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NEWBERRY, Michelle <<http://orcid.org/0000-0003-0085-3751>>

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**Associations between different motivations for animal cruelty,
methods of animal cruelty and facets of impulsivity**

Michelle Newberry

Department of Psychology, Sociology and Politics, Sheffield Hallam University

*Corresponding author: Dr Michelle Newberry, Senior Lecturer in Forensic Psychology, Department of Psychology, Sociology and Politics, Sheffield Hallam University, Collegiate Crescent, Sheffield, South Yorkshire, S10 2BP, UK. E-mail: m.newberry@shu.ac.uk

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ABSTRACT

Associations between specific motivations for animal cruelty, particular methods of animal cruelty and different facets of impulsivity were explored among 130 undergraduate students. Participants completed an adapted version of the Boat Inventory on Animal-Related Experiences (BIARE) which asked participants to state whether they had intentionally harmed or killed an animal, the species of animal(s) involved, their motivations for harming or killing the animal(s) and the method(s) used. Participants also completed the Impulsive Behavior scale (UPPS-P) which assesses five facets of impulsivity. Over half of the sample (55%) reported committing at least one act of animal cruelty, and dogs were the most commonly abused species of animal. The most frequently reported motivations were Prejudice, Amusement, Control (of an animal), and Retaliation (against an animal), and the most frequently reported methods were Beating/Kicking, Squashing, Throwing an object at an animal, Shooting, Drowning and Burning. Significant associations were found between particular motivations and methods, as well as between particular methods of animal cruelty and facets of impulsivity. Findings have implications for theoretical models of animal cruelty perpetration as well as offender assessment and treatment.

Keywords: Animal cruelty; animal abuse; motivations; methods; impulsivity

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INTRODUCTION

Animal cruelty

Animal cruelty has been defined in the psychological literature as “socially unacceptable behaviour that intentionally causes unnecessary pain, suffering, or distress to, and/or the death of, an animal” (Ascione, 1993, p. 228). In England and Wales alone, the Royal Society for the Prevention of Cruelty to Animals (RSPCA) investigates more than 140,000 complaints of animal abuse and neglect each year (RSPCA, 2016), and in 2016 129,602 animals were rescued and collected (RSPCA, 2017). They claim that although most of the complaints they receive involve animals not receiving adequate care or being neglected, some people are “deliberately cruel in what can be disturbingly inventive ways” (RSPCA, 2015) and that the level of depravity in recent cases is some of the most extreme they have seen. For example, five prosecutions were recently secured relating to the online craze known as *Neknomination* in which people swallowed live frogs, fish, and a lizard for a dare.

The vast majority of research on animal cruelty has focused on examining whether there is a link between childhood animal cruelty and violence against humans in adulthood (e.g. Arluke, Levin, Luke, & Ascione, 1999; Ascione, 1999; Ascione, Thompson, & Black, 1997; Bucchieri, 2015; DeViney, Dickert, & Lockwood, 1983; Felthous, 1980; Felthous & Kellert, 1987a; Hellman & Blackman, 1966; Henderson, Hensley, & Tallichet, 2011; Hensley & Tallichet, 2008; Hensley & Tallichet, 2009; Hensley, Tallichet & Dutkiewicz, 2009; Hensley et al., 2012; Holoyda & Newman, 2016; Kellert & Felthous, 1985; Levitt, Hoffer, & Loper, 2016; Merz-Perez & Heide, 2003; Merz-Perez, Heide, & Silverman, 2001; Miller & Knutson, 1997; Overton, Hensley & Tallichet, 2012; Tapia, 1971; Tallichet & Hensley, 2004; Walters, 2014). Whilst it is crucial to understand the relationship between childhood animal cruelty and later offending against humans, it is equally important to understand why people are cruel to animals to begin with. With this in mind, it has been

argued that a model for animal cruelty needs to be developed, from which profiles of animal abuser can be identified (Agnew, 1998; Arluke & Lockwood, 1997; Merz-Perez et al., 2001; Merz-Perez & Heide, 2003; Schwartz, Fremouw, Schenk, & Ragatz, 2012). However, developments in this area have been slow because the majority of research on animal cruelty has amalgamated all types of abuse into one homogenous variable which means that the variability of animal cruelty is overlooked (Parfitt & Alleyne, 2017). In order to develop a model for understanding animal cruelty we must first unpack “the abusers’ reasoning, logic, and decision-making that informs their actions” (Arluke & Lockwood, 1997, p.187), which means that perpetrators’ motivations for animal cruelty must be understood.

Motivations for animal cruelty

Motivations for animal cruelty are wide ranging and complex (Kellert & Felthous, 1985; Merz-Perez et al., 2001; Parfitt & Alleyne, 2016). In the earliest study to investigate motivations for animal cruelty, Kellert and Felthous (1985) interviewed male offenders in medium and maximum security prisons who had been rated as being aggressive individuals by prison counselors ($n = 50$) as well as non-aggressive offenders ($n = 50$) and non-offenders ($n = 52$) about acts of animal cruelty carried out in childhood (prior to age 18). Sixty percent of the total sample ($N = 152$) reported engaging in at least one act of animal cruelty (aggressive offenders reported the most acts) and from these cases the authors identified nine motivations for animal cruelty as follows: (i) to control an animal; (ii) to retaliate against an animal; (iii) to satisfy prejudice against a particular species or breed; (iv) to express aggression through an animal; (v) to enhance one’s own aggression; (vi) to shock people for amusement; (vii) to retaliate against another person; (viii) to displace aggression from a person to an animal; and (ix) to act out non-specific sadism.

In a later study, Hensley and Tallichet (2005) administered a questionnaire to 261 male offenders in medium and maximum security prisons which asked how many times they had hurt or killed an animal and to circle which motivations applied to these acts. A list of pre-specified motivations was provided that was based very closely on the motivations identified by Kellert and Felthous (1985). Of the 112 offenders who reported that they had engaged in animal cruelty, 48% stated that they had committed the acts out of anger, 38% for fun, 22% because they feared or disliked the animal or

wanted to control the animal, 14% for revenge, 14% for sex, 10% to impress someone, and 5% to shock others. In addition to their motivations, participants were also asked to provide information about their demographic characteristics and whether they had abused the animals alone and/or covered up what they had done, whether the act had upset them, and how old they were when they first engaged in animal cruelty. Regression analyses indicated that perpetrators who had engaged in animal cruelty alone were more likely to have been motivated by anger and less likely to have carried out the acts to impress others, to imitate others, or for sexual gratification. In a replication of Hensley and Tallichet's (2005) study, Hensley, Tallichet and Dutkiewicz (2011) administered a questionnaire to 180 offenders in medium and maximum security prisons and found that 103 offenders had committed acts of animal cruelty. Within this group, there were some interesting associations between particular motivations for animal cruelty and situational variables. For example, perpetrators who were motivated by anger were less likely to cover up their behavior or feel troubled by their actions, and were more likely to repeat their abusive behavior. On the other hand, those who sought to shock others were more likely to have committed the acts alone and live in urban areas.

In addition to studies which have identified similar motivations to Kellert and Felthous (1985), other motivations have also been reported. For example, in a recent study which analyzed official incident reports for 150 males arrested for an animal cruelty offense, Levitt et al. (2016) found that 13% of offenders had been motivated by a domestic dispute. Other motivations which were identified overlap with Kellert and Felthous' typology including perceived misbehavior on the part of the animal (21%), retaliation against an animal (7%) and retaliation against a person (8%).

The aforementioned studies all utilized offender samples, although aside from Levitt et al. (2016), offenders in these studies were not selected on the basis of having a conviction for an animal cruelty offence (instead being described as having a conviction for a human-directed 'violent crime' or 'other crime' e.g. Hensley & Tallichet, 2005). In addition, offender samples are limited because most adult animal cruelty is likely to go undetected (Ascione, 2010). It is therefore vital to also investigate animal cruelty in non-incarcerated populations. A small body of research exists in this area, primarily involving undergraduate student samples (Alleyne, Tilston, Parfitt, & Butcher, 2015; Arluke, 2002;

Flynn, 1999a, 1999b; 2002; Gupta, 2008; Henry, 2004; Miller & Knutson, 1997; Sanders & Henry, 2015, 2017; Schwartz et al., 2012). Despite the fact that undergraduate student samples may not be representative of the general population, data obtained from such samples is consistent with recommendations that prevalence data on maltreatment should be obtained from “natural collectivities” of participants (Browne & Finkelhor, 1986; Miller & Knutson, 1997). In addition, research has found that inferences can be reliably made from student samples to the wider population (Wiecko, 2010) and that they do not differ significantly to larger and more diverse samples in terms of animal cruelty propensity (Alleyne et al., 2015).

Arluke (2002) interviewed 25 male undergraduate students about past acts of animal cruelty and found that many abusers considered these acts to be a form of everyday play and that the thrill of not getting caught was their main motivation. Thus, Arluke’s findings are consistent with Kellert and Felthous’ (1985) motivation of Amusement although Arluke offers some interesting discussion about how participants’ presentations of self were split between speaking of abuse as fun and berating themselves for having carried out the acts, and those who continued to believe that harming animals was fun and who seemed untroubled by their behavior. Thus, a motivation of ‘Amusement’ could be underpinned by sub-forms of Amusement.

In the most recent study to explore motivations for animal cruelty, Alleyne et al. (2015) constructed six hypothetical scenarios which depicted direct and indirect acts of aggression towards animals and underlying motivations (e.g. a dog has chewed a pair of shoes and urinated on the floor and so the owner hits the dog on the head in annoyance until the dog becomes unconscious). They then asked participants to imagine themselves as the protagonist in each scenario and to respond to four questions on a five-point Likert scale (“In this situation... how thrilled would you be?; how powerful would you have felt?; could you see yourself doing the same?; and Imagine that someone had seen you in this situation. How much would you have enjoyed watching their reaction?”). Whilst this study provides a valuable contribution to the literature as it presents the development of an animal abuse proclivity scale, participants were not asked to specify motivations for animal cruelty acts which they had

themselves engaged in nor did the study examine associations between motivations for animal cruelty and methods of animal cruelty.

Methods of animal cruelty

The earliest research to examine specific methods used to abuse animals was conducted by Felthous (1980) who interviewed 346 male psychiatric patients about aggression toward cats and dogs. Of these, 71 patients were classified as being aggressive toward animals and the acts of abuse included beating, choking, fracturing bones, scalding, burning, hanging, exploding, limb amputation, and decapitation. Felthous and Kellert (1987a) later examined associations between specific methods of childhood animal abuse and species of animal abused and found that the most common methods used were beating, shooting, stoning, and throwing an animal from a height. Other methods included exploding, dismembering, breaking bones, forcing an animal to fight, stabbing, and electrocuting or burning an animal. Although these qualitative results suggest that there may be associations between particular methods of abuse and species of animal, the authors did not conduct any statistical tests to confirm these associations.

Miller and Knutson (1997) investigated acts of animal cruelty carried out in childhood among 314 male offenders and found that the methods which perpetrators reported using included poisoning, drowning, beating/kicking, shooting, strangling, stabbing, burning, throwing against an object, and exploding animals (the frequencies of these methods varied according to whether the cruelty was witnessed, carried out by the offender against a pet, or carried out by the offender against a stray animal). During this research, the authors also examined animal cruelty among 308 undergraduate students and found that 3% of participants reported killing a pet, 14% had killed a stray animal, and 30% reported engaging in acts that were carried out to cause animals pain. Although one specific question asked participants whether they had witnessed acts designed to cause pain to animals for the purposes of teasing, the study did not examine motivations any further.

In a study which compared acts of animal cruelty reported by male offenders convicted of violent human-directed offenses ($n = 45$) and non-violent offenses ($n = 45$) in a maximum security prison,

Merz-Perez et al. (2001) found that the violent offenders used a greater variety of methods to abuse animals than the non-violent offenders including beating/kicking/stomping on an animal, stabbing, dismembering, teasing/tormenting/depriving, throwing an object at an animal, forcing an animal to fight, tying animals together, having sex with an animal, pouring chemicals on an animal, and burning an animal. The methods of cruelty used by the non-violent offenders were much less diverse, including articulating fear, shooting, and forcing an animal to fight. Tallichet, Hensley and Singer (2005) later examined methods of animal cruelty among male offenders in medium and maximum security prisons who had been convicted of a 'violent crime' ($n = 125$) or 'other crime' ($n = 136$) and found that the methods of animal cruelty reported were similar to those identified by Merz-Perez et al. (2001); of the 112 offenders who had committed at least one act of animal cruelty, 64% had shot an animal, 45% had hit/kicked an animal, 21% had choked an animal, 15% had burned an animal, 14% had drowned an animal, and 14% had engaged in sex with an animal.

In the most recent research to examine specific methods of animal cruelty, Levitt et al. (2016) reported that among 150 male offenders forms of 'active' abuse included beating an animal (15% of the sample reported this), kicking (9%), throwing (9%), strangling (9%), stabbing (6%), shooting (5%), burning or mutilation (3%). 'Passive' acts (neglect) included failing to provide adequate food or water (91%), veterinary care (26%), shelter (19%) or supervision (9%). Because the purpose of Levitt et al's study was to explore the link between animal cruelty and violence towards humans, associations between motivations for animal cruelty and methods used to harm/kill animals were not examined. In addition, the authors did not investigate why individuals may have been driven by particular motivations or why they chose to use certain methods of abuse. One construct which may help to further our understanding of this is impulsivity.

Impulsivity

Only one study to date has systematically investigated the link between animal cruelty and impulsivity. In this study, Parfitt and Alleyne (2017) found that there was a positive correlation between impulsivity and animal cruelty propensity, but a negative correlation between neuroticism and animal cruelty. As the authors posit, these findings suggest that impulsivity and neuroticism may

relate to different types of animal cruelty; a high level of impulsivity may be associated with “explosive” animal cruelty, whereas low neuroticism may be associated with premeditated, methodical cruelty. Thus, further research is needed to examine whether types of animal abuser exist and whether these can be distinguished by different patterns of emotion/self-regulation. This is important as impulsivity may be a key factor in animal cruelty perpetration and it may be beneficial for impulsivity to be targeted in treatment programs which aim to reduce reoffending.

With this in mind it is important to consider the multifaceted nature of impulsivity.¹ Although the Barratt Impulsiveness Scale (BIS-11; Patton, Stanford, & Barratt, 1995) used in Parfitt and Alleyne’s study assesses three subscales (Non-planning, Motor Impulsivity, and Attentional Impulsivity), it has been argued that BIS subscale differences are primarily attributable to responses to questions with substantial loadings and so differential correlations between the BIS subscales and external factors may be a function of individual differences in responses to the doublets that exist on each subscale (see Steinberg, Sharp, Stanford & Tharp, 2013). Thus, other measures specifically designed to assess more narrowly defined facets of impulsiveness may be better at detecting differences in impulsiveness among animal abuse perpetrators. The UPPS-P Impulsive Behavior Scale (Cyders et al., 2007; Lynam, Smith, Cyders, Fischer, & Whiteside, 2007) may be suitable for this purpose.

Two of the UPPS-P subscales (Premeditation and Perseverance) overlap to some extent with how impulsivity is conceptualized by the BIS-11 (Peters, Erisman, Ipton, Baer & Roemer, 2011), however the UPPS-P also assesses other aspects of impulsivity, including the tendency to engage in rash action when in a state of positive and negative emotion and the tendency to seek out stimulation. The five UPPS-P subscales are Sensation Seeking, Lack of Premeditation, Lack of Perseverance, Negative Urgency, and Positive Urgency and these subscales have been found to relate differently to problematic behaviors. For example, Positive Urgency (a tendency to act rashly under intense positive

¹ It is surprising that this has not been examined before because although early research argued that impulsivity is a unidimensional construct (e.g. Barratt, 1959; Jackson, 1984; Tellegen, 1982; Guilford & Zimmerman, 1949), the prevailing view for some time has been that impulsivity is multidimensional in nature (e.g. Parker, Bagby, & Webster, 1993; Reynolds, Ortengren, Richards & de Wit, 2006; Rochat, Billeux, Gagnon & Van der Linden, 2017; Tonnaer, Cima & Arntz, 2016; Whiteside & Lynam, 2001).

emotion) has been found to relate to risky sexual behavior, pathological gambling, and alcohol dependence (Cyders & Smith, 2007; Cyders et al., 2007; Zapolksi, Cyders, & Smith, 2009; Noel et al., 2001), and Negative Urgency (a tendency to act rashly when distressed) has been found to significantly predict intimate partner violence but not general aggression (Derefinko, DeWall, Metzger, Walsh & Lynam, 2011). Given that the UPPS-P subscales have been found to have different associations with behavior, it is plausible that these facets of impulsivity may relate differentially to specific forms of animal cruelty.

The current study

Whilst it has been acknowledged that a model of animal cruelty should consider motivations for animal abuse (Hensley & Tallichet, 2005), it is also important to consider why perpetrators are driven by particular motivations and why they choose to use certain methods of abuse over others, and impulsivity may help further our understanding of this. Although associations between animal cruelty and impulsivity have been explored (e.g. Parfitt & Alleyne, 2017), this prior research has either conceptualized impulsivity as a unidimensional construct or has examined impulsivity subscales which are too broad to enable more nuanced relationships to be detected. The current study seeks to bridge this gap in the literature by examining associations between specific motivations for animal cruelty, particular methods of animal cruelty, and different facets of impulsivity. This is worthwhile because if relationships are found between certain forms of animal cruelty and particular facets of impulsivity then this knowledge can be used to inform the development of treatment programs which aim to reduce reoffending among animal abuse perpetrators. Based upon previous research, several associations are hypothesized.

First, it is hypothesized that the animal cruelty motivations of Retaliation and Control will be significantly associated with the method of Beating/Kicking an animal. This is expected because when an individual seeks to retaliate against an animal or to control an animal they are likely to feel highly emotionally charged (e.g. feeling angry because their pet dog has chewed the furniture) and will subsequently be likely to choose a method to harm/kill the animal which is quick to use (beating/kicking an animal is a more readily available method than going to fetch a weapon for

example). This is consistent with the displacement perspective of animal abuse which posits that harming or killing an animal serves the purpose of venting frustration and anger (Arluke, 2002).

Second, since research has found that individuals who score highly on Urgency tend to have impulsive responses under conditions of strong emotion (Derefinko et al., 2011), it is expected, based on the reasoning outlined above, that participants who report an animal cruelty motivation of Retaliation or Control will have a significantly higher score on Urgency (particularly Negative Urgency) than participants who do not report these motivations.

Third, it is hypothesized that participants who report Amusement as a motivation for animal cruelty will have significantly higher scores on Sensation Seeking than participants who do not report Amusement as a motivation. This is expected as previous studies have found that Sensation Seeking relates to general enjoyment of humor (Forabocso & Ruch, 1994; Furnham, 2004; Lourey & McLachlan, 2003; Ruch, 1988).

Fourth, since prior research has shown that high levels of Sensation Seeking have been found among individuals who hunt animals for sport (Zuckerman, 2000, 2008), it is expected that participants who have Shot an animal will have a significantly higher score on Sensation Seeking than participants who have not used this method.

Finally, because certain methods of animal cruelty such as Burning or Drowning are likely to involve more of a time commitment, it is hypothesized that participants who have used these methods will have a significantly lower score on Lack of Perseverance than participants who have not used these methods.

METHOD

Participants

An opportunity sample of 130 undergraduate students was recruited from a University campus in a City in the central north of England. There were 77 females and 53 males with a mean age of 23.39 ($SD = 7.60$, range 18 to 55). Ninety-three percent of participants were White, 4% were Black, and 3% Asian. Participants were studying on a variety of Social Science courses and there were no exclusion criteria other than that the participant had to be aged 18 or above.

Measures

Animal cruelty

The Boat Inventory on Animal-Related Experiences (BIARE, Boat, 1999) is a comprehensive measure which was designed to assess ownership of pets, support from pets during stressful times, loss of pets, and animal cruelty but it has been criticized in terms of its difficulty in administration and length (Baldry, 2004). Adaptations of it have subsequently been developed (e.g. Flynn, 1999a, 1999b; Henry, 2004), the most widely used of which was developed by Miller and Knutson (1997). This revision of the BIARE was used in the current study. The items encompass pet ownership, witnessing an animal being harmed or killed, harming or killing an animal oneself, and witnessing or engaging in sexual behavior with an animal.² Items are responded to on a yes/no scale and respondents are asked to state which species of animal were involved in the act(s), at what age they carried out the act(s), and what happened afterwards. None of the items relate to hunting (for either sport or to obtain food), the killing of animals intended for slaughter, the humane euthanasia of animals, or the killing of pests.

The BIARE was revised in the current study by incorporating Kellert and Felthous' (1985) nine motivations of animal cruelty (Control; Retaliation Against an Animal; Prejudice; Expression of Aggression; Enhancement of aggression; Amusement; Retaliation Against a Person; Displacement of Aggression; and Sadism). Participants were asked to circle which motivations applied to the act(s) of

² On request of the Research Ethics Committee, and in keeping with Henry (2004), the BIARE was adapted to exclude questions relating to sexual contact with animals.

animal cruelty they had engaged in. The methods of animal cruelty specified by Tallichet et al. (2005) were also incorporated into the BIARE and participants were requested to circle which method they had used to harm/kill an animal from a list provided (Drowned, Beat/kicked, Shot, Burned, Trapped, Squashed, Threw an Object at, Stabbed, Strangled, Deliberately Did Not Feed). The BIARE has also been adapted in other studies to include items on motivations of animal cruelty (e.g. Flynn, 1999a, 1999b; Henry, 2004) without adversely affecting the psychometric properties of the measure.

Impulsivity

The UPPS-P Impulsive Behavior Scale (Cyders et al., 2007; Lynam et al., 2007) is a 59-item self-report measure which assesses five dispositions to impulsive action: *Sensation Seeking* (the inclination to enjoy thrilling activities and openness to new experiences that could be dangerous); *Lack of Premeditation* (not considering the consequences of a behavior before acting); *Lack of Perseverance* (difficulties in staying focused on a long or difficult task); *Negative Urgency* (the tendency to have strong impulses when feeling distressed); and *Positive Urgency* (the inclination to act rashly in response to a positive mood). The first four subscales were assessed by the original 45-item version of the UPPS (Whiteside & Lynam, 2001), and the fifth subscale was added on the basis of later work by Cyders et al. (2007) and Lynam et al. (2007). Respondents rate each item on a four-point scale ranging from 1 (*agree strongly*) to 4 (*disagree strongly*) and some items are reverse scored. Items for the different subscales are summed to yield separate subscale scores, and the total number of items are summed to yield a Total Impulsivity score, with higher scores reflecting a higher degree of impulsivity.

The UPPS-P has demonstrated robust psychometric properties in different populations including undergraduate and young adult populations (Billieux et al., 2012; Cyders et al., 2007; Cyders, 2013) as well as clinical populations (Albein-Urios, Martínez-González, Lozano, Clark, & Verdejo-García, 2012; Clark et al., 2012; Fossati et al., 2016). For example, Carlson, Pritchard and Dominelli (2013) reported high Cronbach alpha coefficients for the UPPS-P scales for undergraduate students: Sensation Seeking (.89), Lack of Premeditation (.88), Lack of Perseverance (.85), Negative Urgency (.88), and Positive Urgency (.93). In addition, each of the scales have demonstrated good convergent

validity across different assessment methods, good discriminant validity within assessment methods, and they correlate differentially with external variables (Cyders, 2013; Smith et al., 2007). The UPPS-P scales demonstrated high Cronbach alpha coefficients in the current study: Sensation Seeking (.87), Lack of Premeditation (.87), Lack of Perseverance (.86), Negative Urgency (.89), and Positive Urgency (.84).

Procedure

The research was granted ethical approval by the author's University Research Ethics Committee and conducted in accordance with the British Psychological Society's (BPS, 2014) Code of Human Research Ethics. Potential participants were approached in person by the researcher on the University campus (in social areas and in non-quiet study areas of the library) and were provided with an information sheet which explained the purpose of the study. This stated that the study sought to explore how and why people engage in certain aggressive behaviors towards animals and whether these may relate to certain personality traits (although it was not stated which particular personality traits were being measured). The information sheet made it clear that taking part in the study was voluntary, that participants' responses would remain anonymous, and that any questions participants did not wish to respond to could be omitted. It also advised people not to take part if they felt that responding to questions about animal cruelty may cause them distress. The information sheet also stated that informed consent would be given when participants posted their completed questionnaires in a secure returns box, and that it would not be possible to withdraw from the study after this since the questionnaires would be anonymous. After reading the information sheet potential participants were given the opportunity to ask the researcher any questions they had. Participants who claimed that they were happy to take part were given a copy of the BIARE and the UPPS-P (with the terms 'animal cruelty' and 'impulsivity' removed) and were asked to complete these quietly and alone without discussing their responses with anyone. Upon completion of the questionnaires participants were given a written debrief sheet which reiterated the purpose of the study (and revealed that the personality traits measured were facets of impulsivity) and which reminded them of their right to withdraw prior to posting their completed questionnaires in the secure returns box.

Analytic procedures

Data were coded and analyzed using the statistical software program SPSS. BIARE items were coded as nominal data since most items received a “yes” or “no” response (e.g. “Have you ever intentionally hurt or killed a pet or animal other than to help the animal because it was hurt, old, or sick; to protect yourself or another person; or because they were farm animals always intended for slaughter?”). The motivations for animal cruelty items were also coded as nominal data (respondents who stated that a specific motivation did not apply at all were coded as ‘0’ and respondents who stated that the motivation did apply were coded as ‘1’).³ Similarly, responses to the methods of animal cruelty items were coded as ‘0’ if the respondent did not circle a given method or ‘1’ if they did circle a given method. Frequencies were examined for BIARE items, including the percentage of the sample who had engaged in animal cruelty, the species involved in the acts of animal cruelty, the motivations for animal cruelty, and the methods of animal cruelty used.⁴ Kolmogorov–Smirnov tests were conducted to assess the normality of UPPS-P scores and these indicated that there was no significant deviation from normality for any of the scales. One outlier was identified for the UPPS-P total score but this was retained as it was not considered extreme enough to warrant removal.

Associations between motivations for animal cruelty and methods of animal cruelty were examined using Pearson chi-square tests. This enabled Hypothesis 1 to be tested (that the motivations of Retaliation and Control would be significantly associated with the method of Beating/Kicking).

Independent-samples *t*-tests were conducted to compare UPPS-P scores for animal abusers and non-animal abusers, and one-way ANOVAs were performed to compare UPPS-P scores for participants who had engaged in no animal cruelty vs. one act of cruelty vs. more than one act of cruelty.

³ It was not possible to compare UPPS-P scores for those who reported perpetration of animal cruelty for the motivation of either Retaliation Against a Person, Displacement of Aggression, Sadistic Pleasure, Expression of Aggression Through an Animal, or Enhancement of One’s Own Aggression as not enough participants reported these motivations. Given that research has found that animal cruelty motivated by the desire to retaliate against another person is significantly associated with arrest histories for interpersonal violence (Levitt, 2016) it is not surprising that only a small percentage of the student sample reported motivations which involved another person in some way. In addition, four of the methods (Trapped, Stabbed, Deliberately Did Not Feed, and Strangled) were reported by a very small number of participants (four participants, two participants, two participants, and one participant, respectively) and so these methods were excluded from the analyses since the group sizes were too small for analysis. This is consistent with prior research on animal cruelty which has found that the frequencies of many acts were too small to permit analysis (e.g. Miller & Knutson, 1997).

⁴ Although a qualitative question was included on the BIARE (“What happened after [the act of cruelty]?”) the majority of participants did not respond to this question and so these data were not analyzed.

Independent-samples *t*-tests were carried out to compare mean UPPS-P scores for participants who did vs. did not report particular motivations for animal cruelty. These *t*-tests enabled Hypotheses 2 and 3 to be tested (that perpetrators who reported the motivation of Retaliation or Control would score significantly higher on Negative Urgency than perpetrators who did not report these motivations, and that perpetrators who reported the motivation of Amusement would score significantly higher on Sensation Seeking than perpetrators who did not report this motivation). Finally, another series of independent-samples *t*-tests were performed to compare mean UPPS-P scores for participants who did vs. did not report using certain methods of animal cruelty. These *t*-tests enabled Hypotheses 4 and 5 to be tested (that perpetrators who Shot an animal would score significantly higher on Sensation Seeking than perpetrators who did not use this method, and that perpetrators who Burned or Drowned an animal would score significantly higher on Lack of Perseverance than perpetrators who did not use these methods). Because population effect sizes are commonly estimated on the basis of samples, and population effect size estimates that are based on sample averages tend to overestimate the true population effect (Lakens, 2013; Thompson, 2006), corrections of bias were used; the correction for Cohen's *d* (Hedges' *g*) was used for all *t*-tests, and the correction for eta squared (omega squared; ω^2) was used for all ANOVAs.

RESULTS

Descriptive statistics

The frequencies of animal cruelty behaviors, species involved in the acts of animal cruelty, motivations for animal cruelty, and methods of animal cruelty are reported in Table 1. Approximately half the sample (55%) reported that they had intentionally harmed or killed at least one animal (excluding incidents where the animal was hunted for sport or food, or humanely euthanized). Dogs were the most commonly reported species involved in acts of animal cruelty (86% of participants who reported engaging in at least one act of animal cruelty had abused at least one dog), followed by spiders (81%), cats (35%), birds (33%), mice (28%), lizards (10%), rabbits (8%) and horses (6%).

The most prevalent motivations were Prejudice for a particular species (63% of participants who reported abusing at least one animal reported this as their main motivation), followed by Amusement (54%), Control (46%), and Retaliation against an animal (39%). Far fewer participants reported Retaliation against a person (11%), Displacement of Aggression (8%), Sadism (6%), Expression of Aggression Through an Animal (4%) or Enhancement of One's Own Aggression (3%).

The most commonly reported method of animal cruelty was beating/kicking an animal (97% of participants who reported abusing at least one animal reported this as their main motivation), followed by squashing an animal (78%), throwing an object at an animal (40%), shooting (38%), drowning (29%), burning (28%), trapping (6%), deliberately not feeding an animal (3%), stabbing (3%), and strangling (1%).

Associations between motivations for animal cruelty and methods of animal cruelty

As shown in Table 2, Pearson Chi-square tests revealed that participants who were motivated by prejudice were significantly more likely to have squashed an animal than to have not squashed an animal, $\chi^2(1, N = 45) = 71.40, p < .001$. In addition, participants who were motivated by prejudice were significantly more likely to have thrown an object at an animal than to not have thrown an object at an animal, $\chi^2(1, N = 45) = 6.14, p = .013$.

Participants who were motivated by retaliating against an animal were significantly more likely to have beat/kicked an animal than to have not beat/kicked an animal, $\chi^2(1, N = 28) = 5.33, p = .021$. Similarly, participants who were motivated by Control were significantly more likely to have beat/kicked an animal than to have not beat/kicked an animal, $\chi^2(1, N = 33) = 37.17, p < .001$. Hypothesis 1 is therefore supported.

Participants who were motivated by amusement were significantly more likely to have *not* beat/kicked an animal than to have beat/kicked an animal, $\chi^2(1, N = 39) = 9.18, p = .002$, more likely to have *not* shot an animal than to have shot an animal, $\chi^2(1, N = 39) = 12.13, p < .001$, and more likely to have *not* thrown an object at an animal than to have thrown an object at an animal, $\chi^2(1, N =$

39) = 4.29, $p = .038$. On the other hand, participants motivated by amusement were significantly *more* likely to have drowned an animal than to have not drowned an animal, $\chi^2(1, N = 39) = 4.03, p = .045$.

Comparisons of UPPS-P scores for animal abusers and non-animal abusers

Mean UPPS-P scores for animal abusers ($n = 75$) and non-animal abusers ($n = 55$) are shown in Table 3. Independent-samples t -tests revealed that there were no significant differences between the two groups on any of the scales (see Table 3). However, because these comparisons did not consider the *frequency* of animal cruelty (perpetrators who had engaged in more than one act of cruelty were combined with perpetrators who had engaged in only one act), a one-way ANOVA was conducted to compare the mean UPPS-P scores of three groups: participants who had not engaged in animal cruelty ($n = 55$), those who had engaged in one act of cruelty ($n = 27$), and those who had engaged in more than one act of cruelty ($n = 48$). The results revealed that there was a significant difference between the groups on Sensation Seeking, $F(2, 127) = 3.90, p = .023$ with a small effect size ($\omega^2 = .04$). A post-hoc Tukey HSD test revealed that participants who had engaged in more than one act of animal cruelty had a significantly higher score than those who had engaged in one act of cruelty or no cruelty, and participants who had engaged in one act of cruelty had a significantly higher score than those who had not engaged in cruelty.

Comparisons of UPPS-P scores for perpetrators who did vs. did not report particular motivations for animal cruelty

Mean UPPS-P scores for participants who did vs. did not endorse particular motivations for animal cruelty are shown in Table 4. Independent-samples t -tests (see Table 5) revealed that abusers who reported Retaliation as a motivation had a significantly higher mean score on Negative Urgency than participants who did not report this motivation, $t(128) = 2.67, p = .009$, with a medium effect size (Hedges' $g = .58$). In addition, participants who reported Control as a motivation had a significantly higher mean score on Negative Urgency than participants who did not report this motivation ($M = 31.33$ vs. $M = 28.28, t(128) = 2.14, p = .034$) with a small effect size (Hedges' $g = .43$). Hypothesis 2 is therefore supported.

Participants who reported Amusement as a motivation had significantly higher mean scores than those who did not report Amusement as a motivation on Sensation Seeking, $t(128) = 2.65, p = .001$ with a medium effect size (Hedges' $g = .52$) and so Hypothesis 3 is supported. Abusers who reported Amusement as a motivation also had significantly higher scores on Negative Urgency, $t(128) = 2.95, p < .001, g = .57$), Total Impulsivity, $t(128) = 2.51, p = .013, g = .48$), Lack of Premeditation, $t(128) = 2.06, p = .042, g = .39$), and Positive Urgency, $t(128) = 1.95, p = .052, g = .38$).

Comparisons of UPPS-P scores for perpetrators who did vs. did not report using particular methods of animal cruelty

Mean UPPS-P scores for participants who did vs. did not report using certain methods of animal cruelty are shown in Table 6. Independent-samples t -tests (see Table 7) revealed that participants who had shot an animal had a significantly higher mean score on Sensation Seeking, $t(128) = 2.92, p = .004$ with a medium effect size (Hedges' $g = .64$). Hypothesis 4 is therefore supported.

In addition, participants who had beat/kicked an animal had a significantly higher mean score than those who had not on Lack of Premeditation, $t(128) = 2.19, p = .030$ and Negative Urgency, $t(128) = 2.78, p = .006$ with small effect sizes (Hedges' g) of .39 and .49 respectively.

Furthermore, participants who had drowned an animal had a significantly lower mean Lack of Perseverance score than those who had not drowned an animal, $t(128) = 2.26, p = .025$ with a medium effect size (Hedges' $g = .53$). However, there was no significant difference in Lack of Perseverance score between those who had burned an animal and those who had not and so Hypothesis 5 is only partly supported. An additional finding which was not hypothesized was that participants who had drowned an animal had a significantly lower mean Total Impulsivity score than those who had not, $t(128) = 3.41, p = .001$ with a large effect size (Hedges' $g = .80$).

DISCUSSION

The purpose of the current study was to investigate associations between specific motivations for animal cruelty, particular methods of animal cruelty, and different facets of impulsivity. This makes a

novel contribution to the literature because while previous studies have explored motivations for animal cruelty (e.g. Alleyne et al., 2015; Arluke, 2002; Ascione, 2001; Ascione et al., 1997; Hensley & Tallichet, 2005; Hensley et al., 2011; Kellert & Felthous, 1985; Levitt et al., 2016) or the methods used to abuse animals (e.g. Felthous, 1980; Felthous & Kellert, 1987a; Levitt et al., 2016; Merz-Perez et al., 2001; Miller & Knutson, 1997; Tallichet et al., 2005), no research to date has explored whether specific motivations for animal cruelty and/or methods of animal cruelty relate to different facets of impulsivity. This is plausible given that differential associations have been found between various facets of impulsivity and different violent behaviors toward humans (Derefinko et al., 2011).

The hypothesis that the motivations of Retaliation and Control would be significantly associated with the method of Beating/Kicking was supported. In addition, the hypothesis that participants who reported a motivation of Retaliation or Control would have a significantly higher score on Urgency (particularly Negative Urgency) than participants who did not report these motivations, was also supported. These findings are not surprising because when an individual seeks to retaliate against an animal or feels the need to control an animal they are likely to feel highly emotionally charged (e.g. feeling angry because their pet dog has chewed the furniture), and individuals who score highly on Urgency tend to have impulsive responses under conditions of strong emotion (Derefinko et al., 2011). Individuals who feel highly emotionally charged may be more likely to choose a method to harm/kill an animal which is quick to use and beating/kicking an animal is a more readily available method than going to fetch a weapon. This is consistent with the displacement approach to animal abuse (Arluke, 2002).

The hypothesis that participants who reported Amusement as a motivation would have significantly higher scores on Sensation Seeking than participants who do not report Amusement as a motivation was supported. This is consistent with studies which have found that Sensation Seeking relates to general enjoyment of humor (Forabocso & Ruch, 1994; Furnham, 2004; Lourey & McLachlan, 2003; Ruch, 1988). It has been suggested that humor offers individuals who score highly on Sensation Seeking a way to express their need for novel and intense stimulation (Furnham, 2004). Also relevant to this is the claim of Luk, Staiger, Wong and Mathai (2011) that animal cruelty in childhood may

result from impulsive behavior and/or mood problems linking animal cruelty with depression and anxiety. This is yet to be explored in adult populations and so future research is planned to explore associations between animal cruelty, different facets of impulsivity, depression, anxiety, and self-control.

Also worthy of note is the finding that participants who reported Amusement as a motivation had significantly higher scores than those who did not report this motivation on Lack of Premeditation, Positive Urgency and Negative Urgency (as well as Total Impulsivity). The finding that Amusement was significantly associated with both Positive and Negative Urgency is not surprising since prior research has reported strong correlations between Positive and Negative Urgency (Cyders et al., 2007), and has suggested that these two forms of Urgency may have common underlying psychological mechanisms (Billieux et al., 2010). Although it could not be determined whether animal abusers were distressed or in a positive mood at the actual time they committed the acts of cruelty (only that they had a *tendency* to act rashly when experiencing intense emotional affect), it is possible that the act of cruelty could serve to divert attention away from distress and/or elevate their mood. Interestingly, in their study of college students, Schwartz et al. (2012) found that animal abusers (not classified on the basis of motivations) scored higher on the criminal thinking subscale of Power Orientation which indicates that they had a strong need to be in control of other people and environments. In the current study some participants who reported being cruel to an animal for Amusement stated that the act was carried out at a party.⁵ In this context, they may feel both emotions (e.g. in a positive mood because they are at a party, and distress perhaps due to social anxiety as they want to appear popular and look like they are enjoying themselves). If animal abusers have a need to control things as Schwartz et al. suggest then they may do something shocking or amusing to take the focus away from themselves and to remain in control. Indeed, research has suggested that behaviors conducted under intense emotional affect (i.e. Urgency) are related to an increased focus on the present moment and a reduced focus on the longer-term consequences of behavior as the individual has the desire to obtain relief from a negative emotion (Billieux et al., 2010; Cyders & Smith, 2008).

⁵ Several participants did not provide qualitative information in response to the question “What happened afterwards?” and so percentages are not provided here.

The current findings surrounding the motivation of amusement may be worthwhile exploring in relation to the symbolic interactionist study of violence which posits that we must attempt to understand how people define the social meaning of their actions. As noted by Arluke (2002), a symbolic interactionist study of animal cruelty would unpack the logic, reasoning and decision making that underpins and influences the behavior of animal cruelty perpetrators as it has done for other forms of criminal behavior. From this perspective play (which may involve animal abuse) is considered to be a vital mechanism to explore new identities among children, and play may involve more serious deviance and larger risks among adolescents (Chick & Donlon, 1992; Fine, 1992). If we are to apply a symbolic interactionist approach to understanding the current study's findings surrounding amusement then future work in this area must try to understand what it means and feels to harm or kill an animal for amusement.

The hypothesis that participants who reported the method of Shooting an animal would have a significantly higher score on Sensation Seeking than participants who did not report this method was supported. This is consistent with prior research that has found that individuals who hunt animals have higher levels of Sensation Seeking than those who do not (Zuckerman, 2000, 2008).

Finally, the hypothesis that participants who reported using the method of Drowning or Burning an animal would have a significantly lower score on Lack of Perseverance than participants who did not report these methods was partly supported (only Drowning was significantly associated with Lack of Perseverance). This is logical since it may require more perseverance to drown an animal than to use other methods of cruelty. Interestingly, participants who reported drowning an animal scored significantly lower on Total Impulsivity than participants who had not drowned an animal) which reinforces this finding. However, more research is needed to understand why burning was not significantly associated with Lack of Perseverance.

Limitations of the study

It is important to acknowledge that this study has some limitations. First, although the finding that

over half of the current sample (55%) reported engaging in at least one act of animal cruelty is consistent with previous research on animal cruelty in student populations (e.g. Arluke, 2002; Baldry, 2005; Miller & Knutson, 1997; Sanders & Henry, 2015), it is possible that participants may have exaggerated or fabricated their responses. While participants were asked to complete the measures quietly and alone without discussing their responses with anyone in order to reduce the potential effects of social desirability/peer pressure it must be acknowledged that the measures were administered in social areas of the University campus (e.g. waiting areas by the helpdesk, non-quiet study areas of the library) which could have increased the likelihood that participants may have exaggerated or fabricated their responses. On the other hand, given that students are more likely to underreport than overreport animal cruelty (Arluke, 2002) this figure may not reflect the true extent of the problem. If the data accurately reflect the behavior reported by participants then they highlight that animal cruelty is just as much of an issue in student populations as it is in clinical and offender populations (see Ascione, 1993; Felthous, 1980; Heath, Hardesty & Goldfine, 1998; Hensley & Tallichet, 2005; Kellert & Felthous, 1985; Merz-Perez et al, 2001; Overton, Hensley & Tallichet, 2012). Nevertheless, the findings of the current study cannot be generalized to clinical or offender samples and so further research is needed to investigate whether the current findings can be replicated in these populations.

Although participants were asked to rate which of the motivations proposed by Kellert and Felthous (1985) applied to the act(s) of animal cruelty they had engaged in there may be some overlap between these motivations. For example, it could be argued that if a person harms or kills an animal for Amusement then they are deriving pleasure from it, meaning that the motivation of Sadism may also apply to some extent. A widely accepted definition of sadism is “Deriving pleasure from the suffering of others” (Juni, 2009), although as O’Meara and Hammond (2016) point out, this is quite reductive and simplistic since the pleasure gained can constitute different forms, such as amusement, satisfaction or enjoyment, sexual gratification, etc. Thus, distinguishing between Amusement and Sadism is difficult. For example, Sadism may refer to acts which provide the perpetrator with sexual gratification or prolonged pleasure at seeing an animal suffer (as opposed to finding it funny). It would therefore be useful for future studies to make more of a distinction between Amusement and

Sadism and to make the difference clear for participants. It would also be interesting for future research to explore the point at which Amusement crosses over into Sadism and whether they are distinct or related motivations. This could be explored in the context of a symbolic interactionist approach to exploring animal cruelty as discussed above.

Another limitation of the current study is that because it is cross-sectional it is not known whether particular motivations for animal cruelty, certain methods of animal cruelty, or specific facets of impulsivity are related to the maintenance or escalation of animal cruelty perpetration, and so it would be useful for longitudinal prospective studies to explore this.

Implications of findings

The findings of this study suggest that theoretical models which seek to explain animal cruelty perpetration should include impulsivity construed as a multidimensional construct, especially since the UPPS-P Total Score did not differentiate between animal abusers and non-animal abusers. In addition, models should consider motivations for animal cruelty and methods of animal cruelty rather than simply classifying individuals as ‘animal abusers’ or ‘non-animal abusers’ since some interesting relationships between these various motivations/methods and scales of the UPPS-P were identified.

The current findings also have implications for the assessment and treatment of animal cruelty perpetrators. As noted recently by Levitt (2017), only some statutes contain provision for adults convicted of animal cruelty and very little is known about which types of treatment are effective for animal abusers. This is especially difficult to determine since animal abusers differ in terms of their level of psychopathology (Shapiro & Henderson, 2016). The first psychological intervention to be developed for adult animal abusers was the AniCare Model of Treatment for Animal Abuse (the ‘AniCare Approach’; Jory & Randour, 1999). This program was based on an adaptation of Jory’s Intimate Justice Theory (Jory, Anderson, & Greer, 1997) which focuses on the refusal of perpetrators to accept responsibility for their behavior. However, as Shapiro and Henderson (2016) point out, as with all forms of violent behavior there are many pathways to animal cruelty and different forms of

cruelty and so sub-populations of animal abuser may require additional or alternative forms of intervention.

It has been suggested that it would be worthwhile to assess different facets of impulsivity within forensic populations as they may help to differentiate between patients who have a risk of violent behavior and subsequently aid assessment and treatment planning (Haden & Shiva, 2008). In a similar vein, the findings of the current study indicate that it may be useful to assess different facets of impulsivity among animal abusers since different motivations for animal cruelty and methods of animal cruelty were significantly associated with different facets of the UPPS-P. An assessment of a perpetrator's scores on the UPPS-P scales could constitute a useful addition to existing toolkits such as the AniCare Approach noted above which can be adapted for perpetrators with different presentations of animal cruelty behavior.

This is in keeping with the risk, need and responsivity (RNR) principles embedded in the offender treatment literature (e.g. Andrews & Bonta, 2006; Andrews, Bonta, & Hoge, 1990). However, these RNR principles are almost exclusively referred to in the context of offending toward humans and it can be argued that they should be considered more in the animal cruelty literature. The current findings have direct implications for the assessment and treatment of animal cruelty perpetrators. For example, an individual whose motivation for animal cruelty is Retaliation or Control and who scores highly on the Negative Urgency scale of the UPPS-P may benefit from a different treatment approach to someone who is motivated by Amusement and who scores highly on Sensation Seeking. In the former example, the individual may benefit more from an intervention which focuses on anger management, whereas in the latter example an approach which focuses on regulation of arousal may be more suitable.

Conclusions

This study extends our understanding of the link between animal cruelty and impulsivity. Specifically, the findings suggest that different forms of animal cruelty relate to specific facets of impulsivity

which highlights the importance of examining this form of criminal behavior in relation to a multidimensional conceptualization of impulsivity rather than a unidimensional one.

DISCLOSURE STATEMENT

The author has no financial interest or benefit arising from the application of this research.

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Table 1

Proportions of endorsements on the BIARE ($N = 130$)

	<i>n</i> indicating any endorsement (%)
<i>Act of animal cruelty</i>	
Intentionally harmed or killed an animal	72 (55)
Given an animal recreational drugs	16 (12)
Made an animal fight	2 (2)
<i>Species involved in act of animal cruelty</i>	
Dog	62 (86)
Spider	58 (81)
Cat	25 (35)
Bird	24 (33)
Mouse	20 (28)
Lizard	9 (13)
Fish	7 (10)
Rabbit	6 (8)
Horse	4 (6)
<i>Motivation for animal cruelty</i>	
Prejudice	45 (63)
Amusement	39 (54)
Control	33 (46)
Retaliation Against an Animal	28 (39)
Retaliation Against a Person	8 (11)
Displacement of Aggression	6 (8)
Sadism	4 (6)

Expression of Aggression Through an Animal	3 (4)
Enhancement of One's Own Aggression	2 (3)
<i>Method of animal cruelty</i>	
Beat/kicked	70 (97)
Squashed	56 (78)
Threw an object at	29 (40)
Shot	27 (38)
Drowned	21 (29)
Burned	20 (28)
Trapped	4 (6)
Deliberately did not feed	2 (3)
Stabbed	2 (3)
Strangled	1 (1)

Table 2

Associations between motivations for animal cruelty and methods of animal cruelty

Method	Motivation for animal cruelty											
	Prejudice (<i>n</i> = 45)			Retaliation (<i>n</i> = 28)			Control (<i>n</i> = 33)			Amusement (<i>n</i> = 39)		
	<i>Yes n (%)</i>	<i>No n (%)</i>	χ^2	<i>Yes n (%)</i>	<i>No n (%)</i>	χ^2	<i>Yes n (%)</i>	<i>No n (%)</i>	χ^2	<i>Yes n (%)</i>	<i>No n (%)</i>	χ^2
Beat/Kicked	8(18)	37(82)	1.91	21(75)	7(25)	5.33*	19(58)	14(42)	37.17***	10(26)	29(74)	9.18**
Squashed	35(78)	10(22)	71.40***	12(43)	16(57)	2.45	15(46)	18(55)	3.60	15(39)	24(62)	1.55
Threw object at	39(87)	6(13)	6.14**	2(7)	26(93)	----	4(12)	29(88)	----	5(13)	34(87)	4.29*
Shot	2(4)	43(96)	----	2(7)	26(93)	----	2(6)	31(94)	----	5(13)	34(87)	12.13**
Drowned	4(9)	41(91)	----	2(7)	26(93)	----	2(6)	31(94)	----	35(90)	4(10)	4.03*
Burned	1(2)	44(98)	----	2(7)	26(93)	----	1(3)	32(97)	----	3(8)	36(92)	----

Note. * $p < .05$; ** $p < .01$; *** $p < .001$; ---- the Chi-Square assumption of cell count was violated due to small group sizes and so the Chi-Square statistic could not be reliably calculated.

Table 3

Means, standard deviations and differences in UPPS-P scores for animal abusers and non-animal abusers

UPPS-P Scale	Abusers (<i>n</i> =75)	Non-abusers (<i>n</i> =55)	<i>t</i>	<i>p</i>	<i>g</i>	No cruelty (<i>n</i> =55)	One act (<i>n</i> =27)	> One act (<i>n</i> =48)	<i>F</i>	<i>p</i>	ω^2
	M (<i>SD</i>)	M (<i>SD</i>)				M (<i>SD</i>)	M (<i>SD</i>)	M (<i>SD</i>)			
Sensation Seeking	26.93 (7.19)	25.41 (7.89)	1.14	.255	.20	23.04 (7.84)	26.42 (7.49)	27.00 (7.42)	3.90	.023	.04
Lack of Premeditation	24.15 (5.16)	23.24 (5.49)	.97	.335	.17	23.10 (5.41)	23.91(5.57)	24.48 (5.03)	.88	.418	.01
Lack of Perseverance	21.12 (3.23)	21.35 (3.71)	-.38	.707	.07	21.22 (3.70)	20.66 (3.35)	21.47 (3.15)	.48	.618	.01
Negative Urgency	31.84 (7.30)	30.19 (6.93)	1.30	.195	.23	29.67 (6.70)	30.79 (7.54)	31.93 (7.21)	1.31	.273	.01
Positive Urgency	37.45 (7.12)	37.80 (7.00)	-.28	.781	.05	37.77 (6.99)	36.62 (7.07)	37.87 (7.21)	.31	.736	.01
Total Impulsivity	141.15 (17.75)	138.32 (16.76)	.92	.359	.16	135.04 (16.25)	139.92 (16.61)	141.03 (17.99)	1.76	.177	.01

Note. g = Hedges' g effect size; ω^2 = Omega squared effect size.

Table 4

Means and standard deviations for UPPS-P scores for animal abusers who did vs. did not endorse particular motivations for animal cruelty

UPPS-P Scale	Prejudice		Retaliation		Control		Amusement	
	Yes (<i>n</i> =45)	No (<i>n</i> =85)	Yes (<i>n</i> =28)	No (<i>n</i> =102)	Yes (<i>n</i> =33)	No (<i>n</i> =97)	Yes (<i>n</i> =39)	No (<i>n</i> = 91)
	M (<i>SD</i>)	M (<i>SD</i>)	M (<i>SD</i>)	M (<i>SD</i>)	M (<i>SD</i>)	M (<i>SD</i>)	M (<i>SD</i>)	M (<i>SD</i>)
Sensation Seeking	24.96 (7.51)	26.64 (7.65)	26.86 (7.69)	25.83 (7.61)	25.51 (7.33)	26.23 (7.73)	27.19 (6.83)	23.41 (7.69)
Lack of Premeditation	24.31 (5.25)	23.47 (5.34)	22.86 (5.20)	24.01 (5.33)	24.67 (4.93)	23.45 (5.41)	25.21 (5.49)	23.14 (5.12)
Lack of Perseverance	21.13 (3.26)	21.26 (3.54)	21.25 (3.07)	21.21 (3.54)	21.45 (3.11)	21.13 (3.55)	21.23 (3.42)	21.21 (3.46)
Negative Urgency	30.04 (7.38)	31.32 (6.96)	30.93 (6.85)	26.87 (7.21)	31.33 (7.18)	28.28 (7.06)	32.05 (6.65)	28.15 (7.01)
Positive Urgency	37.69 (7.14)	37.55 (7.04)	37.92 (7.09)	37.51 (7.07)	37.36 (7.36)	37.68 (6.98)	38.35 (6.40)	35.84 (6.83)
Total Impulsivity	138.13 (17.14)	140.24 (17.27)	139.82 (15.71)	139.43 (17.65)	138.58 (16.49)	139.84 (17.49)	141.95 (16.53)	133.85 (17.01)

Table 5

Independent-samples *t*-tests to compare mean UPPS-P scores for abusers who did vs. did not endorse particular motivations for animal cruelty

UPPS-P scale	Motivation for animal cruelty											
	Prejudice			Retaliation			Control			Amusement		
	<i>t</i>	<i>p</i>	<i>g</i>	<i>t</i>	<i>p</i>	<i>g</i>	<i>t</i>	<i>p</i>	<i>g</i>	<i>t</i>	<i>p</i>	<i>g</i>
Sensation Seeking	-1.19	.233	.22	.63	.531	.13	-.47	.640	-.09	2.65	.001	.52
Lack of Premeditation	.86	.392	.16	-1.02	.310	.22	1.14	.258	.24	2.06	.042	.39
Lack of Perseverance	-.20	.844	.04	.06	.952	.01	.46	.645	.09	.03	.973	.01
Negative Urgency	-.98	.329	.18	2.67	.009	.58	2.14	.034	.43	2.95	.000	.57
Positive Urgency	.10	.917	.02	.28	.782	.06	-.22	.825	.04	1.95	.052	.38
Total Impulsivity	-.67	.507	.12	.11	.916	.02	-.36	.718	.07	2.51	.013	.48

Table 6

Means and standard deviations for UPPS-P scores for animal abusers who did vs. did not report using particular methods of animal cruelty

UPPS-P scale	Method of animal cruelty											
	Drowned		Beat/kicked		Shot		Burned		Squashed		Threw object at	
	Yes (n=21)	No (n=109)	Yes (n=70)	No (n=60)	Yes (n=27)	No (n=103)	Yes (n=20)	No (n=110)	Yes (n=56)	No (n=74)	Yes (n=29)	No (n=101)
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Sensation Seeking	20.50 (8.29)	22.32 (7.51)	24.37 (8.44)	26.29 (7.50)	26.32 (10.78)	19.40 (10.97)	31.33 (9.29)	27.93 (7.57)	24.60 (6.61)	26.70 (7.96)	23.13 (9.39)	26.38 (9.55)
Lack of Premeditation	24.50 (5.17)	23.73 (5.32)	26.44 (8.00)	23.38 (7.89)	28.20 (6.38)	26.58 (5.21)	23.33 (8.50)	23.77 (5.26)	24.10 (4.72)	23.61 (5.56)	27.87 (4.45)	26.49 (5.25)
Lack of Perseverance	18.17 (6.25)	21.36 (5.83)	21.87 (3.07)	21.12 (3.48)	22.60 (3.64)	21.16 (3.43)	23.33 (4.08)	21.17 (5.45)	20.90 (3.43)	21.36 (3.44)	22.25 (3.15)	21.15 (3.45)
Negative Urgency	27.17 (4.07)	29.06 (7.18)	31.51 (10.92)	26.38 (9.95)	28.20 (8.93)	30.99 (7.05)	31.00 (6.25)	30.88 (7.15)	30.87 (7.25)	30.88 (7.08)	26.75 (4.43)	26.38 (7.18)
Positive Urgency	32.83 (6.94)	34.83 (6.99)	34.56 (9.76)	36.02 (6.52)	31.80 (9.20)	33.45 (6.89)	39.00 (10.58)	37.57 (7.00)	38.55 (6.30)	37.18 (7.35)	32.38 (6.26)	33.29 (6.98)
Total Impulsivity	123.17 (21.87)	140.31 (20.92)	140.34 (20.64)	133.63 (20.36)	130.20 (14.86)	136.88 (17.22)	134.21 (15.87)	139.32 (17.22)	139.02 (16.14)	139.73 (17.72)	133.37 (16.00)	140.11 (17.16)

Table 7

Independent-samples *t*-tests to compare mean UPPS-P scores for abusers who did vs. did not report using particular methods of animal cruelty

UPPS-P scale	Method of animal cruelty																	
	Drowned			Beat/kicked			Shot			Burned			Squashed			Threw object at		
	<i>t</i>	<i>p</i>	<i>g</i>	<i>t</i>	<i>p</i>	<i>g</i>	<i>t</i>	<i>p</i>	<i>g</i>	<i>t</i>	<i>p</i>	<i>g</i>	<i>t</i>	<i>p</i>	<i>g</i>	<i>t</i>	<i>p</i>	<i>g</i>
Sensation Seeking	1.00	.319	.23	1.36	.176	.24	2.92	.004	.64	1.78	.077	.40	1.60	.112	.29	1.62	.107	.34
Lack of Premeditation	.61	.543	.15	2.19	.030	.39	1.37	.173	.28	.31	.758	.06	.53	.597	.09	1.29	.200	.28
Lack of Perseverance	2.26	.025	.53	1.31	.194	.23	1.92	.057	.41	1.69	.094	.45	.76	.451	.13	1.54	.126	.33
Negative Urgency	1.17	.245	.84	2.78	.006	.49	1.73	.087	.35	.07	.944	.02	.01	.994	.01	.26	.793	.06
Positive Urgency	1.20	.232	.29	.99	.326	.18	1.03	.306	.10	.77	.443	.16	1.12	.266	.20	.63	.528	.14
Total Impulsivity	3.41	.001	.80	1.86	.065	.32	1.84	.068	.42	1.23	.219	.31	.24	.81	.04	1.89	.061	.41