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To cite this article: Keri B. Burchfield (2016): The Sociology of Animal Crime: An Examination of Incidents and Arrests in Chicago, Deviant Behavior

To link to this article: <http://dx.doi.org/10.1080/01639625.2015.1026769>



Published online: 10 Feb 2016.



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The Sociology of Animal Crime: An Examination of Incidents and Arrests in Chicago

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ABSTRACT

This study seeks to sociologically examine the patterns of animal crime in one large American city. Using Chicago Police Department animal crimes data, this research analyzes the types of crimes perpetrated, characteristics related to animal crime, and patterns of arrest. Findings indicate that a majority of animal crime was classified as abuse/neglect. High animal crime areas had higher rates of crime, more socioeconomic hardship, and more African-American residents. Compared to abuse/neglect, animal fighting was more likely to occur in community areas with more socioeconomic hardship, and animal crimes were more likely to result in arrest when they occurred in areas with more hardship.

ARTICLE HISTORY

Received 17 September
2014
Accepted 1 February 2015

In the past 10–15 years, perhaps with the revelations of animal torture publicized from Michael Vick's Bad Newz kennels or the popularity of shows like "Animal Cops," public attention, and in turn criminology, have slowly turned toward the problem of animal crime. It is problematic for many reasons, including disagreement about what forms of animal treatment constitute a crime and the lack of a universal definition of animal crime. Perhaps most importantly, the problem of animal crime suffers from limited theory, data, and research examining broad patterns of animal cruelty and crime.

Animal crime, including neglect, cruelty, fighting, and other forms of abuse, is often conceptualized as a form of psychopathology, and so offenders are classified as "sick" people, relegated to the province of psychological study (Flynn 2012). Thus, although the connection between animal crime and human violence has been theorized for hundreds of years and many contemporary empirical studies document this link, especially within families, broader patterns of animal crime and their relationship to a variety of structural variables have been under-examined (Bierne 2002). However, in recent years, sociologists interested in this topic have issued a call for more research that treats animal crime as a significant social problem worthy of study in its own right. A sociological approach to the study of animal crime will reveal broader patterns of animal abuse, demonstrate connections between animal abuse and other crimes and structural correlates, and ultimately allow for a fuller understanding of crime and violence in our society.

Recognizing the need for research that goes beyond individual-level explanations of animal crime, the current study seeks to examine the patterns of animal crime in one large American city, Chicago. Using Chicago Police Department data of all animal crimes in a ten-year period, this research analyzes the types of animal crimes perpetrated, crime- and community-related characteristics of animal crime, and patterns of arrest. Further, it offers the first test of the utility of a general criminological theory, social disorganization theory, for the study of animal crime.

Background

The study of crime can be difficult for a variety of reasons, not the least of which is the problem of obtaining valid and reliable data. However, that difficulty is enhanced when the criminal behavior in question has not been fully examined from an academic perspective. Such has been the case with animal crime. Although animal cruelty has long been recognized as a social and legal problem, with laws in place as far back as the 1800s criminalizing animal neglect, abuse, and fighting, and now with all 50 states having felony laws against animal cruelty, this concern has not been reflected in the academic literature. Almost thirty years ago, Bryant (1979:399) castigated criminologists and their brethren in sociology for ignoring the “zoological connection,” and for tending to “ignore, or to neglect (some critics might say deservedly so) the influence of animals, or their import for, our social behavior, our relationships with other humans, and the directions which our social enterprise often takes.” In one of the few texts advocating for a sociological understanding of animal crime, Flynn (2012) lays out several reasons why violence against animals has been ignored, including that: other issues, particularly violence toward humans, is seen as more important; few cases of animal abuse are ever reported; animals, as victims, cannot speak for themselves; and crimes against animals are seen as isolated, individualistic incidents (see also Arluke and Luke 1997). The following sections review the prior research conducted within the psychologically informed “Link” framework, the need for a sociological understanding of animal crime, and prior theory and research that examines sociological correlates of animal crime, including social disorganization and other features of the community context.

The psychology of animal crime: The “link” between animal abuse and human violence

Accordingly, what we do know about animals and crime has generally come from the field of psychology. This research frames our understanding of animal crime within the putative link between violence against animals and human violence (Bierne 1999, 2002; Flynn 2001). Thus, animal cruelty is seen as significant only because it may be associated with later forms of violence against people. This idea is not new, with philosophers and artists at least as far back as the eighteenth century recognizing the impact that animal cruelty might have on one’s treatment of fellow humans (Gullone 2012). Whether the connection between animal cruelty and human violence is causal or indicative of some other underlying pathology, the research around this connection is commonly referred to as “the link” and is arguably the most well-publicized topic in the field of animal cruelty and crime (Flynn 2012). There are many important findings to come out of the Link research, and they will be summarized below.

First, in general, there is a well-documented association between animal abuse and other forms of violence (DeMello 2012; Flynn 2012). The first studies to examine this connection compared the childhood histories of violent criminals, including murderers and sex offenders, to non-criminals, and revealed that violent criminals often report more animal cruelty in their childhood. This finding has been documented in numerous studies utilizing surveys of incarcerated offenders (Kellert and Felthous 1985; Tallichet and Hensley 2004), reviews of clinical histories of school shooters (Verlinden, Hersen, and Thomas 2000), as well as interviews and case studies of serial killers (Ressler, Burgess, and Douglas 1988; Wright and Hensley 2003) dating back to the 1980s.

However, conclusions drawn from this early research are not simple, as they implicate a variety of relationships, including but not limited to those between child abuse, animal abuse, and domestic violence, as well as those between the perpetration and witnessing of animal abuse and later forms of violence (DeGue and DeLillo 2009). More recent research has explored the nuances of the connection between animal abuse and human violence by examining it within the context of family violence. These studies reveal the complex interplay of exposure to animal cruelty and spousal violence, childhood physical and sexual abuse victimization, and perpetration of childhood animal cruelty (Ascione et al. 2003; Baldry 2003; DeGue and DiLillo 2009; Thompson and Gullone

2006). In a study of boys in a residential treatment facility, those who had exhibited cruelty to animals were twice as likely to have been physically or sexually abused as a child (Duncan, Thomas, and Miller 2005). These findings are similar to those obtained by Ascione and his colleagues (2003) in a study of maternal caregivers that found an association between childhood animal cruelty and sexual abuse victimization in samples of sexually abused children and children who were psychiatric outpatients. In another study involving a sample of college students who completed a computer-assisted questionnaire, those who had either witnessed or perpetrated childhood animal cruelty were also victims of abuse themselves (DeGue and DeLillo 2009). Utilizing a community sample of Italian youth who completed a self-report questionnaire, Baldry (2005) found that those children who had abused animals had witnessed more domestic violence and animal abuse than those who had not abused animals. These results highlight an important finding from this body of research: it appears that witnessing animal abuse can be an important predictor of the future commission of it (Flynn 2012). This finding is also consistent with theory and research involving violence in human families, in a phenomenon referred to as the intergenerational transmission of violence (Widom 1989).

Additional research examines the relationship between domestic violence and pet abuse, with studies demonstrating that female victims of domestic violence were more likely to report that their pets had been threatened or abused than non-victims (Ascione et al. 2007). Moreover, batterers who abuse pets tend to be more violent and controlling than those who do not abuse pets (Simmons and Lehmann 2007). Batterers may use the animal as a tool to facilitate control over their partner, and as a scapegoat for their own aggression (Carlisle-Frank, Frank, and Nielsen 2004). For example, in a large survey of women at an urban domestic violence shelter, findings reveal that batterers who abuse pets are generally more violent and controlling (Simmons and Lehmann 2007).

Finally, animal abuse has been associated with other forms of interpersonal violence, such as bullying, and other types of antisocial behavior, like juvenile delinquency, and, as noted earlier, adult criminality. Children who are both victims and perpetrators of bullying are more likely to abuse animals, with the effect being particularly strong for males (Baldry 2005; Henry and Sanders 2007). The relationship between animal abuse and juvenile delinquency also reveals a gendered pattern. Specifically, young men who witness and commit animal cruelty are also more likely to engage in delinquency (Henry 2004a, 2004b). In perhaps the only study to use official police data to examine precursors of animal crime, Degenhardt (2005) examined Chicago Police Department arrest data of all individuals charged with animal-related crimes between July 2001 and July 2004. He found that animal cruelty was related to a variety of offenses, both violent and nonviolent, with a majority of these offenders having multiple felony arrests, narcotics charges, battery-related violent offenses and self-reported gang involvement; it is important to note, however, that this study was atheoretical.

From the preceding review, it is clear that a relationship between animal cruelty and other forms of crime and violence is well-established. Criminal offenders often report a history of animal abuse. Child abuse, domestic violence, and animal abuse often co-occur within the same family. Children who abuse animals may also be both victims and offenders of other types of abuse and anti-social behavior.

However, “the link” is not without its detractors. First, many critics point to the problem of causality. An association between animal abuse and human violence tells us nothing about the causal nature of the relationship. That is, does animal abuse cause later violence, or are they both due to some other underlying pathology? The “graduation hypothesis,” indicating that individuals “graduate” from animal cruelty to human violence, has empirical as well as popular support, with humane education programs and therapeutic early intervention strategies designed to target children who abuse animals (Faver 2010; Haden and Scarpa 2005; Merz-Perez and Heide, 2004; Merz-Perez, Heide and Silverman 2001; Overton, Hensley, and Tallichet 2012). The graduation hypothesis suggests that animal abuse may inhibit empathy in children, who are then able to manifest more generalized aggression toward people (Ascione 1993). However, support has also

been found for the “generalized deviance hypothesis” in which animal cruelty is just one of many anti-social behaviors committed by some individuals and is just as likely to follow other nonviolent crimes as predict them; in a study using criminal records and official reports of animal cruelty, Arluke and colleagues (1999:9) found that animal abusers were more deviant than non-abusers, however, “animal cruelty may precede, coincide with, or follow a broad range of anti-social behaviors.”

Studies of the link suffer from a variety of additional methodological limitations. First, most of them are merely descriptive and cross-sectional, lacking specific testable hypotheses or the ability to examine the direction of the relationship between animal abuse and human violence. Further, most use official samples, whether they be incarcerated individuals or police reports. Also, these studies often exhibit wide variability in terms of what is defined as “animal abuse.” Finally, as mentioned previously, most of these studies are conducted at the individual-level, with limited consideration of the influence of social variables, such as family, peers, or community.

These conflicting findings have engendered additional criticisms of the link, namely that it ignores the multiple pathways that connect animal cruelty and human violence, and that it is too psychological in nature, neglecting the role of social causes and correlates of animal cruelty (Flynn 2012). While that may be true, it is also true that the failure to unequivocally specify a causal link between animal cruelty and later human crime and violence at the individual level does not mean that the link has no sociological relevance. The link has something to contribute to the sociological study of animal crime because animal abuse and crime and violence do co-occur (Flynn 2012). Criminologists’ neglect of this topic overlooks not only animal crime, but a host of other antisocial behaviors, as well.

The sociology of animal crime

Thus, although institutional responses to animal cruelty have been in place since the late 1800s and psychologists have made great strides in understanding animal cruelty by focusing on individual-level relationships via the link, the social context of animal abuse remains greatly unexamined (Arluke and Sanders 2009). A fuller sociological understanding of animal crime is warranted, because animal abuse is certainly a social phenomenon. Animal abuse almost always occurs in the context of human relationships, whether in families, within peer groups, or among neighbors. Also, as revealed in the link scholarship, animal abuse invariably distorts human empathy, making it easier to ignore the feelings of others we interact with, both animal and human (Ascione 1993). And our attitudes about violence, including animal violence, shape societal responses to such behavior and say much about the value we place on the lives of others (Flynn 2001). To that end, some scholars have argued for a “cultural spillover” phenomenon whereby some forms of socially acceptable violence contribute to unacceptable violence (Straus 1991). However, definitions of what is “socially acceptable” or not are subjective and will vary across communities. Thus, cultural norms that tolerate some forms of animal abuse may then influence other forms of more serious animal cruelty and human-related crime within a society.

Also, as Flynn (2001) points out, the prevalence of animal cruelty may have important connections to broader dynamics of social power, inequality and exploitation. Although a discussion of the ontological meaning of “animals” is beyond the scope of this study, the recognition that certain creatures are relegated to the category of mere “animal” is significant when examining the ways that we neglect, abuse, and exploit those creatures. Thus, it is important to consider the often-subordinate roles that non-human animals play in our lives and how those roles have influenced our conflicted relationships with them. First, socially acceptable animal exploitation occurs on a grand scale in many realms of society, from entertainment, to eating, to science and technology. Second, under the law, animals are considered property with no legal standing; this may contribute to the view that it is socially acceptable for “owners” to treat their animals as they see fit (Bierne 1995; Flynn 2012). In

addition, legal professionals rarely enforce animal cruelty laws due to society's ambivalence about such crimes, the difficulties in defining and proving animal cruelty, and a lack of funding and enforcement for such crimes (Arluke and Luke 1997; Flynn 2001). Further, as indicated previously, when animal cruelty is considered in the study of crime and violence, it is often only as an indicator of more serious forms of violence against humans, not as a topic worthy of study in its own right (Biernie 1995). Thus, generally, animals have been defined at best as creatures vastly subordinate to human beings or at worst as mere objects in popular, legal and scholarly depictions of them. Our understanding of the causes and correlates of animal crime must be situated within this social structural context.

A sociology of animal crime would examine the causes and correlates of animal crime in communities and larger aggregates (Flynn 2001). This might include empirical analysis of structural variables like gender, age, race, socioeconomic status, as well as socialization processes within families and peer groups, and societal norms about animals and animal abuse. Further, borrowing from the link framework, it would be sensible to investigate how rates of animal crime correlate with violent and other crime, as well as other social problems like poverty.

Agnew (1998) has integrated many of these ideas into perhaps the only complete theory of animal abuse, drawing on leading criminological theories to explain why individuals abuse animals. This social-psychological theory examines individual-level traits and beliefs, social factors related to socialization, strain and social control, and structural variables related to one's social position, including gender, age, race, socioeconomic status, and geographic location. Agnew argues that animal abuse is more likely when individuals are unaware of the consequences of their actions, when they believe it is justified and when they perceive the benefits of the abuse to outweigh the costs. However, these direct effects are influenced by the ways in which animal abuse is learned and reinforced through socialization from family, school, peer groups, and the media. Animals may also be a source of strain, causing personal injury, destroying our property or otherwise interfering with valued goals (Bryant 1990; Kellert and Felthous 1985). And on a broader level, strain that is not caused by animals may nonetheless lead to animal abuse. It is possible that negative community characteristics, such as high crime or poverty, might provide a source of community-based strain, which in turn generates a general propensity for frustration-based animal crime as a way of coping with the strain. Finally, demographic variables related to one's social position, primarily gender, age, race, socioeconomic status and geographic location, may exert indirect effects on animal abuse by influencing the ways in which these individuals are socialized into animal-related attitudes and behaviors (Agnew 1998).

Given the range of theoretical and empirical concepts that supports a sociological understanding of animal crime, what do we know about animal crime sociologically? Surprisingly little. Unfortunately, Agnew's theory is difficult to test given the limitations of available data and the breadth of variables and relationships it specifies; further, it is designed to explain animal abuse at the individual level. However, other studies reveal that broad trends in animal crime mirror those of all crime in general.

First, almost all animal abusers are male. This is true in clinical samples, retrospective studies and recent studies of college students (Flynn 2000a; Kellert and Felthous 1985; Rigdon and Tapia 1977). Animal abusers are also typically young, with most individuals prosecuted for these crimes being young adults (Flynn 2012). In one of the few studies using official animal crime data from one large American city, Arluke and Luke's (1997) research examining trends in Boston between 1975 and 1990 found that over 96% of animal crime offenders were male and most were under the age of 30. Interestingly, young offenders are more likely to abuse animals in the presence of others, while adults report being alone when committing the abuse (Arluke and Luke 1997). Research examining the socioeconomic status of those who abuse animals is limited, but suggests that animal-cruelty might be more common in lower-class families (Flynn 2012; Munro 1999).

Social disorganization and the community context of animal crime

To further demonstrate the sociological significance of animal crime, it is important to examine the community context of this type of crime. Guided by theory and research about the link and the dynamics of the witnessing and perpetration of animal cruelty within families, it is reasonable to consider the replication of these patterns in communities, as well as to consider the influence of structural variables, like crime and poverty, on animal crime. Social disorganization theory, one of the most empirically supported theories of criminology, explains crime rates as a consequence of community structural disadvantage that limits social ties, lowers informal social control, and weakens cultural consensus against crime (Bursik and Grasmick 1999; Warner 2003). Thus, in communities plagued by economic hardship and racial segregation, as well as high rates of other types of crime, residents may be fearful and distrusting of each other and the police. Conventional values may be irrelevant or invisible, and thus oppositional values that support the use of crime and violence begin to emerge. As a result, these communities have a difficult time marshaling resources to control and prevent crime and local crime rates rise. A community analysis of animal crime is needed to examine whether the same dynamics of social disorganization that predict violence against people also predict violence against animals.

A community analysis of animal crime would not only contribute to a fuller understanding of animal crime, but it also might provide an opportunity to test the generality of community-level explanations of crime, like social disorganization theory. Studies have examined the effect of social disorganization on both violent crime and property crime rates (Markowitz et al. 2001; Sampson, Raudenbush, and Earls 1997). However, research has failed to directly address the question of whether social disorganization theory is broad enough to apply across all crime types. Thus, the current study offers an opportunity to test the generality of this theory by examining the effects of elements of social disorganization, specifically community hardship, on animal crimes and arrests.

In terms of community correlates of animal crime, only one study has sought to investigate the link between animal crime and neighborhood structural characteristics (Levinthal 2010). Using data from the Pennsylvania Society for the Prevention of Cruelty to Animals, the relationship of animal crime to variables like neighborhood racial composition, poverty level, and crime rates was analyzed. This research revealed that neighborhood poverty and crime rates predict animal abuse, though with very limited explanatory power. Neighborhood crime rates and percent Hispanic predict animal neglect, while dog fighting is weakly explained by poverty, crime rates and percent Hispanic. Due to the reluctance of citizens to report animal crime, as well as the other weaknesses inherent in official data, these findings are limited, but they provide an important first step in a sociological understanding of the community correlates of animal crime (Arkow 2013).

Based on the review of existing literature about the problem of animal crime, its correlates, causes and consequences, the current study provides an exploratory examination of animal crime in Chicago. This work is important in contributing to the study of animal crime in several ways. First, it advances a more complete understanding of the social context of animal crime; to date, no study has analyzed community correlates of animal crime reports and arrests using official crime data. Further, by examining the effects of some indicators of social disorganization on animal crime, it provides a test of the generality of social disorganization theory on a new type of crime. Finally, it contributes to a fuller picture of the nature of crime in one of the most criminologically significant cities in America, Chicago. Using official crime and census data, general characteristics and geographic patterns of animal crime, as well as crime- and community-related factors that influence reports and arrests for animal crime are presented.

Method

Data

The data for this study come from Chicago Police Department (CPD) data available publicly through the City of Chicago Data Portal (<https://data.cityofchicago.org/>). These data encompass all criminal incidents, including reports and arrests, between 2003 and 2013 in which an animal crime was the primary offense recorded. Animal crimes are defined as those incidents reported under Illinois Uniform Crime Reporting codes 501A, *Animal Abuse/Neglect* and 1682, *Animal Fighting*. *Animal Abuse/Neglect* includes incidents that involve the beating, cruel treatment, tormenting, starvation, overwork, abandonment or other abuse of an animal that may cause it to suffer serious injury, hunger or exposure; the infliction of extreme abuse intended to increase or prolong the pain, suffering or agony of an animal; or any act that causes a companion animal to suffer serious injury or death (Chicago Police Department 2014). *Animal Fighting* includes the unlawful fighting of dogs, roosters or other animals (Chicago Police Department 2014). Additional crime data were collected to obtain index, violent and property crime rates for Chicago community areas. Data regarding structural characteristics of these community areas come from the 2010 Census of Population and Housing.

Measures

Variables were constructed at the crime and community area level. Crime-related variables include the *type of crime* (animal abuse/neglect or fighting), *location of crime* (residence, street, public housing, or other); *year crime occurred*, and *arrest* (whether an arrest was made for the animal crime report). Community area-related variables include *high animal crime community*, calculated as those community areas with a mean number of animal crimes .5 standard deviations above the mean, *racial composition of the community* (percent white, percent black and percent Latino), as well as a *Hardship Index*, calculated from six structural variables including the percent of occupied housing units with more than one person per room (i.e., crowded housing); the percent of households living below the federal poverty level; the percent of persons in the labor force over the age of 16 years that are unemployed; the percent of persons over the age of 25 years without a high school diploma; the percent of the population under 18 or over 64 years of age (i.e., dependency); and per capita income. Scores on this index range from 1 to 100, with a higher number representing a greater level of hardship (for further computational details, see Montiel, Nathan, and Wright 2004). Crime rates were also calculated for the community areas by summing all crimes between 2003–2013 within community areas, dividing that by the 2010 population of that community area, and multiplying by 1,000, resulting in an *index, violent, and property crime rate* of crimes per 1,000 residents. Index crimes include the violent crimes of homicide, criminal sexual assault, robbery, battery, and assault, as well as the property crimes of burglary, theft, motor vehicle theft, and arson.

Analyses

Because this study is primarily intended to examine the nature of animal crime in Chicago, a variety of analyses were performed. These included descriptives of relevant variables, a map constructed in ArcGIS using geocoded addresses of the animal crimes showcasing incidents and arrests by community area, as well as *t*-tests comparing community areas with high numbers of animal crimes to all community areas. Finally, two logistic regression analyses were conducted, one examining predictors of reports of animal fighting, the second examining predictors of animal crime arrests.

Findings

Descriptive Results

Table 1 contains descriptive statistics for the animal crime incidents and the community areas in which they occur. First, the animal crimes were majority abuse/neglect (90%) rather than animal fighting. These incidents tended to happen at residences (55%) rather than on the street, in public housing, or other locations, such as abandoned buildings, cars, vacant lots or parking lots. Further, generally, the number of both abuse/neglect and fighting incidents has declined over time, though the proportion for which an arrest was made has remained relatively stable at about 29% (see Figure 1). Interestingly, arrest rates for all crimes in Chicago were very similar at about 28%.

The bottom part of Table 1 presents community-related variables, structural characteristics of the community areas in which animal crime occur. Racial composition of these communities was overwhelmingly African American, with the mean value for percent black at 60%. These communities exhibited fewer numbers of Latinos and whites, with average percent Latino at 23% and percent white at 14%. Twenty-nine percent of residents in these communities lived below the poverty line, with an average per-capita income of \$19,213, and 18% are unemployed. The average hardship index was 67 (on a scale from 1–100). In terms of other crimes, the index crime rate was 716 per 1,000 residents, the violent crime rate was 192 per 1,000 residents, and

Table 1. Crime-Related Variables (N = 2,650)

	Number	Percent
Type of Crime		
Animal Abuse/Neglect (501A)	2372	89.51
Animal Fighting (1682)	278	10.49
Location of Crime		
Residence	1450	54.72
Street	483	18.23
Public Housing	31	1.17
Other	686	25.89
Year Crime Occurred		
2003	455	17.17
2004	362	13.66
2005	394	14.87
2006	315	11.89
2007	195	7.36
2008	193	7.28
2009	141	5.32
2010	116	4.38
2011	164	6.19
2012	144	5.43
2013	171	6.45
Arrested		
Yes	855	32.26
No	1,795	67.74
TOTAL	2,650	100.00
Community-related variables		
	Mean	Std. deviation
Racial Composition of Community		
Percent White	13.78	20.68
Percent Black	59.97	38.72
Percent Latino	23.42	27.60
Hardship Index	66.6	25.41
Index Crime Rate	716.17	273.01
Violent Crime Rate	191.64	99.18
Property Crime Rate	524.53	196.94
High Animal-Crime Community	0.57	0.50

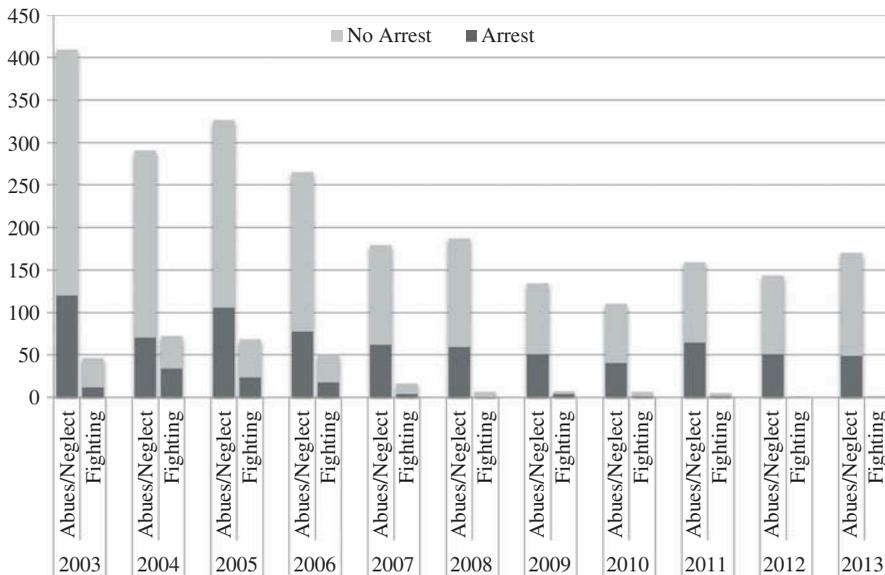


Figure 1. Type of animal crime by arrest by year.

the property crime rate was 525 per 1,000 residents. These figures were slightly higher than average crime rates across all community areas. As mentioned above, high-animal crime communities were defined as those with values of animal crime .5 standard deviations above the mean. Fifty-seven percent of community areas were classified as “high animal crime” between 2003–2013.

Figure 2 presents a map showing general patterns of animal crime incidents and arrests across Chicago community areas. The darkly shaded areas indicate community areas with higher numbers of animal crime incidents and each dot indicates an arrest for such a crime. These crimes tended to cluster along the south and west sides; this is also true of most crime, especially violence, in Chicago (Davey 2013).

To further examine the types of neighborhoods in which these crimes occur, “high animal crime” community areas were compared to all community areas. Consistent with the statistics presented in Table 1 and patterns revealed in the map, *T*-tests demonstrate that these high animal crime areas had significantly higher index, violent and property crime rates (see Figure 3). Further, these areas exhibited significantly higher hardship indices, and a larger proportion of African-American residents (see Figure 4). So, community areas with high rates of animal crime were also more criminal in general, and characterized by socioeconomic hardship and racial segregation.

Regression results

The first logistic regression model examined the relationship between community crime rates, structural characteristics, and reports of animal fighting.¹ The results are presented in Table 2. In Model 1, the community violent crime rate (odds ratio = 1.01) predicts animal fighting, although the effect size is very small. The odds ratio of 1.00 for property crime indicates no effect. Street location (odds ratio = 1.73) and year of incident (odds ratio = 0.82) also predict

¹Because there are only two types of animal crimes in this dataset, and animal fighting is a dummy variable, values coded as “0” represent the reference category of animal abuse/neglect; thus, all of the following regression results are the same, but with inverse signs, for abuse/neglect).

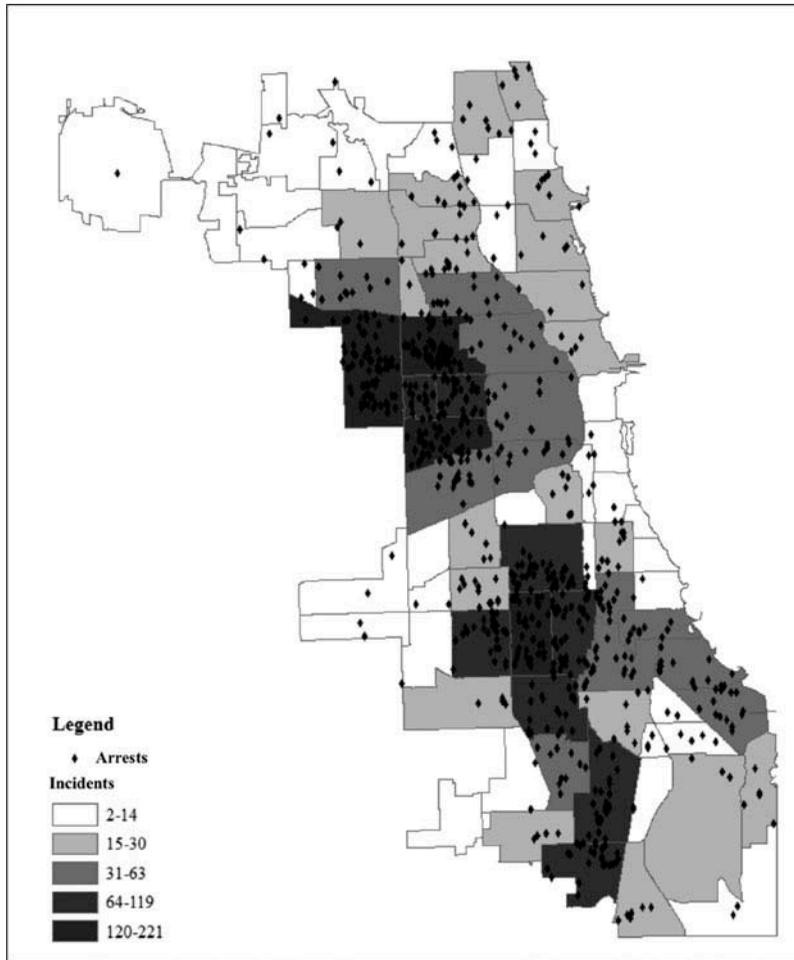


Figure 2. Chicago community areas by animal crime incidents and arrests.

animal fighting. Thus, animal fighting incidents were more likely to be reported in areas with higher violent crime rates, when they occurred on the street, and when they happened earlier in time, compared to abuse/neglect incidents.

In Model 2, the structural variable representing community hardship was added. The hardship index significantly predicts animal fighting (odds ratio = 1.01). The effects of street location and year of incident are unchanged. However, the effects of property and violent crime rates were rendered non-significant, indicating evidence of mediation; specifically, along with street location and year of incident, community hardship is a key factor contributing to animal fighting in neighborhoods characterized by high violent crime rates.

The final analysis was a logistic regression model predicting the likelihood of arrest for a reported animal crime; thus, this model examines the characteristics of animal crime reports that might be significant predictors of arrests. Due to the relatively small number of variables, the analysis was comprised of two models; the first model included all theoretically relevant independent variables (except for Percent White and Percent Latino, which were left out of the model due to multicollinearity with other explanatory variables. Bivariate correlations are provided in the Appendix), while the second model re-estimated the equation after removing all non-significant variables.

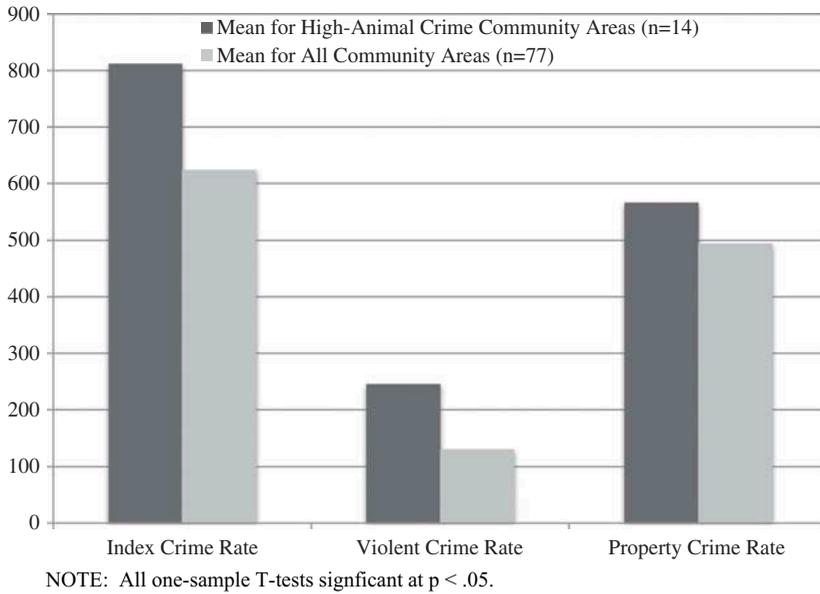


Figure 3. T-tests of community-area crime rates.

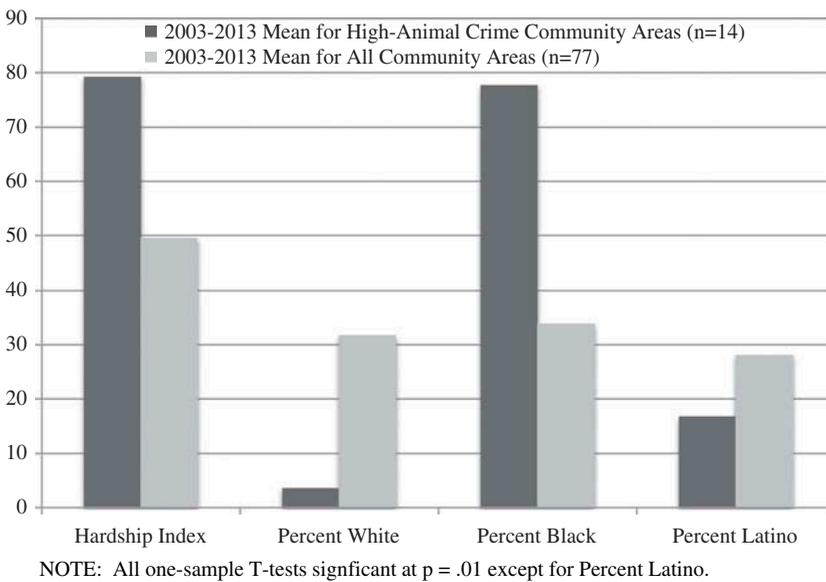


Figure 4. T-tests of community-area structural variables.

The results from this logistic regression analysis are presented in Table 3. Findings revealed significant positive effects of residence (odds ratio = 1.33), year of incident (odds ratio = 1.03) and hardship index (odds ratio = 1.01). So, animal crimes were significantly more likely to result in arrest when they occurred at a residence and when they were more recent incidents. Further, arrest for animal crimes was more likely in community areas with higher hardship indices.

Table 2. Logistic Regression Predicting Animal Fighting Offense

	Model 1			Model 2		
	Odds ratio		Standard error	Odds ratio		Standard error
Intercept	0.00		54.22	0.00		54.11
Violent Crime Rate	1.01	***	0.00	1.00		0.00
Property Crime Rate	1.00	**	0.00	1.00		0.00
Residence	0.80		0.16	0.81		0.16
Street	1.73	**	0.18	1.75	**	0.18
Public Housing	1.66		0.58	1.75		0.58
Year of Incident	0.82	***	0.03	0.82	***	0.03
Hardship Index				1.02	***	0.01

** $p < .01$ *** $p < .001$ **Table 3.** Logistic Regression Predicting Arrest for Animal Crime

	Full model			Reduced model		
	Odds ratio		Standard error	Odds ratio		Standard error
Intercept	0.00		27.33	0.00		26.71
Animal Fighting	1.26		0.14			
Residence	1.39	**	0.10	1.33	**	0.09
Street	1.05		0.13			
Public Housing	1.81		0.4			
Year of Incident	1.03	*	0.01	1.03	*	0.01
High Animal Crime Area	1.03		0.12			
Index Crime Rate	1.00		0			
Hardship Index	1.01	**	0	1.01	***	0
Percent Black	1.00		0			

* $p < .05$, ** $p < .01$, *** $p < .001$

Discussion

This study examined descriptive, geographic, and arrest patterns of animal crime in Chicago. Findings indicate that a majority of animal crime reports in Chicago was classified as abuse and neglect, rather than fighting, and was most likely to occur in residences. Also, though the number of reported animal crimes has gone down over time, arrests have been relatively stable. Animal crime appeared to cluster in community areas that have a long history of socioeconomic disadvantage and human crime. Accordingly, high animal crime areas had higher rates of index, violent and property crime, more socioeconomic hardship and more African-American residents.

Although the community-area t -tests revealed some interesting patterns about high animal crime areas, additional analyses through logistic regression revealed that street location, year of incident, and community hardship were significantly associated with reports of animal fighting. In terms of testing the generality of social disorganization theory on new types of crime, the positive effect of community hardship on animal fighting offers some support for this test, although the effect is very small.

The second set of logistic regression models found that residential location, year of crime, and socioeconomic hardship were significant in predicting arrests for reported animal crime. There are several reasons why we would expect more animal crime arrests to occur at residences. First, many of these crimes involve neglect, or a failure to provide appropriate food, water, and shelter for an animal. By their very nature, these crimes would occur at residential locations, and police would likely seek evidence of such crimes at those homes. Also, violent animal crimes, like other forms of violence, may be hidden, occurring in the privacy of one's own home. Arrests may be more likely for recent incidents because of the concerted efforts of the Chicago Police Department's Animal Crimes Team, in collaboration with the local organization Safe Humane Chicago, which increased efforts to train police in how to respond to animal-related crimes (C. Bathurst, personal communication, July

27, 2013). In terms of the predictive effect of socioeconomic hardship, police officers are more likely to target and make arrests in disadvantaged neighborhoods, because of the presence of other forms of crime there (Kirk 2008).

Without data to further examine the causal relationships between the variables available here and animal crime, it is only possible to speculate about the reasons for the community patterns observed, though there are several findings from animal crime research, and criminology more broadly, that can inform these speculations. As stated previously, given the vast body of theory and research indicating social disorganization as a cause of community crime rates, it seems that this relationship might also hold true for animal crime (Bursik and Grasmick 1999). It may be that areas characterized by social disorganization, as indicated by economic hardship and racial segregation, face particular difficulties in achieving consensus about norms and values related to animal abuse. This would not be surprising, given that these difficulties are apparent in the broader social context, as well. Further, because several studies have documented how oppositional norms and values, such as those favoring aggression and violence, emerge in areas of disorganization (Anderson 2000; Stewart and Simons 2006; Warner 2003), it is reasonable to assume that those cultural notions also apply to animals. Perhaps these communities, with limited social and economic resources, are also particularly vulnerable to the kind of cultural spillover phenomenon described earlier whereby socially acceptable animal cruelty, like factory farming, contributes to other forms of socially unacceptable animal cruelty, like abuse and neglect. Thus residents of disadvantaged communities contend with a range of cultural values, both from within the community and from wider society, that supports beliefs and behaviors consistent with cruelty to animals. Finally, if the generalized deviance hypothesis is true, then people who engage in animal crime are also engaging a wide variety of other crimes, thus explaining the high rates of index, violent and property crime in high animal crime communities.

Before considering some of the implications from these findings, the limitations of the data must be discussed. First, they are official data. Thus, they are subject to the qualification that they only represent crimes for which a report was filed or arrest made. It is likely that animal crime is even more under-reported than other crime, so these findings must be interpreted with the understanding that the data may represent only a small fraction of all animal crimes. Further, the publicly available crime data only provide primary offenses. This is a significant limitation for two reasons. First, because of the hierarchy rule in reporting criminal incidents involving multiple offenses, more serious offenses are charged first. Thus, these data do not include more serious criminal incidents that might also involve animals, because the animal charges would be reported as secondary, tertiary, or lower charges. Second, and related to this point, because only primary offense was provided, it was not possible to examine co-occurring crimes. Future research should consider the use of primary data collection, specifically surveys to assess the scope of participation in, witnessing of, and attitudes about animal crime, as well as correlates including other criminal and violent activity, and family and community characteristics. Ideally, future survey research should be informed by the current study, as well as Agnew's theory of animal abuse, which has yet to be fully tested. Also, these surveys should include enough respondents to form valid and reliable community-level measures of animal crime and its correlates to advance our understanding of the sociology of animal crime.

There are several implications to come out of this research related to the impact of animal crime in communities. First, given that other forms of crime and violence also plague high animal crime areas, law enforcement officials would be wise to train police to investigate and enforce animal crimes in those communities (Lockwood 2008). Applying what is known about the link, perhaps targeting animal crimes could prevent or lead to the detection of more serious crimes. Although there is little empirical research to support this assertion, in one innovative study of dog-fighting in Chicago neighborhoods, interviews revealed that individuals who participated in dog-fighting were likely to report early exposure to animal abuse and dog-fighting within their local neighborhood (University of Chicago Survey Lab 2008). Vigorous enforcement of these crimes might prevent an escalation to dog-fighting and the other more serious crimes it is associated with, like drug and

weapon offenses, as well as gang activity (Gibson 2005). To achieve these ends, citizens must also be encouraged to report animal crimes, although this may be difficult, given the range of conflicting attitudes about animals in society. Here again, the link, with its emphasis on the connection between animal crime and human violence, might be vital to enhance public interest in the topic of animal cruelty.

While it is important to emphasize the negative consequences of animal cruelty, particularly as a risk factor for other crime and violence, it is also worth presenting the other side of this argument, that is, the protective effects of animals in a community. Several scholars have noted that companion animals may serve as “social lubricants” in communities, facilitating social interaction and providing a sense of social integration (Garrity and Stallones 1998; Messent 1983; McNicholas et al. 2005; Serpell 2010). Recent research has taken this idea one step further to suggest that companion animals are an important source of social capital, promoting neighborly interaction and trust, enhancing civic engagement, and reducing fear of crime (Wood, Giles-Corti, and Bulsara 2005). Perhaps then, efforts to combat animal cruelty in disadvantaged communities are useful not just from a law and order perspective. Initiatives that strengthen the human-animal bond in these communities, thus investing in the social capital inherent in that bond, might also act as an important protective factor to reduce violence from within.

Conclusion

Clifton Flynn (2008) referred to three “a-words” when describing the difficulties in achieving a serious study of human-animal interaction: anthropocentrism, anthropomorphism, and anecdotes. He argues that scientists have been trained to assume the supremacy of humans, and to disregard theory and research that suggests human qualities may be present in non-human animals, particularly if the data are seen as isolated, subjective stories. In terms of the study of animal crime, it seems prudent to add “arbitrary” and “apathy” in referring to the ways in which we define animals worthy of our concern from a criminological standpoint and the lack of attention we as citizens and scientists show them. Hopefully, this research sheds light on some of the significant sociological dynamics of animal crime and asserts it as a subject worthy of our concern.

Notes on contributor

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Appendix Pearson Correlations (N = 2,650)

	Arrested	Abuse	Fighting	Residence	Street	Public housing	Other location	Year	Percent White	Percent Black	Percent Latino	Hardship index	Index crime rate	Violent crime rate	Property crime rate	High animal crime area	
Arrested	Pearson r Sig. (2-tailed) 1.00																
Abuse	Pearson r Sig. (2-tailed) -0.03 0.13	Pearson r Sig. (2-tailed) 1.00															
Fighting	Pearson r Sig. (2-tailed) 0.03 0.13	Pearson r Sig. (2-tailed) -1.00 0.00	Pearson r Sig. (2-tailed) 1.00														
Residence	Pearson r Sig. (2-tailed) 0.07 0.00	Pearson r Sig. (2-tailed) 0.09 0.00	Pearson r Sig. (2-tailed) -0.09 0.00	Pearson r Sig. (2-tailed) 1.00													
Street	Pearson r Sig. (2-tailed) -0.03 0.11	Pearson r Sig. (2-tailed) -0.11 0.00	Pearson r Sig. (2-tailed) 0.11 0.00	Pearson r Sig. (2-tailed) -0.52 0.00	Pearson r Sig. (2-tailed) 1.00												
Public Housing	Pearson r Sig. (2-tailed) 0.01 0.70	Pearson r Sig. (2-tailed) -0.01 0.66	Pearson r Sig. (2-tailed) 0.01 0.66	Pearson r Sig. (2-tailed) -0.12 0.00	Pearson r Sig. (2-tailed) -0.05 0.01	Pearson r Sig. (2-tailed) 1.00											
Other Location	Pearson r Sig. (2-tailed) -0.06 0.00	Pearson r Sig. (2-tailed) -0.01 0.77	Pearson r Sig. (2-tailed) 0.01 0.77	Pearson r Sig. (2-tailed) -0.65 0.00	Pearson r Sig. (2-tailed) -0.28 0.00	Pearson r Sig. (2-tailed) -0.06 0.00	Pearson r Sig. (2-tailed) 1.00										
Year	Pearson r Sig. (2-tailed) 0.04 0.02	Pearson r Sig. (2-tailed) 0.17 0.00	Pearson r Sig. (2-tailed) -0.17 0.00	Pearson r Sig. (2-tailed) 0.16 0.00	Pearson r Sig. (2-tailed) -0.06 0.00	Pearson r Sig. (2-tailed) 0.08 0.00	Pearson r Sig. (2-tailed) -0.11 0.00	Pearson r Sig. (2-tailed) 1.00									
Percent White	Pearson r Sig. (2-tailed) -0.07 0.00	Pearson r Sig. (2-tailed) 0.12 0.00	Pearson r Sig. (2-tailed) -0.12 0.00	Pearson r Sig. (2-tailed) -0.06 0.00	Pearson r Sig. (2-tailed) 0.02 0.31	Pearson r Sig. (2-tailed) 0.11 0.00	Pearson r Sig. (2-tailed) 0.02 0.24	Pearson r Sig. (2-tailed) 0.10 0.00	Pearson r Sig. (2-tailed) 1.00								
Percent Black	Pearson r Sig. (2-tailed) 0.03 0.11	Pearson r Sig. (2-tailed) -0.10 0.00	Pearson r Sig. (2-tailed) 0.10 0.00	Pearson r Sig. (2-tailed) 0.05 0.01	Pearson r Sig. (2-tailed) -0.02 0.39	Pearson r Sig. (2-tailed) -0.04 0.05	Pearson r Sig. (2-tailed) -0.04 0.07	Pearson r Sig. (2-tailed) -0.12 0.00	Pearson r Sig. (2-tailed) -0.71 0.00	Pearson r Sig. (2-tailed) 1.00							
Percent Latino	Pearson r Sig. (2-tailed) 0.01 0.66	Pearson r Sig. (2-tailed) 0.03 0.13	Pearson r Sig. (2-tailed) -0.03 0.13	Pearson r Sig. (2-tailed) -0.01 0.51	Pearson r Sig. (2-tailed) 0.01 0.77	Pearson r Sig. (2-tailed) -0.06 0.00	Pearson r Sig. (2-tailed) 0.02 0.21	Pearson r Sig. (2-tailed) 0.08 0.00	Pearson r Sig. (2-tailed) 0.13 0.00	Pearson r Sig. (2-tailed) -0.78 0.00	Pearson r Sig. (2-tailed) 1.00						
Hardship Index	Pearson r Sig. (2-tailed) 0.07 0.00	Pearson r Sig. (2-tailed) -0.13 0.00	Pearson r Sig. (2-tailed) 0.13 0.00	Pearson r Sig. (2-tailed) 0.04 0.04	Pearson r Sig. (2-tailed) 0.01 0.77	Pearson r Sig. (2-tailed) -0.14 0.00	Pearson r Sig. (2-tailed) -0.02 0.21	Pearson r Sig. (2-tailed) -0.06 0.00	Pearson r Sig. (2-tailed) -0.82 0.41	Pearson r Sig. (2-tailed) 0.13	Pearson r Sig. (2-tailed) 1.00						
Index Crime Rate	Pearson r Sig. (2-tailed) 0.02 0.25	Pearson r Sig. (2-tailed) -0.07 0.00	Pearson r Sig. (2-tailed) 0.07 0.00	Pearson r Sig. (2-tailed) -0.02 0.24	Pearson r Sig. (2-tailed) -0.01 0.62	Pearson r Sig. (2-tailed) 0.06 0.00	Pearson r Sig. (2-tailed) 0.02 0.32	Pearson r Sig. (2-tailed) -0.08 0.00	Pearson r Sig. (2-tailed) -0.39 0.00	Pearson r Sig. (2-tailed) 0.68 0.00	Pearson r Sig. (2-tailed) -0.62 0.00	Pearson r Sig. (2-tailed) 0.25	Pearson r Sig. (2-tailed) 1.00				
Violent Crime Rate	Pearson r Sig. (2-tailed) 0.04 0.02	Pearson r Sig. (2-tailed) -0.11 0.00	Pearson r Sig. (2-tailed) 0.11 0.00	Pearson r Sig. (2-tailed) 0.02 0.24	Pearson r Sig. (2-tailed) 0.00 0.62	Pearson r Sig. (2-tailed) -0.04 0.00	Pearson r Sig. (2-tailed) -0.01 0.32	Pearson r Sig. (2-tailed) -0.01 0.00	Pearson r Sig. (2-tailed) -0.69 0.00	Pearson r Sig. (2-tailed) 0.87 0.00	Pearson r Sig. (2-tailed) -0.61 0.00	Pearson r Sig. (2-tailed) 0.59	Pearson r Sig. (2-tailed) 0.84	Pearson r Sig. (2-tailed) 1.00			
Property Crime Rate	Pearson r Sig. (2-tailed) 0.01 0.64	Pearson r Sig. (2-tailed) -0.04 0.05	Pearson r Sig. (2-tailed) 0.04 0.05	Pearson r Sig. (2-tailed) -0.04 0.03	Pearson r Sig. (2-tailed) -0.01 0.94	Pearson r Sig. (2-tailed) 0.11 0.03	Pearson r Sig. (2-tailed) 0.03 0.51	Pearson r Sig. (2-tailed) -0.06 0.00	Pearson r Sig. (2-tailed) -0.20 0.50	Pearson r Sig. (2-tailed) 0.50 0.00	Pearson r Sig. (2-tailed) -0.55 0.00	Pearson r Sig. (2-tailed) 0.05	Pearson r Sig. (2-tailed) 0.96	Pearson r Sig. (2-tailed) 0.66	Pearson r Sig. (2-tailed) 1.00		
High Animal Crime Area	Pearson r Sig. (2-tailed) 0.05 0.02	Pearson r Sig. (2-tailed) -0.12 0.00	Pearson r Sig. (2-tailed) 0.12 0.00	Pearson r Sig. (2-tailed) 0.01 0.65	Pearson r Sig. (2-tailed) 0.02 0.29	Pearson r Sig. (2-tailed) -0.10 0.00	Pearson r Sig. (2-tailed) 0.00 0.90	Pearson r Sig. (2-tailed) -0.08 0.00	Pearson r Sig. (2-tailed) -0.56 0.00	Pearson r Sig. (2-tailed) 0.51 0.00	Pearson r Sig. (2-tailed) -0.22 0.00	Pearson r Sig. (2-tailed) 0.62	Pearson r Sig. (2-tailed) 0.36	Pearson r Sig. (2-tailed) 0.59	Pearson r Sig. (2-tailed) 0.21	Pearson r Sig. (2-tailed) 1.00	