Is Animal Cruelty a Marker of Interpersonal Violence and Delinquency? Results of a Swiss National Self-Report Study

Sonia Lucia
University of Geneva

Martin Killias
University of Zürich

Objective: The study assesses the correlation between self-reported delinquency on one hand, and empathy and cruelty toward animals on the other hand, taking into account personal background, personality characteristics, and social context. It is based on the first representative sample of adolescents that allows studying this issue in Europe. *Method:* The study uses data from the 2006 Swiss National Self-Reported Delinquency Survey. The sample contains more than 3,600 pupils in 7th, 8th, and 9th grades. *Results:* The lifetime prevalence of animal cruelty in Swiss teenagers is 12%. Asked how they feel about people hurting animals, 2.4% answered animals deserve it or it is fun. Animal cruelty is correlated to various forms of offending. Youth who admit having maltreated animals have a higher likelihood of committing vandalism and serious violent acts. The correlation is weaker for minor violence and nonviolent offenses, such as serious property offenses and shoplifting. *Conclusion:* Animal cruelty goes along with higher risks of committing various types of offenses, but the odds are highest for offenses having a component of anger. Professionals should be aware that animal maltreatment is a sign of serious maladjustment.

Keywords: animal cruelty, empathy toward animals, juvenile, self-reported delinquency

In the biographies of seriously violent offenders past episodes of animal cruelty can often be found retrospectively. However, the nexus between violence against animals and offenses against humans and objects is far from evident. The purpose of the current study is to examine the correlation between self-reported delinquency and cruelty toward animals among a large sample of adolescents in a European country. So far, research on this issue is limited to the United State and few studies have looked at a nonclinical sample of teenagers.

From the learning theory perspective (Bandura, 1977), cruelty against animals and hu-

mans needs to be trained through several steps, since it is unlikely that extreme forms of violence occur without passing through intermediate forms. This requires observation and, possibly, practice and training including neutralization of inhibitions (Sykes & Matza, 1957) that otherwise would be activated by victims' crying and their calls for pity. Social support certainly plays a decisive role in this process: Social tolerance of cruelty against animals allows many individuals who, under other circumstances, would avoid committing cruel acts, to learn and practice very cruel treatment of animals. From this perspective, violence and cruelty against humans is nothing but the final step of a longer process in which animal cruelty usually preceded. Equally plausible is the opposite temporal order in the sense that persons who often commit violent acts against other humans can also be more easily cruel to animals.

Another theoretical perspective (Howells, Watt, Hall & Baldwin, 1997) considers cruelty against animals and human beings as two sides of a same coin, namely poor self-control (and poor anger control in particular). The cause of animal cruelty as well as of cruelty toward other

juveniles is, according to this perspective, the high level of intrapersonal aggression and poor anger control. This perspective does not rule out that subjects who behave very violently against humans can display model behavior toward animals.

In sum, the relationship between violence against people and animals may actually be far more complex than a simple one-way street, as suggested by the learning theory perspective. In the following paragraphs, we shall summarize the state of knowledge and, in the main part, test the different hypotheses using self-report data collected in 2006 within the framework of an International Self-Reported Delinquency survey (Killias, Aebi, Herrmann, Dilitz & Lucia, 2010). The Swiss questionnaire of that study includes a few items concerning animal cruelty inspired by the *Cruelty to Animals Inventory* developed by Dadds and colleagues (2004).

Animal cruelty has been associated with a distortion or inhibition of empathy (Ascione, 1993) and since 1987, cruelty to animals is one of the criteria for conduct disorder in the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 1987). Cruelty toward an animal is listed as the most serious conduct disorder among children, which usually appears in later childhood and concerns about 2% of those children (Dumas, 2007, pp. 324–343). However, the latest edition of the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2000) does not include animal abuse as a criterion of any disorder typically used to diagnose violent adults (e.g., antisocial personality disorder) (Volant, Johnson, Gullone & Coleman, 2008).

Most studies based on general population surveys are limited to adults. In 1997, Miller and Knutson (1997) interviewed 308 university undergraduates of whom 20.5% reported having actually engaged in one or more acts of animal cruelty. In a similar study, 267 undergraduates (aged between 21 and 25) at a public university in the South-eastern United States answered to a self-reported questionnaire (Flynn, 1999): 18% (34% of boys and 9% of girls) admitted to animal cruelty; nearly 40% were aged between 6 and 12 years when they first perpetrated animal cruelty. In a nationally representative sample of noninstitutionalized adults residing in the United States, structured psychiatric interviews ($N = 43,093$) conducted between 2001 and 2002 assessed lifetime prevalence of animal cruelty among U.S. adults at 1.8% (Vaughn et al., 2009). In her study, Baldry (2005) interviewed 532 children of about 12 years old at school. She found that over 40% of children admitted at least one type of animal abuse (46% of boys and 36% of girls). In the Edinburgh Study of Youth Transitions and Crime, questions about animal abuse have been asked. It is a prospective and longitudinal study of criminal offending among a large cohort of young people between ages 13 and 17 in the Scottish capital. In this survey young people were asked whether they had "hurt or injured any animals or birds on purpose" during the course of the previous year. The proportion of cohort members who reported committing animal cruelty remained relatively constant between ages 13 and 15 before declining significantly at both ages 16 and 17. In all, 13% of cohort members stated that they had hurt or injured an animal on purpose at some point between the ages of 13 and 17 (McVie, 2007). Apart this study, European research has, apparently, not devoted much attention to animal cruelty and no other information on teenagers is available so far.

Relationship Between Animal Cruelty and Interpersonal Violence

Several studies have looked at the relationship between animal cruelty and interpersonal violence. Peterson and Farrington (2007) have recently presented literature reviews of studies looking at this nexus. In the 11 studies they located, animal cruelty was measured retrospectively, that is, histories of animal cruelty during childhood were identified in individuals that, as adults, have committed serious acts of violence against persons, either in general or, as in six studies, in the domestic sphere. Merz-Perez and Heide (2004) located further studies finding incidents of animal cruelty in the lives of particularly violent offenders. Most of the studies used small *convenience samples* and, as mentioned above, few general population surveys have been designed until now to study this subject. Several North American studies have found a connection between domestic violence and animal abuse but most of them did not include a comparison group of women who had

not experienced domestic violence (Volant et al., 2008). To explore this comparison, Ascione et al. (2007) surveyed about 100 women recruited from domestic violence shelters in Utah and 120 nonshelter women from the community without a history of domestic violence. Significantly higher rates of partner pet abuse, partner threats of pet abuse, and pet abuse by other family members were found in the violent families compared with the non-domestic-violence group. Results show that a woman whose partner had threatened the pets was five times more likely to belong to the intimate partner violence group. Volant (2008) suggests that children may not just "graduate up" from animal abuse to interpersonal violence, but instead, that violence directed at humans and animals may be linked throughout the life span. Moreover, an association between experience of corporal punishment and childhood cruelty against animals has been demonstrated (Flynn, 1999). Baldry (2005) found that children who were exposed to both interparental violence and abuse by their parents reported significantly higher rates of animal abuse than those who only experienced interparental violence. McVie (2007) mentions that in the Edinburgh longitudinal study, the prevalence of victimization among the animal abusers was very high. An association between cruelty to animals and victimization has been observed also in our sample. Youth who admit having been assaulted during the last 12 months report twice as often having abused an animal (Pellaton, 2008).

Prospective studies that follow the offense record of those with a history of animal abuse tend to show a high rate of future offenses. A 10-year study of at-risk children showed that those who were classified at age 6–12 years as cruel to animals were more than twice as likely as others in the study to be subsequently referred to juvenile authorities for a violent offense (Becker, Herrera, McCloskey & Stuewig, 2004). Another longitudinal study to have looked at this problem over time is the Pittsburgh study (Loeber et al., 2005), which is also in line with the retrospective studies. They all suggest that animal cruelty may precede interpersonal violence. It remains unresolved, however, whether this relationship holds in a larger population sample and to what extent other factors intervene, such as poor anger control.

Correlates of Delinquency

Over decades, different theories have been developed to explain delinquency. Most of them have focused on a single variable. In this section, we will present the theories related to the variables used in our analyses.

Personality of the child.   For Gottfredson and Hirschi (1990), people with low self-control will tend to engage more frequently in criminal and deviant acts than others. They will be more impulsive, self-centered, and risk-taking. They also prefer simple tasks and physical activities and have a volatile temper.

Family context.   The role of the household composition on adolescents' behavior has often been studied. The evidence so far has shown a strong impact in the United States, but mixed results in Europe (Haas, Farrington, Killias & Sattar, 2004; Junger-Tas, Marshall & Ribeaud, 2003). The 1992 ISRD-1 had shown, in Switzerland, rather weak differences between children from broken homes and those from traditional households (Aebi, 1997). The situation was different in 2006 where significant differences between traditional and single-parent families were found (Aebi, Lucia & Egli, 2010; Killias et al., 2010).

According to Hirschi's (1969) social control theory, social bonds hinder individuals from engaging in delinquency. Therefore, attachment to parents and parental supervision are important.

The general strain theory states that the presence of negative stimuli increases strain and in turn raises the likelihood of delinquency. Agnew (1985), in his "revised strain theory of delinquency," suggests that individuals try to avoid painful or aversive situations. Adolescents are compelled to remain in certain environments, such as the family and school. If these environments are painful or aversive, it is difficult for the adolescents to escape. This blockage of pain-avoidance behavior is likely to be frustrating and may lead to illegal forms of attempts to escape or to anger-based delinquency. Strain can also be generated by the loss of something valuable, such as losing one's job, relationship separation, or the death of a loved person. Incapacity to cope with strain, frustration, and anger drive the person toward delinquency. Therefore, traumatic life events, such as loss of a parent, illness of a parent or divorce

of the parents, can lead to strain and thus increase the risk of delinquency. Previous analyses based on ISRD-2 data suggest that this variable is strongly related to delinquency and deviant behavior (Killias et al., 2010; Lucia, 2009; Lucia & Killias, in press).

School context. According to social control theory (Hirschi, 1969), adolescents firmly attached to institutions such as family and school are less likely to offend. Therefore, doing badly at school, a weak attachment to school, and playing truant should be related to delinquency.

Environmental context. The broken windows theory suggests that areas with high crime rates increase the risk that delinquency develops in the neighborhood. Moreover, neighborhood attachment is supposed to influence behavior of people living in a particular area (Sampson & Laub, 1997; Shaw & McKay, 1942).

As friends are an important part of life during adolescence, bonds with peers become salient. Routine activity theory (Cohen & Felson, 1979) states that certain types of routine activities increase the likelihood of being in situations conducive to crime. More than 60% of our respondents said they belonged to a group of friends. Juveniles belonging to a group of friends are more at risk of committing delinquent acts.

Purpose of the Study

The first objective of the current paper is to present the prevalence of youth having maltreated an animal in a large representative Swiss sample. Second, we describe the specificity of this behavioral problem (frequency, types of animal hurt, and reaction to this behavior). Third, we measure the association between the attitude to animals and different types of offenses. Finally, we shall try to assess the impact of animal cruelty on delinquency once the influence of other contributing factors is considered.

It is hypothesized that:

> *Hypothesis 1:* Offending rates are higher among juveniles having a positive attitude to cruelty toward animals (i.e., having no empathy for them) compared to those who view cruelty toward animals negatively.

> *Hypothesis 2:* Offending is more common among juveniles having hurt an animal at least once, compared to juveniles who have never committed such an act.

> *Hypothesis 3:* Attitudes (empathy) and actual cruelty toward animals will remain correlated to delinquency even if other variables are considered.

Method: The Swiss National Youth Survey

Participants and Procedure

The Swiss component of the Second International Self-Reported Delinquency Study (ISRD-2) is one of the first population studies to have ever looked at the correlation between interpersonal violence and animal cruelty. The sample was drawn from a list supplied by the Swiss Federal Statistical Office comprising all schools (public and private) with 7th to 9th grades, which corresponds roughly to ages 13 to 16 years, from 20 Swiss cantons. The list included information on the number of classes and students per canton, as well as per school. The sampling occurred in three steps: selection of the cantons, schools, and classes. During the first semester of 2006, 3,648 students from Grades 7 to 9 were interviewed in class. In all, 210 classes from 70 schools (of which two are private[1]) were drawn randomly following the procedure developed by the Federal Statistical Office for the regular international tests of students' performance (PISA). Only four schools refused to cooperate and two of these could be substituted by schools located in the same area (for details, see Killias et al., 2010). Students and parents (who had been previously informed) had the right to refuse cooperation, but in fact none of the parents and only one student refused. On the day of the interview, 6.3% were absent for a variety of reasons. The questionnaire was filled out online. This method is more appealing to students and produces results that are comparable to classical paper-pencil questionnaires, as a previous randomized trial had shown (Lucia, Herrmann & Killias, 2007). From the viewpoint of school principals, the

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[1] In Switzerland, private schools represent approximately 5% of all schools of the grades at stake. Taking size into account, two private schools in 70 matches their share in the Swiss educational system.

advantage was that teaching students how to fill out an online questionnaire is helpful for other tasks.

T1   Table 1 gives an overview of the distribution of the sample according to gender, age, grade, family structure, place of birth of the pupil, and migrant background. The data shows that the majority of respondents were born in Switzerland, but only 60% are Swiss. In our sample, about 77% live with both parents, and 40% belong to the first and second generation of migrants. These rates match findings from general population surveys.

This study was designed to analyze juvenile delinquency in a broad context of factors related to family life, school, leisure-time, and peers. The international study provided for a common set of questions that were used in all the 30 participating countries, but allowed national teams to include a few additional items. In this sense, the Swiss instrument included a few additional items on animal cruelty, inspired by the Cruelty to Animals Inventory developed by Dadds and colleagues (2004). In the discussion,

Table 1
Characteristics of the National Sample

	Unweighted[a]	%
Gender		
Female	1820	50.1
Male	1821	49.9
Family structure		
Traditional	2768	76.4
Broken home	876	23.6
Place of birth		
Switzerland	3190	89.8
Other	401	10.2
Migrant background		
Swiss	2067	60.2
1st and 2nd generation	1573	39.8
Age		
12	118	2.5
13	738	19.2
14	1202	33.0
15	1097	30.9
16	426	12.5
17	62	1.8
Grade		
7th	1238	33.4
8th	1239	34.4
9th	1171	32.2

Note. $N = 3648$.
[a] The rates given are weighted data, whereas the N given are unweighted.

we shall see how this set of items might be usefully completed in future studies.

Measures

Dependent variables. In the questionnaire, different questions were asked related to the commission of delinquency. For each behavior, participants were asked whether they had "ever" engaged in that behavior. If they indicated that they had engaged in that behavior, they were asked whether they had engaged in that behavior "during the previous 12 months." *Self-reported delinquency* is measured by five constructs: *minor violence* (group fighting and carrying a weapon), *serious violence* (snatching, robbery, and assault), *serious property* (burglary, bicycle/motor bike theft, car theft, and car break), *vandalism,* and *shoplifting* (e.g., "did you steal something from a shop or a department store?").

Independent variables. This section is organized in six subsections: personal background, personality of the child, family context, school context, environmental context, and attitude toward animals.

Personal background. *Gender* has always been an important variable in the study of delinquency. Another well-known variable is *grade* as delinquency and other forms of problem behavior change with school grade or class. At the same time, grade is obviously associated with age. In the present study, several variables are used to assess the respondents' history of *migration*. We consider as "nonmigrant" any respondent born in Switzerland, with at least one parent born in Switzerland. A respondent born abroad is also considered as "nonmigrant" if both parents were born in Switzerland. The others are considered as "first and second generation migrant." Moreover, socioeconomic status has been considered for many decades a key variable in delinquency. It has often been observed, however, that measuring social class is at least as intricate as measuring delinquency, particularly when it comes to juveniles whose social position is not yet defined beyond their parents' status and their school records. Socioeconomic status is measured here through two factors: family affluence and the parents' employment. To measure *family affluence*, a variable is created based on four variables, namely whether or not the respondent has a room of his

own at home, whether or not he owns a computer and a mobile phone, and the number of cars owned by the family (0, 1 or 2 cars, or more than 2). The high level of family affluence regroups pupils answering "yes" to all three common items and "the family owns more than 2 cars." The medium level of family affluence includes pupils having answered "yes" to all three common items and the family owns 1 or 2 cars. The low level of family affluence gathers families that do not have one of the four items (i.e., either they do not have a room on their own, or no computer, or no mobile phone, or the family does not own a car). *Parent's employment*: Respondents were asked whether the father/mother has a stable job, whether he or she is currently or frequently out of work, or whether he or she gets a pension or lives on social welfare. The latter category includes, therefore, parents who may be retired due to their age; however, given the relatively young age of the children in our sample, this would rarely be the case. It seems more plausible to believe that some of the parents included in this third category benefit from welfare payments to persons with disabilities. In the case of the mother, the questionnaire also included the possibility that she cares for the household without being employed. The two questions "father occupational status" and "mother occupational status" are dichotomized (stable work vs. unstable work). By stable work, we mean having a permanent job or an own business.

Personality of the child. The *self-control* scale is composed of 12 items based on 4 subscales: impulsivity (e.g., "I act spontaneously without thinking"), risk seeking (e.g., "I like to test my limits by taking risks"), self-centered (e.g., "If things I do upset people, it's their problem not mine"), volatile temper (e.g., "I lose my temper pretty easily"). The reliability of this 12-items scale (Cronbach's alpha) is 0.831. The scale is dichotomized at the quartile (high self-control vs. low self-control).

Family context. One question allowed measuring *household composition:* "Are you living with your own mother and father?" Respondents are dichotomized according to whether or not they live with both parents (0 = traditional family, 1 = broken homes).

Attachment to parents is measured by two questions tapping the relationship with father and mother. "Having a strong relationship"

means that the respondent answered: "I get along fine or rather fine with both parents"; "having a weak relationship" stands for the answer: "I do not get along so well or not at all with at least one of the two parents." For all offenses, juveniles with problematic relationships with one or both parents far more frequently admit having committed offenses than others. However, the difficulties with parents may not necessarily be the cause, but can just as well be the consequence of problem behavior, frequent absences from home or offending on the side of the juvenile. *Parental supervision* is measured by parents' knowledge of the respondent's friends, by whether or not they usually set a time by which they expect him or her to be back home and whether he or she respects the time given. The responses to the three questions are summed up on a scale ranging from 1 to 7 and dichotomized into "a weak relationship" (range 1 to 4) and "a strong relationship" (range 5 to 7). This turns out to be a very important variable, comparable to the quality of the relationship between the respondent and his or her parents. Again, adolescents whose parents are generally well informed about their whereabouts commit far less offenses than the others.

In the questionnaire, respondents were asked whether they had experienced any *traumatic life events* (death of a close family member, parents' divorce or separation, a serious illness or illness of a parent, having a parent with an alcohol or drug problem, or violence between parents). The variable is dichotomized (0–1 life events vs. at least 2 life events).

School context. To measure *attachment to school*, respondents are dichotomized according to whether or not they like going to school. In order to measure success at school, respondents are dichotomized according to whether or not they have ever *repeated a grade*. Finally, *truancy* is defined as missing school for at least a whole day without a legitimate excuse during the last 12 months.

Environmental context. The questionnaire included 13 items to measure attachment to neighborhood and signs of disorder in the neighborhood. Two subscales were constructed. *Neighborhood disorganization* includes six items (e.g., "There is a lot of crime in my neighborhood") with an internal consistency (alpha) of 0.80. Since neighborhood disorgani-

zation is not common in Switzerland, the scale is dichotomized as follows: whenever more than three items were answered "very true" or "true," the neighborhood is considered as disorganized, otherwise as organized (no vs. yes). The *neighborhood attachment* scale is composed of seven items (e.g., "If I had to move, I would miss the neighborhood"). The internal consistency of the attachment to neighborhood scale yields an alpha of 0.79. Whenever more than four items were answered "not at all true" or "not true," the respondent is rated as being strongly attached to his neighborhood (strong attachment vs. weak attachment).

In our data, more than 60% of the juveniles that participated in the survey said they belonged to a *group of friends*.

Attitude toward animals. The question related to *empathy toward animals* reads: "How do you feel about people hurting animals?" The possible answers were: (a) "very sad and upset"; (b) "I don't know"; (c) "they deserve it"; and (d) "it is fun." This question has been dichotomized (yes or indifferent vs. no).

Animal cruelty. Respondents were asked: "Have you ever hurt an animal on purpose?" Those who answered "yes" were asked how often they had done so (once or twice, three or more times), the type of animal they maltreated, and if another person was present. In this article,

we shall focus on *empathy toward animals* and *cruelty toward animals*.

Data Analysis

As cruelty toward animals is one of the neglected variables in the analysis of juvenile delinquency, the focus will be on descriptive statistics and cross-tabulations. Further, logistic regressions will be used to see if correlations between animal cruelty and delinquency persist once other important factors (as described above) are taken into account.

Results

Overview of the Animals-Related Variables and Delinquency

Table 2 summarizes descriptive results (by gender) of the five survey questions related to cruelty to animals. Among the 3,648 students, 17% of boys and 8% of girls (or 12% overall) admitted having intentionally maltreated an animal. Further, 5% of boys and 1.5% of girls reported having done this three times or more. Regarding the kind of animal that was maltreated, 29% reported cats or dogs, 18% fishes, frogs or lizards, 11% birds, and the other 41% include mostly insects (e.g., ants, flies) but also

Table 2
Prevalence of the Questions Related to the Attitude to Animals

Variable	Answers	%		
		Female	Male	Total
Empathy toward animals	It makes me sad and upset me	87.2	72.0	79.5
	I don't know	12.0	24.1	18.1
	Animals deserve it	0.3	0.8	0.6
	It's fun	0.6	3.1	1.8
Ever hurt an animal on purpose	No	92.1	83.5	87.9
	Yes	7.9	16.5	12.2
Cruelty toward animals	Never	92.1	83.4	87.8
	Once or twice	6.4	11.9	9.1
	Three to six times	0.7	1.5	1.1
	More than six times	0.9	3.2	2.0
Animals maltreated	Fish, lizards, frogs	15.4	19.4	18.2
	Birds	5.9	14.1	11.4
	Cat, dog, other type of pet animals	20.6	32.9	29.0
	Other	58.1	33.6	41.4
With whom	Alone	53.4	52.7	52.9
	In front of others	46.6	47.3	47.1

Note. N = 3648.

invertebrates (e.g., snails, slugs). To the question "Were you alone or with others?" 47.1% answered having acted with others and 52.9% alone.

If animal cruelty is relatively common, this does not mean that it is generally accepted. Only 4% of boys and 1% of girls (overall 2.4%) reported that animals "deserve" this kind of treatment or that "this is fun." A vast majority (80%) think this is awful. However, 24% of boys and 12% of girls (overall 18.1%) did not give a judgment. This suggests that silent acceptance and indifference may be more common than overt support.

T3   Table 3 presents lifetime and last-year rates of different types of self-reported offenses. Regarding serious interpersonal violence, 5% of boys and girls admitted having at least once in their life committed assault (with injury), snatching or robbery. Animal cruelty seems, therefore, more widespread than interpersonal violence. Unfortunately, the questions on animal cruelty were asked only for the entire lifetime and not for the last 12 months. We do not know, therefore, whether interpersonal violence may have become more frequent compared to animal cruelty in the recent past.

Bivariate Associations

In a next step, we shall look at the association between empathy and prevalence of self-reported delinquency. As the results in Table 4 illustrate, acceptance of animal cruelty goes along with higher rates of delinquency in general and of serious offenses in particular (i.e., vandalism, violent offenses, and serious property offenses). Not surprisingly, a positive atti-

T4

tude toward animal cruelty is associated with higher rates of violence against animals. Indeed, among respondents saying that animals deserve it or that it is fun, 48% admit having maltreated an animal at least once, with only 11% among them having empathy toward animals. In Table 4, respondents who expressed indifference toward animal cruelty are added to those who reject it. In other words, those in the right column are a small and fairly extreme group of 2.4% of the entire sample.

In a next step, we shall look at the correlation between actual animal cruelty and delinquency (see Table 5). We dichotomize between those who ever maltreated an animal and all the other respondents.

T5

As Table 5 illustrates, juveniles who maltreated animals more often admit to delinquent acts of all sorts. The difference is stronger for serious offenses (i.e., vandalism, violent offenses, serious property offenses) than for more common misdemeanors (such as shoplifting). This suggests that animal cruelty is closer to serious violence and other pathologies than to general behavior problems common during adolescence. Together, Tables 4 and 5 confirm the first and second hypothesis: juveniles who report no empathy toward animals or who report having hurt an animal at least once have higher rates of offenses compared to the rest of the sample. All differences are significant at $p < .05$.

The question remains, however, whether the association with delinquency holds once other factors, such as family and school variables, are taken into account. This question will be addressed in the following multivariate analyses.

Multivariate Analyses

In order to assess the impact of the several independent variables once the influence of other contributing factors have been considered, we conducted a series of logistic regression analyses. In the following models, all independent variables associated with any of the five dependent variables (i.e., five types of delinquency) with a p value smaller than 0.1 are taken into account. The independent variables considered are: gender, migrant background, self-control, family affluence, father and mother occupational status, relationship with parents, parental supervision, family composition, trau-

Table 3
Lifetime and Last Year Prevalence of Offenses (in %)

	Lifetime	Last year
Minor violent offenses[a]	21.0	13.1
Serious violent offenses[b]	5.5	2.6
Serious property offenses[c]	8.9	4.8
Vandalism	13.4	7.8
Shoplifting	23.6	9.1

Note. $N = 3648$.
[a] Group fight and carrying a weapon. [b] Snatching/ mugging, robbery/extortion, and assault. [c] Burglary, bicycle/motor bike theft, car theft, and car break.

Table 4
Prevalence of Self-Reported Delinquency (Last Year) and Empathy Toward Animals (in %)

| Youth reporting . . . | How do you feel about people hurting animals? | | Phi |
	This makes me sad and upsets me/indifferent	It is fun/animals deserve it	
Minor violence	12.7 (447)	26.7 (27)	0.064
Serious violence[a]	2.4 (90)	10.5 (11)	0.078
Serious property offenses[a]	4.4 (152)	16.3 (18)	0.085
Vandalism	7.1 (257)	32.5 (30)	0.143
Shoplifting	8.7 (300)	23.3 (22)	0.077
Injured or maltreated an animal	11.4 (401)	47.7 (43)	0.170

Note. $N = 3648$. All differences across columns significant at $p < .05$.
[a] One cell (25.0%) with less than 5 cases.

matic life events, school grade, attachment to school, having repeated a grade, truancy, problems of disorder in the neighborhood, attachment to the neighborhood, and having a group of friends. The regressions are first computed according to the "backward LR" method. This allowed removing the variables that were not significant at $p > .05$, and running a regression analysis according to the "enter method." The models presented in Table 6 are the final ones. Thus, the indicated effect sizes (odds ratios) take into account not only animal cruelty and empathy toward animals, but all 23 variables. As our variables are dichotomous, one category is compared to the other of the same variable, defined as the category of reference. An odds ratio above 1 indicates that a category has a higher offense rate than the reference category.

Table 6 addresses, in line with our third hypothesis, the question of whether attitudes (empathy) and actual cruelty toward animals will still be correlated to delinquency once the in-

Table 5
Prevalence of Self-Reported Delinquency (Last Year) and Actual Animal Cruelty (in %)

| Youth reporting . . . | Did you ever maltreat an animal? | | Phi |
	Never	At least once	
Minor violence	11.5 (359)	24.1 (111)	0.123
Serious violence	1.9 (65)	7.8 (36)	0.123
Serious property offenses	3.7 (113)	11.5 (55)	0.120
Vandalism	5.8 (189)	22.0 (96)	0.198
Shoplifting	8.1 (248)	16.1 (71)	0.090

Note. $N = 3648$. All differences across columns significant at $p < .05$.

fluence of other contributing factors is taken into account.

The effect size of animal cruelty on serious violence is the same as for gender (OR 3.16) and for self-control (OR 3.13). Other variables that are strongly associated with serious violence are traumatic life events (such as problems or violence between parents), weak parental supervision, and frequent truancy (OR of 2.01, 1.98, and 1.90). Thus, children who admit having maltreated animals have a three times higher likelihood of committing serious violent acts such as robbery, snatching, or assault (injury). On the other hand, several variables that were significant in the bivariate analysis are no longer significant, such as family composition and attachment to parents, school failure and attachment to school, problems in the neighborhood and social background (SES), and status as a migrant.

The fact that introducing animal cruelty reshapes our models so dramatically is a most important finding as such. This underlines how important considering histories of animal cruelty are in the analysis of violence and delinquency in general. In strength, it equals such well-established variables as gender and self-control.

It is interesting to consider in this context the effect sizes of animal cruelty and the other independent variables on other forms of delinquency. As Table 6 indicates, the odds ratios for animal cruelty are particularly strong also for vandalism (OR 3.35) and for serious violence (OR 3.16), but far less so for minor violence (OR 1.47) and nonviolent offenses, such as serious property offenses (OR 2.03) and shoplift-

Table 6

Logistic Regression of Five Self-Reported Offenses (Minor and Serious Violence, Vandalism, Shoplifting and Serious Property Offenses) Using 23 Independent Variables (Including Animal Cruelty and Empathy Toward Animals)

Independent variables	Dependent variables				
	Minor violence	Serious violence	Vandalism	Shoplifting	Serious property
Gender *(male* vs. *female)*	4.97	3.16	1.82	—	2.30
Self-control *(low* vs. *high)*	2.37	3.13	3.42	1.96	2.23
Truancy *(yes* vs. *no)*	1.78	1.90	2.17	2.27	2.28
Belongs to a group of peers *(yes* vs. *no)*	1.82	ns	2.22	2.28	2.45
Neighborhood problems *(yes* vs. *no)*	2.27	ns	2.01	1.68	2.88
Traumatic life events *(yes* vs. *no)*	1.52	2.01	1.59	1.50	1.62
Parental supervision *(weak* vs. *strong)*	1.37	1.98	1.50	ns	1.64
Cruelty toward animals *(never* vs. *at least once)*	**1.47**	**3.16**	**3.35**	**1.50**	**2.03**
Attachment to school *(weak* vs. *strong)*	1.36	ns	ns	1.39	ns
Attachment to parents *(weak* vs. *strong)*	ns	ns	ns	2.09	ns
In grade 8 or 9 *(vs. grade 7)*	1.36	—	ns	—	1.67
Empathy toward animals *(yes/indifferent* vs. *no)*	ns	ns	ns	ns	ns
Migrant *(vs. Swiss background)*	ns	ns	ns	ns	ns
SES middle-class *(vs. upper class)*	ns	ns	—	ns	ns
SES low *(vs. upper class)*	ns	ns	—	ns	ns
Family composition *(with others* vs. *with both parents)*	ns	—	ns	ns	ns
School failure *(yes* vs. *no)*	ns	ns	—	—	ns
Attachment to neighborhood *(no* vs. *yes)*	ns	ns	ns	ns	ns
Father out of work/irregular *(vs. works normally)*	—	—	—	ns	—
Father retired *(vs. works normally)*	—	—	—	ns	—
Mother out of work/irregular *(vs. works normally)*	—	—	—	ns	—
Mother retired *(vs. works normally)*	—	—	—	ns	—
Mother at home *(vs. works normally)*	—	—	—	ns	—
Nagelkerke R^2 (in %)	25.2	20.7	24.5	14.5	20.7

Note. $N = 3648$. Indicated effect sizes are odds ratios. The regressions were first computed according to the "backward LR" method and then according to the "enter method." The models presented in Table 6 are the final ones. (–) = Variable not included in the model because it is not significantly associated with the dependent variable in the bivariate analysis ($p \geq$ .10); ns = Variable included but not significant ($p > .05$) in the multivariate analysis.

ing (OR 1.50). This suggests that animal cruelty goes along with offenses with an obvious component of anger and violence, such as vandalism (violence against objects) or serious aggression. Nonviolent offenses are also correlated with animal cruelty, but often more so with other variables such as gender, self-control, or peer groups. This finding points to the possibility that animal cruelty is, beyond a marker of risks of future interpersonal violence, also part of general deviance and that it probably shares many roots with antisocial behavior in general. Another important point is that animal cruelty is significant in all the five models, whereas empathy toward animals is not significant in any of the models. As one might have expected, acting out is more important than mere attitude.

Discussion

This paper sheds further light on animal cruelty issues in Switzerland, among youths aged 13–16 years. As no national data were previously available, these findings have filled a gap. About 12% admitted having at least once maltreated an animal intentionally (17% of boys and 8% of girls). These rates are lower than in most studies that interviewed young adults and children (Baldry, 2005; Flynn, 1999; Miller & Knutson, 1997), but higher than those found by Vaughn (2009) and very similar to those found by McVie (2007). This is not surprising as the definition of animal cruelty is different as well as the age group. Therefore, we do not suggest that these differences should be taken as a sign that animal cruelty is more or less frequent on

either side of the ocean. The rate of animal abuse by males is greater than that of females, which is consistent with those studies. The results show that children committing animal cruelty also develop delinquent behavior. This is also the case once other important factors related to delinquency are considered. Moreover, animal cruelty is strongly related to offenses with an obvious component of anger, such as vandalism and serious offenses. Indeed, youths who have been cruel to animals are three times as likely to have committed vandalism and serious offenses but only twice or less as likely to commit serious property offenses, minor violence, and shoplifting. However, the attitude to animals (empathy) is never significantly correlated to any particular offense once other variables are taken into consideration. The results found here match studies that observed histories of animal cruelty in the lives of seriously violent offenders. Beyond these retrospective observations, they suggest that the correlation between animal cruelty and serious interpersonal violence is not spurious, but survives controls of many otherwise important variables of delinquency and violence. Even if the models presented in Table 6 explain at best 25% of total variance, this certainly merits attention in future research.

Limitations

The study is cross-sectional and, thus, we cannot assess causality beyond observing many correlations. It would be necessary to carry out a longitudinal study in order to better observe causal relations. As Peterson and Farrington (2007) and Loeber et al. (2005) note, animal cruelty during childhood may be a "marker" of risks for later serious violence, regardless of the issue of "causality." The problem remains, however, whether violence against animals and against humans are manifestations of one common trait—for example, poor anger control or high aggression—or if one causes the other, as the learning theory perspective suggests.

Implications

Discovery of children maltreating animals should be seen as a step toward delinquency and receive serious attention. Moreover, knowing that aggressiveness is a stable disorder over

time (Dumas, 2000, and Loeber, 1982), professionals should be aware that animal maltreatment is a sign of serious maladjustment that can persist. Dumas (2000) found that 75% of the children who were aggressive at the beginning of the school year are still so at the end of it.

As no other source of such information is available, self-reported surveys are a reliable method to disclose animal cruelty. Such acts are committed secretly and rarely prosecuted, as indicated by Baldry (2005). Ideally, the issue of causality should be studied in future longitudinal research. However, given the immediate realistic possibilities, an improvement of items concerning animal cruelty should be envisaged in future surveys of self-reported delinquency. First of all, incidents of animal cruelty should be more carefully located in time. Even if questions remain retrospective, it is important to know at about what age respondents maltreated animals. The data reported here does not allow determining with certainty that acts of animal cruelty preceded more serious forms of interpersonal violence, although such an assumption may seem plausible. The answers category should also allow a better estimation. Indeed, in the questionnaire, the possible answers did not allow us to make the difference between those having done it once or twice. Further, it would be desirable to know more about the way the animal was maltreated as well as the circumstances under which it happened. What was, for example, the type of relationship the respondent had with the animal? Was it the child's pet? Does the child inflict cruelty on its pet or upon other animals? Finally, some information on animals around the respondent might also be helpful since children who have no access to animals have no opportunities to maltreat them or, conversely, have not had the occasion to develop meaningful relationships with them. All these questions could have usefully been asked already in the Swiss ISRD-2 survey. However, the international (common) instrument left only limited space for additional items. Given the importance of animal cruelty in the explanation of violence, we hope, however, that in future self-report studies, more attention will be awarded to this variable.

Conclusion

The main strength of this study is that it is a large representative random sample and, to our knowledge, the first national study on this subject in Europe. Moreover, most of the studies are based on clinical samples of youth or on retrospective studies among offenders, and cruelty to animals is usually not studied as a possible indicator of aggressive problem behavior. In sum, we found that animal cruelty goes along with higher risks of committing various types of offenses, but the odds are highest for offenses having a component of anger.

References

Aebi, M. F. (1997). Famille dissociée et criminalité. Le cas suisse. *Kriminologisches Bulletin de Criminologie, 23,* 53–80.

Aebi, M. F., Lucia, S., & Egli, N. M. (2010). Famille et délinquance : La situation en Suisse selon les sondages de délinquance juvénile autoreportée (ISRD) de 1992 et de 2006 [Family and delinquency: The situation in Switzerland according to self-reported juvenile delinquency surveys from 1992 to 2006]. In A. Kuhn, F. Vogler, S. Steiner, V. Dittmann & C. Bessler (Eds.), *Junge Menschen und Kriminalität/Les jeunes et la criminalité* (pp. 163–207). Berne: Stämpfli.

Agnew, R. (1985). A revised strain theory of delinquency. *Social Forces, 64,* 151–167.

American Psychiatric Association. (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed., revised). Washington, DC: Author.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text revision). Washington, DC: Author.

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

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

Baldry, A. C. (2005). Animal abuse among preadolescents directly and indirectly victimized at school and at home. *Criminal Behavior and Mental Health, 15,* 97–100.

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

Becker, K. D., Herrera, V. M., McCloskey, L. A., & Stuewig, J. (2004). A study of firesetting and animal cruelty in children: Family influences and adolescent outcomes. *Journal of the American Academy of Child & Adolescent Psychiatry, 43,* 905–912.

Cohen, L. E., & Felson, M. (1979). Social change and crime rates trend: A routine activity approach. *American Sociological Review, 44,* 636–655.

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

Dumas, J. (2000). *L'enfant violent* [Agressive children]. *Le connaître, l'aider, l'aimer.* Paris, France: Bayard.

Dumas, J. E. (2007). *Psychopathologie de l'enfant et de l'adolescent* [Abnormal Child and Adolescent Psychology] (3rd ed.). Paris, Bruxelles: De Boeck.

Flynn, C. (1999). Exploring the link between corporal punishment and children's cruelty to animals. *Journal of Marriage and the Family, 61,* 971–981.

Gottfredson, M. R., & Hirschi, T. (1990). *A general theory of crime.* Stanford, CA: Stanford University Press.

Haas, H., Farrington, D. P., Killias, M., & Sattar, G. (2004). The impact of different family configurations on delinquency. *British Journal of Criminology, 44,* 520–532.

Hirschi, T. (1969). *Causes of delinquency.* Berkeley, CA: University of California Press.

Howells, K., Watt, B., Hall, G., & Baldwin, S. (1997). Developing programs for violent offenders. *Legal and Criminological Psychology, 2,* 117–128.

Junger-Tas, J., Marshall, I., & Ribeaud, D. (2003). *Delinquency in an international perspective: The international self-reported delinquency study.* Monsey, NY: Criminal Justice press/Den Haag: Kugler.

Killias, M., Aebi, M. F., Herrmann, L., Dilitz, C., & Lucia, S. (2010). Switzerland. In J. Junger-Tas, I. Haen-Marshall, D. Enzmann, M. Killias, M. Steketee & B. Gruszcynska (Eds.), *Juvenile delinquency in Europe and beyond: Results of the second international self-report delinquency study* (pp. 79–95). Dordrecht, The Netherlands: Springer.

Loeber, R. (1982). The stability of antisocial and delinquent child behavior: A review. *Child Development, 53,* 1431–1446.

Loeber, R., Pardini, D., Homish, D. L., Wei, E. H., Crawford, A. M., Farrington, D. P., . . . Rosenfed, R. (2005). The prediction of violence and homicide in young men. *Journal of Consulting and Clinical Psychology, 73*(6), 1074–1088.

Lucia, S. (2009). *Multi-dimensional approach to bullying* (Doctoral dissertation). University of Lausanne, Lausanne, Switzerland. http://my.unil.ch/serval/document/BIB_7FD423C858DD.pdf

Lucia, S., Herrmann, L., & Killias, M. (2007). How important are interview methods and questionnaire designs in research on self-reported juvenile delinquency? An experimental comparison of Internet vs. paper-and-pencil questionnaires and different definitions of the reference period. *Journal of Experimental Criminology, 3,* 39–64.

Lucia, S., & Killias, M. (in press). Gewalt und belastende Kindheitserlebnisse: Neue Aspekte anhand der internationalen Self-Report-Studie (ISRD-2). *Trauma und Gewalt,* 5. 2011 pages: 36–43.

McVie, S. (2007). Animal abuse amongst young people aged 13 to 17: Trends, trajectories and links with other offending. University of Edinburgh. http://www.law.ed.ac.uk/cls/esytc/findings/RSPCA.pdf

Merz-Perez, L., & Heide, K. M. (2004). *Animal cruelty. Pathway to violence against people.* Oxford, United Kingdom: Altamira Press.

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

Pellaton, K. (2008). *Cruauté envers les animaux et délinquance* (Unpublished master's thesis). Institut de Criminologie et de Droit Pénal: Lausanne, Switzerland.

Peterson, M. L., & Farrington, D. P. (2007). Cruelty to animals and violence to people. *Victims and Offenders, 2,* 21–43.

Sampson, R. J., & Laub, J. H. (1997). A life-course theory of cumulative disadvantage and the stability of delinquency. In T. Thornberry (Ed.), *Developmental theories of crime and delinquency.* New Brunswick, NJ: Transaction Publishers.

Shaw, C. R., & McKay, H. D. (1942). *Juvenile delinquency in urban areas.* Chicago, IL: University of Chicago Press.

Sykes, G. M., & Matza, D. (1957). Techniques of neutralization: A theory of delinquency. *American Sociological Review, 22,* 664–667.

Vaughn, M. G., Fu, Q., DeLisi, M., Beaver, K. M., Perron, B. E., Terrell, K., . . . Howard, M. O. (2009). Correlates of cruelty to animals in the Unites States: Results from the national epidemiologic survey on alcohol and related condition. *Journal of Psychiatric Research, 43,* 1213–1218.

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

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