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**“Liking”, “Commenting”, and “Reposting”: Psychological Factors Associated to Online
Animal Abuse**

Lauren Ryan McGuirk and Emma Alleyne

Centre of Research and Education in Forensic Psychology

School of Psychology

University of Kent

Author Note

Correspondence concerning this article should be addressed to Emma Alleyne, Centre of
Research and Education in Forensic Psychology, School of Psychology, Keynes College,

University of Kent, Canterbury, Kent, CT2 7NP, England. E-mail:

E.K.A.Alleyne@kent.ac.uk

Abstract

With advancements in technology and accessibility to the internet comes the potential for new forms of offending behavior. Social Networking Sites (SNS) provide both platforms for nonhuman animal abuse to be displayed and interacted with. There is a dearth of research into the characteristics of animal abuse perpetrated with the intent to be displayed on SNS. The aim of this study was to explore the psychological correlates of engagement with posts depicting animal abuse and likelihood to create new animal abuse content for display on SNS. One hundred and eighty-five university students completed an online questionnaire, which included their self-reported likelihood to engage with images of animal abuse on SNS (i.e., “like”, “comment”, “share”, and/or recreate and post). We found high levels of animal-oriented callousness, as opposed to other predicted factors (e.g., narcissism), were significantly related to self-reported likelihood to recreate animal abuse content for display on SNS. This is the first study to examine displaying and interacting with animal abuse content on SNS, with implications of the study’s findings discussed.

Keywords: animal abuse, animal cruelty, social networking sites, callousness

“Liking”, “Commenting”, and “Reposting”: Psychological Factors Associated to Online Animal Abuse

Animal abuse is a multifaceted offence that includes acts that are both active (e.g., physical abuse) and passive (e.g., neglect). A widely used definition of animal abuse is: “all socially unacceptable behavior that intentionally causes unnecessary pain, suffering or distress and/or death to an animal” (Ascione, 1993, p. 83). Although animal abuse is a criminal offence, the threat of prosecution does not always appear to have a deterrent effect. This is most notably depicted on the Netflix Docu-series “Don’t F**k with Cats: Hunting an Internet Killer” where animal abuse incidents were posted and shared on Social Networking Sites (SNS) with limited intervention from police agencies. Given that approximately 87% of adults in the UK (Office of National Statistics, 2019), with similar figures in other countries, are using the internet daily, there are more opportunities for offending behavior to emerge. These opportunities are facilitated by the ability to engage with the internet anonymously, allowing access to an increasing volume of illegal content such as child sexual exploitation material (Steel, Newman, O’Rourke, & Quayle, 2020). Empirical research, to date, has focused on in-person acts of animal abuse (Alleyne & Parfitt, 2019), leaving online animal abuse with minimal consideration. However, the UK Royal Society for the Prevention of Cruelty to Animals (RSPCA) has commented on the duality of SNS, firstly as a means to aid prosecution, but secondly as a platform through which animal abuse can be more easily displayed (RSPCA, 2018).

The empirical research into animal abuse perpetration and SNS usage as separate fields is growing. However, what has yet to be substantiated is the potentially intertwined relationship between SNS usage and interactions with and perpetration of animal abuse. Therefore, the aim of the current study is two-fold: (1) to identify potential differences in how individuals interact with animal abuse on SNS compared to human-human content, and (2) to

identify the psychological factors that are associated with interacting and displaying animal abuse on SNS.

Personality traits influence the way we interact with others, both in-person and online. Equally, their behavioral manifestations vary the way we interact by species type. Parallels can be seen in how, for example, narcissistic traits impact on interpersonal and inter-species relations. Narcissism is characterized as reflecting a grandiose, positive, and inflated self-appraisal, coupled with a sense of entitlement or dominance (Blinkhorn, Lyons, & Almond, 2016). Narcissism functions as a form of self regulation (Back et al., 2013), whereby it informs how a person views themselves in relation to others and how their behavior can maintain their sense of grandiosity in any given context.

In a recent meta-analysis, McCain and Campbell (2018) examined the link between narcissism and SNS use. They found that online behaviors such as higher frequency of profile updates and posting of self-related content were associated with higher levels of narcissism. Specifically, the distinguishing feature of the posts was that they were more likely to focus on the person posting the material than on others (Gnambs & Appel, 2017; Liu & Baumeister, 2016). These online behaviors are indicative of the defining features of narcissism – i.e., to depict a positive, grandiose image. One way to achieve this could also be to demonstrate superiority and dominance over another being. The relationship between narcissism and animal abuse has been investigated (Kavanagh, et al., 2013) when exploring the relationships between the Dark Triad traits (narcissism, psychopathy, and Machiavellianism; Paulhus & Williams, 2002) and animal abuse. Although the narcissism – animal abuse link was not substantiated by Kavanagh et al.'s (2013) data, they did find a significant relationship between psychopathy and animal abuse.

A dominant feature of psychopathy (as well as narcissism and Machiavellianism) is a lack of empathy towards others (Jones & Paulhus, 2011). Empathy can be defined as “the

ability to understand and share in another's emotional state or context” (Cohen & Strayer, 1996, p.988). Lack of empathy (and also, callousness) is routinely linked with general antisocial behavior (Marshall & Marshall, 2011) and, more specifically, animal abuse (Alleyne & Parfitt, 2018; Gupta, 2008). It is also a pervasive feature of narcissism, which facilitates harmful behavior to maintain one’s sense of grandiosity (Hepper, Hart, Meek, Cisek, & Sedikides, 2014). To date, much of the available research has focused on human-oriented empathy due to its role within the *violence graduation hypothesis* (Arluke, Levin, Luke, & Ascione, 1999). The violence graduation hypothesis posits that animal abuse perpetrated during childhood is a precursor for interpersonal violence in adulthood. The assumption here is that animal abuse occurring during childhood is linked to poor empathy development, which, in turn, enables harmful behavior towards people. However, very little research has given attention to animal-oriented empathy and its role in perpetuating animal abuse behavior in adulthood.

Gupta (2008) was the first to examine animal-oriented empathy and callous traits as distinct constructs from human-oriented empathy. She found that animal-oriented callous traits were significantly correlated to animal abuse perpetration. Alleyne and Parfitt (2018) extended this research by examining whether human- and animal-oriented callousness have differential influences on animal abuse. They found that animal-oriented callousness was associated to self-reported animal abuse, over and above human-oriented callousness, when compared to a control group of participants self-reporting other types of antisocial behaviors (e.g., interpersonal violence). They concluded that empathy by species type played an important part in whether someone engaged in animal abuse or interpersonal violence. Knitting together these otherwise disparate literatures (i.e., personality traits and their relationships with animal abuse and SNS usage) provides an opportunity to further our understanding of how and why people offend online. For example, the SNS platform could

facilitate the interaction between personality traits such as narcissism and empathy (delineated by species type). Also, there could be differential explanations for which behaviors these factors are most associated to (i.e., “liking” posts versus “sharing” posts). Nonetheless, it can be conceptually argued that individuals with higher narcissism seeking to display their dominance, may abuse (directly or share images of) those which they hold callous attitudes towards (i.e., animals) to increase their sense of grandiosity on SNS platforms.

The way in which we interact on social media is not only explained by our appraisals of others (human or animal), but also serves the function as a behavioral manifestation of self-appraisals via constructs such as self-esteem. Some research has shown a correlation between self-esteem and SNS use. For example, Marshall et al. (2015) found that social media users with low self-esteem were more likely to post information about intimate partners, and their posts were motivated by a need for validation (e.g., attention-seeking, to feel accepted/included). However, there have also been inconsistent findings regarding self-esteem and SNS use, which is typical given the dynamic nature of self-esteem. This was demonstrated by the inability to detect significant effect sizes in Liu and Baumeister’s (2016) meta-analysis. What is evident is that self-esteem informs self-regulatory processes. In the context of animal abuse, when self-esteem is low and threatened, there is a potential for animal abuse perpetration as a method to enhance one’s self-esteem and feelings of self-worth (Alleyne & Parfitt, 2018). This presents an interesting hypothesis to test. That is, animal abuse depicted via SNS platforms might function as a form of raising self-esteem and seeking validation from others. Further, interactions such as “liking” and “sharing” could also serve a similar function. What is clear is that these self and other appraisals (i.e., narcissism, self-esteem, callous traits) do influence the likelihood of in-person animal abuse and SNS

usage. Therefore, they may equally be important in explaining how and why people endorse or engage in animal abuse on SNS platforms.

In addition to self and other evaluative processes, there are self-sanctioning mechanisms that function to inhibit or enable offending behavior. Bandura (1990, 1999) argued that, through a process of moral disengagement, people are able to re-conceptualize harmful behavior into justifiable acts with *moral* intentions. His socio-cognitive theory of moral disengagement posits that people employ strategies that re-align otherwise problematic (e.g., offending) behavior to within their moral standards. The aim of these strategies is to reduce cognitive dissonance. We see these strategies employed to enable cyberbullying (Chen et al., 2017) and attitudes supporting animal abuse (Vollum et al., 2004). More specifically, Vollum et al. (2004) found that people who held attitudes supportive of animal abuse were more likely to endorse moral disengagement strategies such as dehumanization (i.e., “An animal’s right to live free of suffering should be just as important as a person’s right to live free of suffering”) and euphemistic labelling (i.e., “Because pets are an individual’s property, the law should not intervene on owner’s actions and treatment of their pets”), as well as attitudes that morally justify harmful behavior towards animals (i.e., “Humans are a ‘higher order’ species, therefore it is our right to use animals to satisfy our needs and desires”).

Another psychological process that enables offending behavior is to attribute responsibility to others. This can be achieved by having an *external locus of control* (i.e., beliefs that the world is controlled by factors beyond our influence; Rotter, 1966). Locus of control has been linked to problematic internet usage, such as preferences for social interactions online (Ye & Lin, 2015). Coupled together (moral disengagement and locus of control), it could be argued that these mechanisms provide people with cognitive exonerations from the psychological consequences (i.e., cognitive dissonance) of positively endorsing and/or engaging in animal abuse posted online.

It must be acknowledged, however, that there are other situational variables that are important in understanding animal abuse perpetration displayed on SNS. For example, the valence (i.e., positive or negative) and intensity of an individual's emotional state and attitudes toward the welfare of animals can be influential. Research indicates that an individual's general attitudes toward the treatment of animals can influence their self-reported likelihood to participate in animal abuse (Henry, 2004). Moreover, varying affective states have differential effects on an individual's level of approach motivation (e.g., whether an individual is active or passive when interacting with emotive stimuli; Harmon-Jones, Gable, & Price, 2013). As such, research inclusive of sensitive materials, such as animal abuse, should take into account the impact this may have on a participant's affective state particularly when the individual has more pro-animal welfare attitudes.

The Current Study

The internet provides infinite possibility to interact with others both in prosocial and antisocial domains. As discussed above, these opportunities have psychological consequences that influence our behavior online. This study ties together two literatures (SNS engagement and animal abuse) to understand the psychological correlates of online animal abuse. The study design takes a comparative, cross-sectional approach to identify the psychological factors (i.e., narcissistic traits, animal-oriented callous traits, self-esteem, moral disengagement, and locus of control) that distinguish online interactions with animal abuse content from other content depicting interpersonal encounters. Further, this study differentiates by type of online interaction (i.e., "liking", "sharing", positive/negative comments, and recreating content). Given the literature reviewed, we hypothesized the following:

H₁: Animal abuse content will receive fewer positive endorsements (i.e., liking, sharing, positive comments, recreating content) and more negative comments than the comparison content (i.e., human-human encounters);

H₂: Positive endorsements (i.e., liking, sharing, positively commenting, and recreating content) of animal abuse content will be correlated with higher levels of narcissistic traits, animal-oriented callous traits, moral disengagement strategies, external locus of control, and lower levels of self-esteem.

Method

Participants

Given our study design, an *a-priori* power analysis indicated that a sample size of 183 was required to detect a medium effect size at .80 power. We recruited 206 participants, of which 21 were excluded for failed attention checks. Our final sample size consisted of 185 participants from University campuses based in the UK, consisting of 62 males (33.5%), 118 females (63.8%) and five who identified as 'other' (2.7%). The majority of the sample were aged 18-35 (91.4%) with a mean age of 25.42 ($SD = 7.57$, $range = 18-62$). Participants were asked to identify if they have ever owned a pet, either currently or in the past, with 163 participants (81.1%) identifying that they had. Inclusion criteria were for individuals to be fluent in English, at least 18 years old, and have at least one account for a Social Networking Site (SNS).

Measures

Dependent Variables

Interaction with content on SNS

To assess participants' likelihood to interact with and endorse animal abuse displayed on SNS, 12 separate images with descriptions were presented to them. Of the 12 images, nine related to animal abuse – of either a dog, cat or fish – and three images depicted interpersonal

encounters between people. The animal types were selected as they are common household companion animals, which have been shown to elicit differing levels of animal abuse proclivity (Merz-Perez, et al., 2001) and empathy (Signal, et al., 2018) when compared to other animal groups. The animal abuse content was curated from freely accessible online platforms (e.g., Snapchat, Facebook, and Instagram). The images were all stills taken from videos which had been posted to the various sites. The images depicted various animal abuse behaviors including kicking, throwing the animals into large bodies of water (i.e., attempted drowning), closed fist punching, and animal killing. Descriptions of the images were presented alongside to provide participants with clear and consistent information on what was being depicted. Similarly, the images of the human-human interactions were also stills from videos which had been uploaded to various sites and depicted acts which would constitute violence (e.g., hitting an individual). All images were selected based on the criteria that they depicted an actual incident of violence, had been uploaded to a widely used SNS, and only had one individual as the perpetrator.

All 12 images were presented to participants in randomized order. Each image was followed by a series of self-report items asking participants to indicate the likelihood they would interact with the content depicted in the image if the content appeared on one of their SNS accounts. They were asked to give ratings on five types of online interactions, and as such, resulting in five dependent variables (i.e., liking, make an approving comment, make a disapproving comment, sharing, and recreating). Their responses were given on a 5-point Likert-type scale, ranging from *extremely unlikely* to *extremely likely*. **Independent**

Variables

Narcissistic Personality Inventory-16 (NPI-16; Ames, et al., 2006)

The NPI-16 assessed the extent to which an individual's responses were indicative of narcissism. It is a 16-item inventory, with each item consisting of two statements relating to

either narcissistic (e.g., “I think I am a special person”) or non-narcissistic traits (e.g., “I am not better or worse than most people”). Participants were asked to indicate which statement was closest to their feelings. The NPI-16 is one of the most widely used measures of narcissism in research examining SNS activity (McCain & Campbell, 2018). This scale demonstrated good internal consistency ($\alpha = .80$).

Animal Attitude Scale (AAS; Herzog, et al., 2015)

The AAS is a 10-item scale to assess general attitudes towards animal welfare. Participants were asked to respond with their agreement to statements (e.g., “I sometimes get upset when I see wild animals in cages at zoos”) on a 5-point Likert-type scale, ranging from *strongly agree* to *strongly disagree*. The Cronbach’s alpha coefficient for this scale was low but still within acceptable parameters ($\alpha = .61$).

Emotional Toughness towards Animals Scale (Gupta & Beach, 2002)

This scale measured participants’ animal-oriented callousness, across responses to 10 statements (e.g., “If an animal dies, it doesn’t really matter to me”). Participants were asked to indicate their level of agreement on a 7-point Likert-type scale ranging from 0 (*strongly disagree*) to 6 (*strongly agree*). We found good internal reliability for this scale ($\alpha = .77$).

Rotter’s Locus of Control Scale (Rotters, 1966)

This scale is a 29-item force-choice scale, whereby participants select the statement in each pair they agree with. An example of an item pair is: “What happens to me is my own doing” or “Sometimes I feel that I don't have enough control over the direction my life is taking”. It is widely employed in research, with support for its reliability and validity (Beretvas, et al., 2008). With our data, we found good internal reliability ($\alpha = .72$).

Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965)

The RSES assesses an individual’s global self-esteem on 10-items (e.g., “I feel that I have a number of good qualities”) assessed on a 4-point Likert-type scale, ranging from

strongly agree to *strongly disagree*. The RSES is widely employed in research (Twenge & Campbell, 2001), with demonstrated reliability and validity across countries (Rusticus, et al., 2004) and with UK university students (Dhingra, 2013). We found good internal reliability with our data ($\alpha = .89$).

Positive and Negative Affect Schedule (PANAS; Watson, et al., 1988)

The PANAS is a 20-item self-report measure that assesses positive and negative affect, and can capture the affective response to stimuli. Participants were asked to indicate their current levels of emotions (e.g., excited) on a 5-point Likert-type scale, ranging from *very slightly or not at all* to *extremely*. The PANAS has been widely used and validated with UK samples (Crawford & Henry, 2004). We found the PANAS to demonstrate high reliability at the first administration (prior to completing the DV measure) for the positive ($\alpha = .87$) and negative ($\alpha = .90$) scale as well as the second administration (after completing the DV measure) on both the positive ($\alpha = .87$) and negative ($\alpha = .89$) scale.

Animal Related Moral Disengagement (Vollum, et al., 2004)

This measure of moral disengagement assesses four of Bandura's (1990, 1999) moral disengagement strategies (i.e., moral justification, euphemistic labelling, advantageous comparison, and dehumanization). Participants were asked to indicate their level of agreement with four statements (e.g., "Humans are a higher order species, therefore it is our right to use animals to satisfy our needs and desires.") on a 5-point Likert-type scale, ranging from *strongly agree* to *strongly disagree*. This scale demonstrated a low, yet acceptable, internal consistency ($\alpha = .66$).

Procedure

Prior to data collection, the research was first approved by the University's Ethics Committee. Participants were recruited either through a departmental system which awarded course credits for completion of the study, or through online recruitment within student

groups. The data collection was completed online by providing participants with a link to access the study. Participants were instructed to carefully read through the information sheet provided and to indicate their informed consent if they wished to proceed. Once consent had been indicated participants were prompted to provide demographic information, SNS usage, and to create a unique identifier should they wish to withdraw their anonymized data at a later point. Next, participants were asked to complete the independent variable measures, except for the PANAS. The measures were presented in randomized order to prevent order effects. Following this participants were presented with the DV measure (i.e., 12 images individually rated by participants on likelihood to “like”, make an approving comment, make a disapproving comment, “share”, and recreate the content depicted). The PANAS was administered pre and post completion of the measure to assess changes in affect as a result of exposure to abuse and violence related SNS stimuli. Finally, participants were provided with an online debrief, containing further details of the study, how to withdraw their data if they wished and contact details for support organizations if they had experienced any distress due to the study.

Results

Descriptive Statistics

All participants held at least one account for a SNS platform, Facebook being the most popular ($n = 163$; 88.1%) followed by Instagram ($n=150$; 81.1%). The average time spent on SNS per day was 130.88 minutes ($SD = 104.22$, $range = 0-600$). When asked about their frequency of posting content on SNS, participants responded as follows: never ($n= 12$; 6.5%), a few times a year ($n= 58$; 31.4%), once monthly ($n= 23$; 12.4%), twice monthly ($n= 23$; 12.4%), weekly ($n= 26$; 14.1%), a few times a week ($n= 22$; 11.9%), daily ($n= 15$; 8.1%) and more than once a day ($n= 6$; 3.2%). Participants were also asked how often they posted about themselves (i.e., self-related) with a span of results across never ($n= 20$; 10.8%),

sometimes ($n= 57$; 30.8%), about half the time ($n= 26$; 14.1%), most of the time ($n= 61$; 33.0%) and always ($n= 21$; 11.4%). Descriptive statistics for the six independent variables (narcissism, animal attitudes, callousness towards animals, locus of control, self-esteem, and moral disengagement) and the five dependent variables (likelihood ratings to interact with the human-animal abuse content only) included in the current study can be found in Table 1. As expected in a university sample, the mean scores for positive interactions (i.e., liking, sharing, making an approving comment, and recreating content) with animal abuse on SNS were relatively low; whereas, the mean score for negative engagement (i.e., making a disapproving comment) was above the mid-point.

Place Table 1 Here

Bivariate Analyses

First, we conducted paired sample t-tests to examine if participants' responses to SNS content varied as a function of subject matter (i.e., human-animal abuse or human-human negative encounters). As expected, we found that participants were more likely to like a post, share a post, make an approving comment, and recreate content when responding to human-human encounter posts, compared to human-animal abuse posts. Participants were more likely to indicate making a negative comment when responding to human-animal abuse content compared to human-human encounter posts. The results of these tests can be found in Table 2.

Place Table 2 Here

Next, we conducted bivariate analyses to see whether the socio-demographic variables (i.e., age, gender, companion animal ownership, SNS usage), independent, and dependent variables were correlated. As shown in Table 3, we found that age was significantly correlated with liking a post, recreating content, and posting a disapproving

comment in relation to animal abuse content. Previous companion animal ownership and average time spent on SNS platforms were both correlated with posting a disapproving comment. All other demographic and SNS usage variables were not significantly correlated with the dependent variables. We also found correlations between most independent variables (i.e., narcissism, animal attitudes, callousness, and moral disengagement) and recreating animal abuse content.

Place Table 3 Here

Finally, the PANAS was administered pre and post completion of the entire DV measure (i.e., likelihood to engage with SNS content depicting human-animal and human-human abuse) to examine if there was any positive or negative impact on participants' mood. The results of the repeated measures t test for positive affect indicated that completing this section resulted in a decrease in positive affect (pre-test, $M = 27.85$, $SD = 7.62$; post-test, $M = 24.46$, $SD = 9.00$; $t(184) = 4.39$, $p < .001$); whereas, the results from the repeated measures t test for negative affect indicated an increase in negative effect (pre-test, $M = 18.94$, $SD = 7.97$; post-test, $M = 23.05$, $SD = 7.17$; $t(184) = -5.70$, $p < .001$).

Multivariate Analyses

Given past research and the findings from the bivariate analyses above, we proposed a structural equation model (SEM) outlining which psychological factors were associated with the dependent variables, when controlling for the other variables. We also included time spent on SNS per day and companion animal ownership as covariates given their bivariate relationship with making a disapproving comment. The model employed a maximum likelihood estimator to test the variables as predictors of participants' endorsements of the interactions (i.e., liking, sharing, positive/negative comment, recreate) with posts depicting animal abuse content.

Commented [EA1]: Why not age on disapproving, recreating, and liking?
Gender did not correlate with any DV variables.

The data adequately fit the hypothesized model once appropriate modifications were adjusted for, such as allowing for the covariance between residuals of certain dependent variables. The overall model fit indices ($\chi^2 = 124.74$, $df = 51$, $p < .001$) suggested rejecting the model. However, due to the sample size we examined the incremental and absolute model fit indices of Comparative Fit Index (CFI) and Root Mean Square Error of Approximation (RMSEA). Guidelines would suggest that CFI values above 0.90 are adequate (Kline, 2015) and RMSEA values in the range of .08 to .10 indicate mediocre fit (Browne & Cudeck, 1993). Therefore, overall fit for our model was within the adequate range (CFI = .92; RMSEA = .08).

Based on R^2 values, the independent variables in the model accounted for 20% of the variance of the endorsement to recreate animal abuse for display on SNS. Of the dependent variables in the model, recreating content had the most variance explained by the independent variables. As Figure 1 illustrates, expected results were partially supported where decreased levels of positive attitudes towards animal welfare and higher levels of animal-oriented callousness were associated with increased likelihood to endorse the recreating of animal abuse to post online. Animal-oriented callousness was the most influential variable in the model where higher levels of callousness were also associated with making an approving comment and liking animal abuse content displayed on SNS. Narcissism was not found to be a significant influence on any of the dependent variables except for the likelihood to share animal abuse content on SNS.

Place Figure 1 Here

Discussion

Alongside rising engagement with online platforms come opportunities for antisocial behavior to proliferate. Engagement on SNS platforms can come in various forms with

varying levels of culpability for the consequences of posted material. This study examined the propensity to interact with animal abuse content online, in relation to human-human content, as well as the psychological factors most associated to this propensity. The aim of the study was to also see whether there were differential associations between psychological factors and varying types of online engagement. As expected, we found that participants indicated they were more likely to “like”, “share”, write an approving comment, and recreate the posted content when responding to the human-human posts compared to the animal abuse posts. These findings, although unsurprising, validate the overall anti-abuse attitudes held in the general public. The findings also evidence how individuals engage with animal abuse content differently from human-human content. Images of human-animal and human-human abuse, on average, elicit negative emotions, but in addition to evidencing an affective response, our study aimed to examine the psychological factors that over-ride these affective responses to still engage with the animal abuse content.

Participants who indicated they would “like” an animal abuse post reported higher levels of animal-oriented callous traits over and above other psychological factors. What is interesting is that narcissism, negative animal welfare attitudes, and moral disengagement were also correlated with “liking” a post in the bivariate analyses, however, unlike animal-oriented callous traits, they were no longer significant in the path model. This factor alone suggests that this type of endorsement is a form of dismissiveness of the harmful consequences of animal abuse. Participants who indicated they would write an approving comment and recreate the animal abuse content also reported higher levels of animal-oriented callous traits, in addition to negative attitudes towards animals. There are key take-home messages when considering these findings together. First, it appears that the milder form of endorsement is facilitated by callousness towards animals alone, however, in order for these beliefs to escalate towards more active participation in the support and recurrence of animal

abuse, there must also be negative attitudes towards the welfare of animals. This could be explained by a lack of knowledge about animal needs, but the presence of callous traits suggests a more top-down intent to participate. These findings are also indicative of a more global deficit in animal-oriented *theory of mind*. That is, an individual's ability to attribute mental capacity (Hills, 1995) could be the process through which animal abuse is facilitated. There might be an inability to *feel* (or, at minimum, infer feeling) what an animal is feeling. Further research could explore whether theory of mind captures this dual process seen in our data.

We found that the only factor associated to “sharing” animal abuse content was narcissism. This might be indicative of a performative display of dominance, as theorized previously. If this is the primary motivation for “sharing” animal abuse content, then that would explain why animal-oriented callous traits were not as important. Instead, the drivers for this type of behavior are more self-referential than about the animal itself.

Finally, writing a disapproving comment on an animal abuse post was associated with higher levels of self-esteem and more positive attitudes towards animal welfare. It appears that individuals who publicly disparage the content have the confidence to act on their pro-animal welfare attitudes. This fits in neatly with the wider bystander intervention literature whereby behavioral outcomes are facilitated by a strong belief in the social cause and a perceived social standing that can withstand public scrutiny (Bennett, et al., 2014; Fischer et al., 2011).

It is also worth noting that moral disengagement and locus of control were not significant in the path model, and as such, explained very little of the model's variance. These findings are inconsistent with previous studies which indicated that animal abuse proclivity was linked to the related mechanisms (Alleyne & Parfitt, 2018; Vollum et al., 2004). Perhaps this finding is indicative of different processes that facilitate online participation in animal

abuse and in-person animal abuse. Only further research comparing the two can explicate whether these differences are there.

Limitations

Despite providing novel insights into the relationships between online animal abuse and key psychological variables, this study is not without limitations. The reliance on self-reported measures could mean that responses are susceptible to social desirability bias. If this were the case, participants may have altered their responses to “save face” given the sensitive nature of the topic (King & Bruner, 2000). The impact of social desirability bias, however, was minimized due to the online, anonymized format of data collection. Nonetheless, it must be acknowledged that social desirability may have influenced the results and further studies would benefit from a measure of impression management. It is also worth noting that the correlational design of the study does not allow for ‘cause and effect’ conclusions to be drawn. This means that while we can acknowledge that there were significant relationships found, we cannot conclude, for example, that those with callous traits will recreate animal abuse to post online. However, as this is the first study to examine animal abuse on SNS it provides a basis to understand this emerging phenomenon. Although our research study focused on a more global affective response to the combined human-animal and human-human abuse images, we acknowledge that our findings cannot definitively establish a relationship between negative affect and human-animal abuse. Parsing out the relationship between affect and species-type would be an interesting direction for future research because presumably the differences we found in how participants responded to human-animal versus human-human abuse content across all types of SNS interactions (i.e., “liking”, recreating content, etc.) might also be facilitated by differential affective responses. Finally, it should be acknowledged that the gender balance was slightly skewed towards females in our sample (63.8%). Further research would also benefit from exploring the role of gender in this

behavior (with adequate sample proportions) to see if what we see in the online domain mirrors what the literature has shown for in-person animal abuse proclivity (e.g., Alleyne, et al., 2015).

Conclusions

Despite the above limitations, this study is the first to explore the role of SNS platforms in the facilitation and perpetuation of animal abuse. There is a clear indication that interactions with animal abuse on SNS platforms are different to human related content and that animal-oriented callousness is a significant factor in endorsing animal abuse displayed online. While other psychological variables were significantly related to online endorsements (e.g., animal welfare attitudes, narcissism), it appears callous traits drive the effect for the more active forms of engagement (e.g., recreating animal abuse content). This finding is in line with in-person animal abuse literature (e.g., Alleyne & Parfitt, 2018; Gupta, 2008). There are, however, gaps in the research requiring further attention. For example, the correlational nature of this study leaves it unclear as to how animal-oriented callous traits develop and the more proximal function these traits have in the facilitation of online endorsements and recreation of animal abuse content. With the growing use of SNS platforms, there is a paralleled need for research investigating how, psychologically speaking, offending behavior is facilitated online, and the methods to reduce these types of behaviors. Our study, at least, does give some insight into the factors that facilitate potential bystander intervention in the form of making disapproving comments.

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Table 1.

Descriptive Statistics for Independent and Dependent Variables

Measure	M	SD	Range
1. Narcissism	.27	.22	.00-.94
2. Animal Attitudes	37.98	4.94	24-48
3. Callousness	20.19	9.07	10-62
4. Locus of Control	13.02	4.06	3-23
5. Self-esteem	18.95	5.46	4-30
6. Moral Disengagement	8.83	3.10	4-16
7. Liking a Post	3.24	0.80	3-8
8. Sharing a Post	3.46	1.50	3-15
9. Approving Comment	3.21	0.83	3-10
10. Disapproving Comment	9.21	4.33	3-15
11. Recreate Content	3.21	0.83	3-9

Table 2.

Descriptive Statistics and t-test Results for Human-Human and Human-Animal Abuse Content on SNS.

Outcome	Human-Human		Human-Animal		95% CL		<i>t</i>	<i>df</i>
	M	SD	M	SD	LL	UL		
Liking a Post	6.54	3.20	3.24	0.80	2.85	3.75	14.44*	184
Sharing a Post	4.46	2.31	3.46	1.50	0.67	1.33	6.03*	184
Approving Comment	4.44	2.24	3.21	0.83	0.16	0.92	7.91*	184
Disapproving Comment	5.17	2.54	9.21	4.33	-4.61	-3.48	-14.07*	184
Recreate Content	4.62	2.42	3.21	0.83	1.09	1.74	8.67*	184

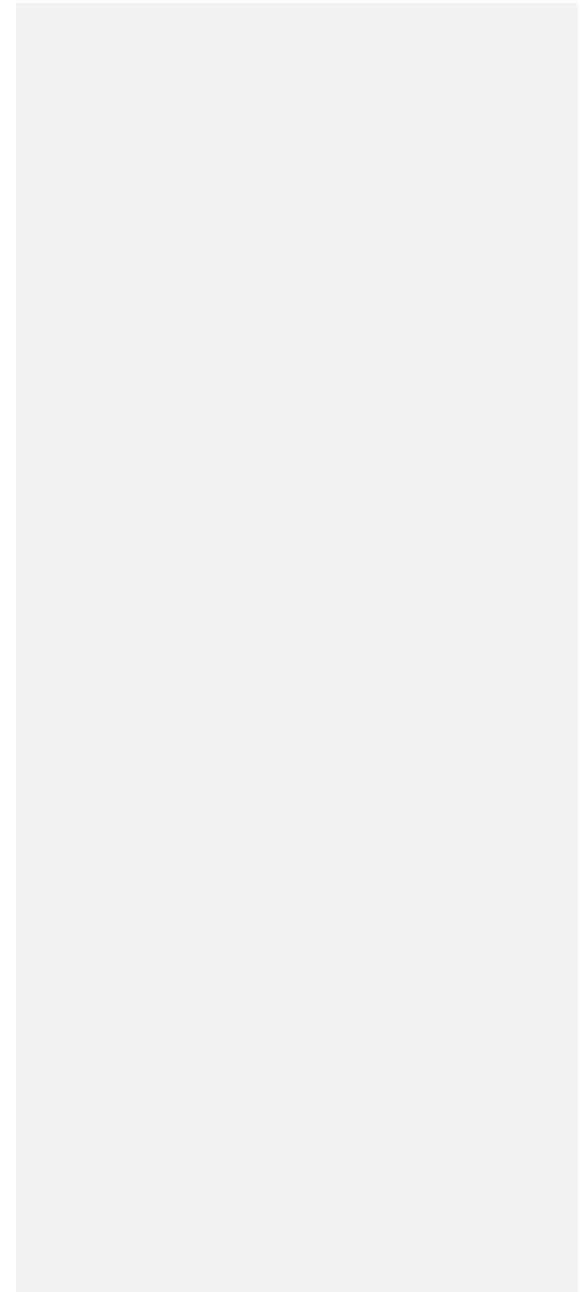
* $p < .01$.

Table 3.

Correlations between Demographic Variables, Dependent Variables (Animal Abuse Content Only) and Independent Variables

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Age	-															
2. Gender	-.05	-														
3. Companion Animal Ownership	-.16*	.04	-													
4. Time per day on SNS	-.32**	.08	.01	-												
5. Frequency of Posts	.02	.10	-.04	.32**	-											
6. Posts About Self	-.22**	.09	.19**	.18*	.25**	-										
7. Liking a Post	-.14*	-.06	.12	-.06	.05	-.07	-									
8. Sharing a Post	.06	-.003	.01	.04	.13	.01	.57**	-								
9. Approving Comment	-.03	-.07	.09	-.07	.04	-.03	.75**	.43**	-							
10. Disapproving Comment	.14*	-.01	-.21**	.18*	.09	-.12	-.07	.13	-.06	-						
11. Recreate Content	-.14*	-.08	.06	-.05	.07	-.04	.76**	.43**	.92**	-.07	-					
12. Narcissism	-.02	-.10	.12	.13	.10	.04	.26**	.23**	.23**	-.04	.21**	-				
13. Animal Attitude Scale	.10	.18*	-.06	.06	.09	.01	-.28**	-.04	-.32**	.20**	-.32**	-.22**	-			
14. Callousness	-.15*	-.03	.12	.01	-.10	-.08	.36**	.12	.41**	-.19**	.44**	-.34**	-.49**	-		
15. Locus of Control	-.18*	.25**	.03	.11	-.12	.08	-.02	-.07	-.11	-.02	-.09	-.19**	.15*	.04	-	
16. Self-esteem	.26**	-.10	.11	-.22**	-.02	.03	-.05	-.01	-.08	.12	-.10	.20**	.05	-.15*	-.26**	-
17. Moral Disengagement	-.12	-.15*	.04	.07	-.04	.12	.16*	-.01	.22**	-.07	.23**	-.26**	-.26**	.45**	-.07	-.04

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



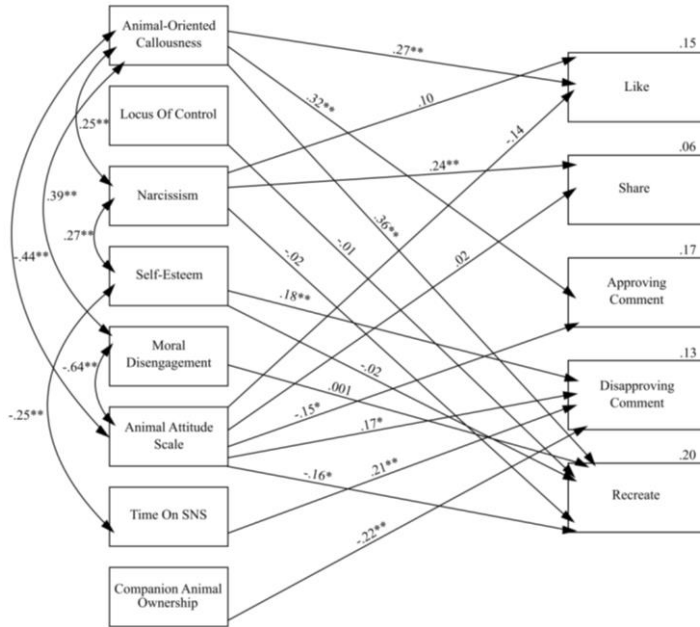


Figure 1. Standardized Path analysis SEM model of predictors' direct effects on interactions with animal abuse displayed on SNS.

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