Animal Cruelty and Psychiatric Disorders

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Animal cruelty in childhood, although generally viewed as abnormal or deviant, for years was not considered symptomatic of any particular psychiatric disorder. Although animal cruelty is currently used as a diagnostic criterion for conduct disorder, research establishing the diagnostic significance of this behavior is essentially nonexistent. In the current study, investigators tested the hypothesis that a history of substantial animal cruelty is associated with a diagnosis of antisocial personality disorder (APD) and looked for associations with other disorders commonly diagnosed in a population of criminal defendants. Forty-eight subjects, criminal defendants who had histories of substantial animal cruelty, were matched with defendants without this history. Data were systematically obtained from the files by using four specifically designed data retrieval outlines. A history of animal cruelty during childhood was significantly associated with APD, antisocial personality traits, and polysubstance abuse. Mental retardation, psychotic disorders, and alcohol abuse showed no such association.

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In 1806, Phillipe Pinel[1] developed the diagnostic concept of "mania without delirium," considered a forerunner of today's antisocial personality disorder (APD). One of his two examples of this disorder involved a man who showed extreme aggression against both people and animals and who eventually killed a person. Several notorious mass and multiple murderers have had a history of animal cruelty in childhood.[2–4] A recent article by Johnson and Becker[5] describes nine case histories of adolescents with prominent sadistic sexual fantasies, who talked about single or serial killings. Three of the nine persons had histories of animal cruelty. Besides these individual case reports, in several studies a history of animal cruelty was found to be associated with aggression against people.[6–17] A Swiss study of children[18] who engaged in animal cruelty and aggressive behavior confirmed the association, at least in part, between sadistic behavior against animals and early childhood trauma. The important point, however, is that even though animal cruelty is accepted today as a diagnostic criterion for conduct disorder and therefore APD, its association with these or any psychiatric disorders has not been firmly established.

During the 1980s, Felthous and others[12–17] conducted several early studies that consistently showed a relationship between a history of cruelty to animals and later aggression against people. The most definitive study to date was conducted by Kellert and Felthous,[15] who interviewed some of the most recurrently violent men (i.e., men with a history of violent acts whose aggressive behavior persisted during incarceration) within the federal prison system and compared these violent criminal offenders with nonviolent criminals and with noncriminals. Results of this study showed that those men with a high rate of recurrent and serious aggression had histories of a larger number of episodes of animal cruelty in childhood in comparison with those who were nonaggressive, based on independent ratings. The association between a history of substantial cruelty to animals (i.e., serious and recurrent cruelty, as defined later in the article) and later aggression against people was also confirmed in a second publication of the findings in this same study.[16] This investigation was important in emphasizing an adequate definition of animal cruelty and the nature of the aggressive behavior against people. Although many of the criminals who had been cruel to animals showed behavior typical of an aggressive psychopath or at least typical of the presence of an APD, there was no attempt in that study to examine the subjects diagnostically.

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Animal cruelty in childhood, although generally considered to be abnormal or deviant, for years was not considered symptomatic of any particular psychiatric disorder. Despite the inclusion of other behavior, cruelty to animals was not mentioned as a symptom or even an associated factor of any disorder in DSM-III.[19] In 1987, however, this behavior was included in the revised third edition, as a criterion for conduct disorder and for APD,[20] and it was retained as a criterion in the fourth edition.[21] Developments in biological psychiatry and research suggest the importance of serotonergic systems in aggressive behavior and impulsivity, including cruelty toward animals.[22–24] Nonetheless, research establishing the diagnostic significance of this behavior is essentially nonexistent. Although cruelty to animals has not been given diagnostic significance for disorders other than Conduct Disorder and APD in the DSMs, the behavior has been reported in men with persecutory delusions.[25]

The tested hypothesis in this study was that a history of substantial cruelty to animals in childhood is associated with a diagnosis of APD in adults. The study also afforded an opportunity to test whether this behavior is associated with other mental disorders or conditions commonly diagnosed in criminal defendants.

Methodology

Index and Control Cases

We tested the hypothesis that a history of substantial animal cruelty is associated with a diagnosis of APD by comparing, through retrospective forensic chart review, the diagnoses in 48 men who had this history with 48 men without such a history. All subjects in the index group were criminal defendants with a recorded history of substantial cruelty to animals, defined as "a pattern of deliberately, repeatedly, and unnecessarily hurting vertebrate animals in a manner likely to cause serious injury" (Ref. 16, p 57) Before initiation, the study was approved by the Institutional Review Board of the University of Texas Medical School, Galveston.

Selection of Index and Control Cases

We identified 48 men with a history of cruelty to animals by reviewing records of all criminal forensic evaluations conducted by the county psychiatrist for Galveston County, Texas, from January 1984 through December 1996. For most evaluees in both groups, the forensic issue was competency to stand trial, although sanity was also a recurrent question. Those in the control group were matched for sex, race, age, and year of examination and had no history whatsoever of animal cruelty, having answered negatively, as documented, to three separate questions about animal cruelty during their forensic evaluation. Matched control subjects were selected from the files of criminal defendants evaluated within the same calendar year and belonging to the same racial or ethnic group and age group (i.e., plus or minus five years). The search for control subjects was initiated by the random drawing of a letter of the alphabet, after which the first file pulled was that of a subject whose last name began with the letter and who had been evaluated in the same calendar year as the corresponding study subject. If the defendant whose last name began with this letter did not fulfill the criteria to be a matching control subject, the search was continued in alphabetical order.

No subjects were excluded based on diagnosis. Subjects with files with incomplete information on items listed in data retrieval outlines, however, were excluded. Any subject with some history of animal abuse or neglect who did not meet the threshold definition for substantial cruelty to animals was not included in either group. Subjects too psychotic or disorganized to provide historical background would not have had data on file to permit assignment to either group. Also, subjects already included in the study who had been reevaluated forensically at a later time were not included in the study a second time.

The Original Forensic Evaluation

A description of any criminal forensic evaluation should convey the types of data that were on file and available for the study. Because the evaluations were performed only for forensic purposes, they did not follow a research protocol. Accordingly, evaluations were individualized to the specific forensic diagnostic needs of each evaluee. Nonetheless, a core battery of structured interviews was used for nearly every defendant. This included a history of prior neurologic and behavioral problems from an interview outline entitled "Early Childhood Behaviors," an interview schedule on "Demographics and Family Background," and a comprehensive "Mental Status Examination." During the inquiry about early behavior, most defendants were asked three questions

regarding animal cruelty, and typically those who reported a history of some animal cruelty were then interviewed in depth with the animal-relations section of the interview schedule that had been used in the aforementioned Kellert and Felthous[15] animal cruelty study. Occasionally, a defendant was so extremely disturbed that he was unable to cooperate with a structured interview. In such cases, the disturbed subject was not asked about animal cruelty. The history of present illness and the defendant's understanding of his legal situation were also included in the formal written reports.

Many but not all defendants underwent psychological testing to clarify further the diagnosis and to assess psychological strengths and weaknesses. Specific tests selected depended on the diagnostic question to be resolved. Much less commonly, other diagnostic procedures were ordered on an individual basis (e.g., computed tomographic scan, electroencephalogram, specific blood studies).

When available, the following reports and documents were also read: statement of indictment, police reports, and criminal records provided by the district attorney and Texas Department of Public Safety. In some cases, a parent, spouse, or witnesses were interviewed for collateral, confirmatory, or early background information. Parents or other primary family members were then provided an opportunity to confirm or deny the defendant's history, including his account of animal cruelty.

Diagnoses established by the forensic evaluator followed the criteria established by the American Psychiatric Association in its official diagnostic manuals. Because these evaluations were conducted over the time span from 1984 through 1996, DSM III[19] criteria were used until DSM III-R[20] criteria were published in 1987, and DSM III-R criteria were applied until DSM-IV[21] became available in 1994, after which, criteria of the latest manual were used. Diagnoses were supported by specific signs and symptoms that corresponded to diagnostic criteria in the respective manual.

Typically, a forensic evaluation required two, sometimes three, clinical interviews with the defendant, with each interview lasting between 1 and 3 hours. Some evaluations were accomplished within a shorter time frame, and others took much longer.

Procedure for Data Collection and Analysis

Data were systematically retrieved from the files in both groups by using four retrieval outlines: demographic data, animal cruelty, diagnostic profile, and criminal history. When registering diagnoses, we attempted to verify the diagnosis independently, on the basis of recorded diagnostic criteria. Verification of a diagnosis of APD and antisocial personality traits was made without using the history of cruelty, when present. After data were collected on respective theme outlines, they were entered into a computer for collation and analysis.

Most comparisons between groups were made using the chi-square test of independence with correction for continuity. When the numbers were very low, the Fisher exact probability test was used. Because of the small sample sizes, the power to detect differences was limited. Because multiple comparisons were made between groups there is some possibility of inflated significance, although for the diagnostic comparisons the classifications were often mutually exclusive and thus were less likely to lead to correlated positive findings. We set the error rate at $\alpha = .01$ for each analysis of statistical significance, to minimize the risk of Type I error.

Results

Demographic characteristics for the control group were matched as closely as possible to the characteristics of subjects in the study group (Table 1). The study and control groups had comparable mean ages (31.65 and 31.75 years, respectively) and age ranges. Differences in demographic characteristics between groups were statistically insignificant. In a single instance, a Hispanic subject was matched with a white subject. All other subjects were matched for race and ethnicity. It is evident that social adjustment and the general level of functioning of subjects in both the study and control groups were comparable and generally poor.

Psychiatric diagnoses in the two groups were similar and typical of the most frequently encountered diagnoses in this defendant population. The two groups showed no significant differences in the numbers of defendants with psychotic disorders and mental retardation and in the prevalence of alcohol abuse and dependence. Group differences were not found for less-frequently encountered disorders: adjustment disorder, dysthymia, depressive disorders, cognitive disorders and dementias, anxiety disorders, bipolar affective disorder, sexual disorders, and dissociative disorders. However, the group of subjects with a history of animal cruelty showed a signif-

Table 1 Demographics of Study and Control Groups

Variable	Study Group (n = 48)	Control Group (n = 48)	Significance
Age (years)			
Mean	31.65	31.75	
Range	17–62	18–50	
Race/ethnicity			
White	13 (27.1)	14 (29.2)	χ^2 = .1279; df = 2; p = .9380
Black	29 (60.4)	29 (60.4)	
Hispanic	6 (12.5)	5 (10.4)	
Employed before arrest	12 (25)	17 (35.4)	χ^2 = .7905; p = .3739
Marital status			
Single	32 (66.7)	30 (62.5)	χ^2 = .8044; df = 2; p = .6688
Divorced	11 (22.9)	10 (20.8)	
Married/common law	5 (10.4)	8 (16.7)	

Data are number of subjects with percentage of total group shown in parentheses.

icantly higher prevalence of polysubstance abuse and dependence. This difference was not observed in subjects who had abused only one substance but was noted in those who had used multiple drugs.

The diagnosis of APD was significantly more frequent in the animal cruelty group (Table 2). Thus, our hypothesis was confirmed, at least in this selected population of male criminal defendants. Antisocial personality traits were also significantly more frequent in the group with a history of animal cruelty.

Other personality disorders, including mixed personality disorder, were not found significantly more frequently in the study group. This latter group of personality-disordered subjects included evaluees with diagnoses of borderline personality disorder, paranoid personality disorder, schizotypal personality disorder, and various types of mixed personality disorder. Table 2 shows that the percentage of subjects with APD in the group who had a history of substantial animal cruelty was exactly the same as

Table 2 Diagnoses in Study and Control Groups

	Study Group		Control Group		
	N	%	N	%	Significance
Psychotic disorders	7	14.6	10	20.8	χ^2 = .2859; p = .5928
Mental retardation	7	14.6	9	18.8	χ^2 = .0750; p = .7842
Alcohol abuse/dependence	16	33.3	19	39.6	χ^2 = .1799; p = .6715
Substance abuse/dependence					
Single	6	12.5	9	18.8	χ^2 = .3160; p = .5740
Poly	18	37.5	4	18.3	χ^2 = 9.9656; p = .0016
Total	24	50.0	13	27.1	χ^2 = 4.3976; p = .0360
Depressive disorder	0	0	1	2.1	Fisher, p = .99
Bipolar affective disorder	0	0	1	2.1	Fisher, p = .99
Anxiety disorders	0	0	2	4.2	Fisher, p = .4947
Dementia/"organic" conditions	4	8.3	6	12.5	χ^2 = .1116; p = .7383
Dysthymia	4	8.3	1	2.1	χ^2 = .8440; p = .3583
Adjustment disorder	1	2.1	1	2.1	Fisher, p = .99
Sexual disorders	0	0	2	4.2	Fisher, p = .4947
Dissociative disorders	1	2.1	0	0	Fisher, p = .99
Malingering	9	18.8	4	8.3	χ^2 = 1.4235; p = .2328
Antisocial personality disorder	18	37.5	4	8.3	χ^2 = 9.9656; p = .0016
Antisocial personality traits	8	16.7	0	0	Fisher, p = .0057
Other personality disorders					
Personality disorders	4	8.3	2	4.1	Fisher, p = .6673
Mixed	14	29.2	7	14.6	χ^2 = .1943; p = .1385
Total	18	37.5	9	18.8	χ^2 = 3.2979; p = .0694

Polysubstance abuse, APD, and antisocial personality traits show the strongest correlation with a history of substantial cruelty to animals. In both groups, n = 48.

Table 3 Personality Disorders

Character Disorder	Study Group		Control Group		Significance
	n	%	*n*	%	
Antisocial personality disorder	18	37.5	4	8.3	$\chi^2 = 9.9656$; $p = .0016$
Borderline personality disorder	3	6.3	1	2.1	Fisher, $p = .6170$
Paranoid personality disorder	1	2.1	0	.0	Fisher, $p = .99$
Schizotypal personality disorder	0	0	1	2.1	Fisher, NS $p = .99$
Antisocial personality traits	8	16.7	0	.0	Fisher, $p = .0057$
Borderline personality traits	1	2.1	0	.0	Fisher, $p = .99$
Paranoid personality traits	1	2.1	0	.0	Fisher, $p = .99$
Schizotypal personality traits	2	4.2	0	.0	Fisher, $p = .4947$
Mixed PD with antisocial features	12	25	6	12.5	$\chi^2 = 1.7094$; $p = .1911$
Mixed PD without antisocial features	2	4.2	1	2.1	Fisher, $p = .99$
All character pathology with antisocial traits (APD+ASPT+Mixed PD with AS features)	38	79.2	10	20.8	$\chi^2 = 30.3750$; $p < .0001$
All PD with antisocial features	30	62.5	10	20.8	$\chi^2 = 15.4714$; $p < .0001$
All personality disorders	36	75	13	27.1	$\chi^2 = 20.1754$; $p < .0001$

Wherever personality disorders or traits include APD or antisocial personality traits, the category gains significance in its association with animal cruelty. In both groups, $n = 48$. PD, personality disorder; ASPT, antisocial personality traits.

that for those with other personality disorders (37.5%)—a little more than one-third. The association between animal cruelty and other personality disorders was not significant. Antisocial personality traits showed a strong correlation, and the correlation with APD was stronger yet.

In an attempt to gain better understanding of the correlation between animal cruelty and various types of pathologic character traits, we more closely examined various groupings of personality disorders and traits (Table 3). We considered the possibility that some subjects with antisocial personality traits would possibly have qualified for the diagnosis of APD, if more information had been available at the time of evaluation. Based on this assumption, an artificial group of characterologically disordered subjects with antisocial features was created. It included subjects with a clearly established APD, antisocial personality traits (ASPT), and mixed personality disorder (Mixed PD) with antisocial features, listed in Table 3 as "all character pathology with antisocial traits (APD+ASPT+Mixed PD with AS features)" This included 79.2 percent of the study group, but only 20.8 percent of the control group. The difference was significant, although this was a *post hoc* grouping. Another group was formed excluding subjects with antisocial traits and focusing only on personality disorders with antisocial components, listed in Table 3 as "all PD with antisocial features." This included 62.5 percent of the study group, but only 20.8 percent of the control group. Although this was also a *post hoc* grouping, the same level of significance was found.

Another category consisted of all personality disorders, including subjects with APD, borderline personality disorder, schizotypal personality disorder, paranoid personality disorder, and mixed personality disorder, with and without antisocial features. The study group had 75 percent in this category, whereas the control group had only 27.1 percent. This difference was statistically significant.

A closer look at defendants with diagnoses of APD revealed interesting, but not unexpected, data about comorbidities. Table 4 demonstrates that substance use disorders and malingering were over-represented in the study group.

Discussion

This study confirmed the hypothesis that APD is associated with a history of cruelty to animals. Results also demonstrated significant association of an-

Table 4 APD with Comorbidity

Disorder	Study Group ($n = 18$)	Control Group ($n = 4$)
Malingering	5	1
Alcohol dependence	5	3
Substance dependence	9	1*
Schizophrenia	3	0
Dysthymic disorder	2	0
Organic condition	2	1

* Dependence on a single substance.

imal cruelty with antisocial personality traits and polysubstance abuse.

To our knowledge, this is the first study with matched control subjects that demonstrates a statistically significant correlation between history of cruelty to animals in childhood and a diagnosis of APD in adulthood. Typically, animal cruelty is one of several antisocial behaviors related to conduct disorder in childhood, and diagnosis of conduct disorder is in turn a prerequisite for the diagnosis of APD in adulthood.[20,21,26–30] Because earlier prospective, longitudinal studies systematically examined other antisocial behavior, such as stealing, impulsivity, aggressive actions, disobedience, cheating, defiance, profanity, destruction of school materials, and general cruelty and bullying, but not animal cruelty, the results of the present study suggest the importance of including animal cruelty, adequately defined, in future prospective longitudinal studies of the evolution of delinquent disordered behavior in childhood to more fixed and serious patterns of pathologic behavior in adults.

Various publications have emphasized different core features of APD. Robbins[31] points to the aggressive behavior and disregard for social norms. Quay[32] stresses the stimulation-seeking drive of the antisocial. Smetana *et al.*[33] underscore the antisocial person's impaired moral development. Eysenck[34] stresses extroversion and failure to learn from experience. Venables[35] focuses attention on the antisocial person's reduced capacity to experience fear. Thus, a history of substantial animal cruelty is not only consistent with precursory and essential dimensions of APD, it can serve also as a probe for eliciting information about these important psychological qualities.

Several limitations of this study must be acknowledged. First, initial identification of the presence of substantial cruelty to animals, indeed all the data, was based on chart review. Because the defendants had been evaluated for forensic and not research purposes, only those who acknowledged animal cruelty during initial screening underwent an in-depth interview for animal cruelty. Nonetheless, virtually all subjects in this group of defendants were asked consistently, and in the same manner, three questions regarding cruelty to animals. Second, the forensic practitioner who established the diagnoses was generally the same interviewer who had elicited the history of animal cruelty, and these were therefore not totally independent determinations. We offset this possible bias by assuring that the investigator who retrieved, organized, and analyzed the data had not been involved in the original forensic evaluations. Therefore, he was able to make independent diagnostic judgments by reviewing information in files without using the history of animal cruelty as a diagnostic criterion. Thirdly, in most of the cases, the history of animal cruelty was elicited only from the subject himself. However, on several occasions in which close family members were interviewed, they confirmed with specific examples the subject's history of animal cruelty. (This is interesting, because episodes of cruelty are not usually perpetrated in front of family members.) Fourth, a risk in conducting pretrial evaluations is that disclosure of sensitive historical information would be affected by the subject's understandable concern about his upcoming trial. Finally, because this study involved only a relatively small number of male criminal defendants in a local jurisdiction, caution must be used about generalizing and applying conclusions to the general population.

The possibility that excluding evaluees could affect the study results warrants acknowledgment. Although specific numbers were not available after the study's completion, the number of potential subjects excluded based on incomplete information or active psychosis during interviews was sufficiently small. It is very doubtful, on the one hand, that these exclusions would have affected the study results. On the other hand, the group of subjects who had some history of cruelty but whose cruelty did not meet the threshold definition of severity and recurrence was substantially larger than the index and control groups, accounting for most of the evaluees. This was not unexpected, however, because the base rate for prevalence of infrequent or minor abuses is probably rather high in a forensic, or even the general, population.

Because the diagnosis of personality disorder is usually not critical in itself to addressing a legal matter, such as competency to stand trial, evaluations for personality disorders were not exhaustive. As already mentioned in the Results section, it is conceivable that several subjects were more characterologically disturbed than was made evident in these diagnostic interviews, even with the use of psychological testing. Therefore, we assume that by using DSM criteria in this study, pathologic disorders may have been underdiagnosed. Thus, it is not surprising that individ-

uals with character disorders, including antisocial personality traits, APD, and mixed personality disorder with antisocial features, collectively all showed a higher incidence of animal cruelty.

Even though results of this study support an association between cruelty and APD, with only 37.5 percent of the cruelty group having this diagnosis, cruelty should not be considered to be diagnostic of APD any more than any other single behavioral criterion is diagnostic of this disorder. This study's emphasis on cruelty should not diminish the importance of identifying Clecklian core defects of psychopathology, a constellation of multiple behavioral criteria, in establishing the diagnosis.

A recent study by Miller and Knutson,[36] on first impression, appears to contradict results of the present study, as well as those of earlier studies pointing to an association between parental abuse in childhood, cruelty to animals, and aggressive or antisocial behavior in general. Their study of 314 prisoners appears to support a relationship between physical abuse and aggressive behavior, but not between animal cruelty and aggressive behavior in general or having been physically abused. More precisely, Miller and Knutson conclude: "In general, the findings were consistent with the hypothesis that there is an association between punitive childhood histories and antisocial behavior but not consistent with the hypothesis that exposure to animal cruelty is importantly related to antisocial behavior or child mistreatment" (Ref. 36, p 59).

On careful reading of this article, however, the study results do not contradict the earlier findings of Felthous,[13] Felthous and Kellert,[17] or the present study. None of these studies concluded that exposure to animal cruelty was related to having been abused or other aggressive and antisocial behavior. After finding an association between the number of cruelties perpetrated by the individual with other aggressive acts in adulthood and with a history of abusive upbringing,[16] Felthous and Kellert[17] addressed the question of whether individuals with a history of "substantial cruelty to animals" (pp 56–7) tend to be more aggressive in general, substantial cruelty to animals being "a pattern of deliberately, repeatedly, and unnecessarily hurting vertebrate animals in a manner likely to cause serious injury" (Ref. 17, p 57). As in the present study, when the same definition and animal relations interview were applied, every individual identified as cruel had himself repeatedly and gratuitously inflicted serious injury and death on cats or dogs, if not on other mammals, as well.

Although this present study did not examine history of physical abuse or aggressive behavior in general, results are not inconsistent with those studies that support a relationship between having been physically abused in childhood, antisocial/aggressive behavior in general, and substantial cruelty to animals, sufficiently defined. The important finding in the present study, not addressed in the other studies, is the association between substantial animal cruelty and APD.

Our findings are consistent with the results of a study by Yarvis,[37] who classified 100 men who committed homicide into seven groups based on core features. Most closely corresponding to APD, each subject in group A ($n = 20$) had poor interpersonal relationships, poor impulse control, chronic alienation, and pervasive antisocial behavior. Although only one of several elevated childhood behavioral items, cruelty to animals was by far highest in this group (15.8%). Group B ($n = 20$), with personality dysfunction and psychotic disturbance, had 5 percent of subjects with a history of animal cruelty and Group E ($n = 18$), with both substance abuse and antisocial behavior, had 5.9 percent. Subjects in the four remaining groups had no history of animal cruelty. These results suggest that a history of childhood cruelty to animals is associated with serious character disorder and APD in particular.

Another significant finding of the present study is that the history of animal cruelty was more frequent in all subjects with personality disorders, regardless of the nature of the personality disorder. This raises the troubling possibility that animal cruelty may be related more to character disorders in general and not very specifically to APD. However, we believe this finding is probably due to the predominance of APD among the various personality disorders represented in this group.

The history of animal cruelty was more frequent in those with a diagnosis of malingering. In a few of these cases, the animal cruelty history was confirmed by collateral interviews and was therefore not part of the malingered presentation. There was no significant correlation between animal cruelty and psychotic disorders, mental retardation, alcohol abuse, or alcohol dependence. A significant and rather interesting positive correlation was observed between polysubstance abuse and dependence and a history of

animal cruelty. Both of these behaviors may be associated with APD, which has been shown to correlate negatively with depression.[29] This latter correlation could explain the relatively small number of subjects with a diagnosis of affective spectrum disorders. O'Boyle and Barret[38] and O'Boyle[39] found a correlation of impulsivity and more severe character disorder with multiple substance dependence.

We must emphasize that animal cruelty can occur as an isolated act associated with a psychotic mental state.[25] These incidents are less frequent than the recurrent, antisocial pattern registered in this study. Thus, although this study found no correlation with psychotic disorders, it does not contradict the possibility that isolated acts of cruelty can be related to the psychotically disturbed state of mind in individual cases. Because grossly psychotic defendants were excluded, this study would not have identified acts of cruelty committed by acutely psychotically disturbed individuals.

Rather than merely using a history of animal cruelty in a check list of items to establish a history of earlier Conduct Disorder and present APD, clinicians are advised to obtain a more detailed and meaningful account of this phenomenon before attaching diagnostic significance in individual cases. Frequency, severity, and nature of cruelty; types of animals mistreated; and motivation should be inquired about and documented. This history, sufficiently complete, will then often provide useful information about how the individual has handled aggressive impulses at various stages of psychosocial development or during episodes of mental disturbance.

Further research is indicated and, in studies of APD, improved methodology should include history of animal cruelty as part of the diagnostic assessment. Long-term prospective studies of behaviorally disordered and aggressive children and youths should include animal cruelty among the behavior observed and monitored over time, not just as a behavioral sign of APD *per se*, but as a probe for specific psychopathologic dimensions of psychopathy.

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