve further study.

At a theoretical level, the relationship between bullying and animal abuse may be interpreted in a number of ways. First, participation in animal abuse

may lead to perpetration of bullying. This interpretation is consistent with the “graduation hypothesis” (Wright & Hensley, 2003) of the animal abuse-human violence relation. This hypothesis suggests that perpetration of acts of violence toward animals may desensitize the perpetrator to the effects of violence, as well as reinforcing violence as an effective means of social control. The net result is an increased probability of acting in a violent manner toward humans. The literature regarding the validity of the graduation hypothesis is mixed (Bierne, 2004). However, future research exploring the dynamics of onset of bullying and animal abuse will be necessary to determine whether this relation is, in fact, evidence of “graduation.”

An alternative to the graduation hypothesis is the “generalized deviance hypothesis.” This view suggests that a variety of forms of behavior are indicative of an underlying tendency toward antisocial conduct (Donovan & Jessor, 1985). These behaviors may include bullying and animal abuse, as well as involvement in other delinquent/antisocial behaviors such as substance abuse and crimes against property. Previous research (Arluke, Levin, Luke, & Ascione, 1999; Henry, 2004a) has shown that those who report involvement in animal abuse are also involved in a wide variety of other forms of antisocial behavior. Again, further research will be required to determine whether these relations reflect a progression of antisocial behavior or a generalized tendency toward antisocial behavior.

Previous research has emphasized that some victims of bullying are themselves perpetrators of bullying (Glover, Gough, Johnson, & Cartwright, 2000; Haynie et al., 2001). The current research confirmed the need to consider the impact on development when individuals are both victims and perpetrators of bullying. In the current study, those who were both above the median with regard to victimization and perpetration of physical bullying exhibited the highest rate of involvement in multiple episodes of animal abuse, as well as the most callous attitudes regarding cruelty to animals. The full spectrum of psychological characteristics that define the victim/perpetrator subgroup has yet to be thoroughly explored; however, Andreou (2000) identified a few characteristics that set these individuals apart from perpetrators only and victims only. These included negative views of self and others as well as use of a Machiavellian strategy in dealing with people. As suggested by Ma (2001), the relationship between victimization and perpetration of bullying can be understood in terms of social learning theory. Specifically, some victims of bullying (as well as other forms of maltreatment within the family) may become perpetrators of bullying because they have learned that violence and intimidation are appropriate and effective means of social interaction. In this regard, the extension of violence, intimidation, and deceit from human-human interactions to human-animal interactions is relatively straightforward.

An alternative, but not mutually exclusive, interpretation of the bully/victim phenomenon lies in the psychological motives that may be generated by victimization. It is possible that some victims of maltreatment (either in the form of bullying in the school or abuse within the family (Ascione et al., 2003; Henry, 2006) may respond to victimization by developing strong power-related fantasies and motives. Merz-Perez & Heide (2004) discuss the "displaced aggression" hypothesis of animal abuse. Children who are victimized may feel the need to exert power over other weaker individuals in an effort to protect themselves from the fear and shame resulting from their own perceived weakness. This need may express itself both in the form of violent fantasy as well as aggressive behavior. In this case, both perpetration of bullying and abuse of animals can be understood as a defense mechanism resulting from the individual's own victimization experiences. Consistent with this explanation, Henry (2006) reported that animal abusers scored higher on a measure of fantasy-proneness than did non-abusers. Although these data are suggestive, further research is needed to explore the role of aggressive fantasy and power motives in the emergence of animal abuse.

Results of this study also provide additional evidence regarding the validity of the ATTAS as an indicator of maladaptive attitudes toward animals. Henry (2006) found that scores on the ATTAS were significantly related to a measure of empathy toward humans. In the current study, scores on the Cruelty subscale significantly differentiated multiple abusers from others in the sample. It is worth noting that Henry reported that the Cruelty subscale of the ATTAS did not differentiate animal abusers from non-abusers. In that study, however, no distinction was made between one-time animal abusers and multiple abusers. When that distinction is made, as was the case in the current study, the relationship between cruelty attitudes and animal abuse emerges.

There are limitations to the current study that should be noted. As is the case with much of the existing research on animal abuse, the current results were based on retrospective recall. The limitations of retrospective recall are well documented (Henry et al., 1994). Studies examining the emergence of animal abuse in relation to bullying among preadolescent and adolescent samples would allow for a more detailed exploration of the developmental processes that link these two forms of behavior.

Similarly, it should be noted that while the survey that assessed animal abuse and the survey that assessed bullying covered roughly the same time frame (up to age 18), the ATTAS assessed current attitudes toward animals. Thus, on the basis of the present data, it is impossible to ascertain whether individual differences in attitudes preceded or followed the animal abuse and bullying experiences. Nonetheless, the current study demonstrated that a history of bullying and animal abuse is in fact associated with distinctive

attitudes about animals. Further research is needed to determine the developmental sequences that give rise to these associations.

Only men were included in the present study. The base rate of animal abuse tends to be substantially lower among women than among men (Flynn, 1999a, 1999b; Henry, 2004a, 2004b, 2006.) However, the relationship between bullying and animal abuse among women deserves attention. Research has indicated that the types of bullying experienced differ among boys and girls (Pelligrini, 2004). Specifically, bullying among girls tends to be focused on damaging relationships (behaviors such as gossiping, exclusion from the social group, and spreading rumors). In contrast, bullying among males tends to be more physical and overtly focused on establishing dominance. The extent to which the forms of bullying most common among females are related to animal abuse deserves empirical examination. However, such studies would need to involve very large samples because of the low rate of animal abuse among females.

Finally, the current study highlights directions for future research. While the relationship between bullying and animal abuse appears clear, the mechanisms linking the two need further clarification. Future research could examine the role of social learning, victimization, and power fantasies in the genesis of both bullying and animal abuse. Similarly, future research could focus on examining the timing of the onset of victimization (whether it be bullying or some other form of maltreatment) as it relates to the onset of animal abuse. In this regard, longitudinal research focusing on preadolescent and adolescent populations would be particularly valuable.

Conclusion

In summary, the current study confirmed and extended previous research on the relationship between bullying and animal abuse, in addition to highlighting the distinction between one-time animal abusers and those who engage in multiple acts of animal abuse. It appears that involvement in multiple acts of animal abuse is indicative of disturbed social relationships. Further research is needed to clarify the nature of the bullying-animal abuse relationship.

Acknowledgment

The authors would like to thank LaTerra Cole, Melissa DeChant, and Judith Oleson for their assistance in the collection of these data and Michelle Sandel, DVM, and two anonymous reviewers for their comments on earlier versions of the manuscript.

Notes

1. Two participants reported having abused an animal in the "other" category. Because of the structure of the survey, it was impossible to determine what type of animal was being referred to in these two cases. However, in both cases, participants also reported having abused an animal of at least one other type (i.e., dog, cat, small animal, or large animal.) Thus all 55 participants identified as animal abusers reported having abused dogs, cats, small animals, or large animals on at least one occasion.

2. Because the response scale for the bullying items was ordinal in nature, the decision was made to use the median, rather than the mean, as the measure of central tendency for this scale.

3. An alternative strategy for examining questions 1 and 2 would have been to conduct a single chi-square test of independence, with participants classified as non-abusers, one-time abusers, or multiple abusers. However, because we were making specific predictions regarding differences between one-time and multiple abusers, such an approach would have been inadequate. The chi-square statistic yielded by the test of independence is, in essence, an omnibus statistic. The test indicates whether or not a difference exists, but, when more than two groups are compared, it does not indicate *where* the difference lies. Conducting two separate tests of independence allowed for direct tests of our specific predictions regarding one-time versus non-abusers, and multiple abusers versus all others.

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