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Everyday sadism, the Dark Triad, personality and disgust sensitivity

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Journal the paper is written for: *Personality and Individual Differences*

FRP Proposal

Project title: Overcrowding and its effects on subclinical/everyday sadism

Overview of area of interest:

Overcrowding

Research on overcrowding in forensic populations has been linked to violence and negative psychological effects for the patients. According to a review by Farrington and Nuttall (1980), overcrowded prisons are less effective as they have higher recidivism rates. A meta-analysis of the relationship between inmate misconduct and overcrowding found that crowding seems to have a much stronger effect on younger inmate populations (18-25) in terms of inmate violence, but not in those above 25 years old (Franklin, Franklin & Pratt, 2006). Nacci, Teitelbaum and Prather (1977) found that high levels of overcrowding were significantly associated with assault rates in 37 US federal prisons. Nijman and Rector (1999) found a moderate correlation between the number of aggressive incidents per patient and levels of ward crowding on two psychiatric wards and stated that it may be due to a lack of 'psychological space', such as a lack of privacy, rather than physical space. The researchers highlight an important aspect of overcrowding: lack of privacy. Altman's privacy regulation model (1975) indicates that an essential part of feeling overcrowded is personal space invasion. If our level of privacy is more than what we desire, we feel lonely and isolated but if our level of privacy is less than what we desire, we feel overcrowded. In prisons or psychiatric units where individuals have to share a unit designed for one between two or three of them, they are likely to feel like their personal space is being invaded and therefore overcrowded. Additionally, research has shown that invasion of space by strangers is felt to be

more stressful than invasion of space by friends or acquaintances (Aiello, 1987). It is highly likely that prisoners or patients are housed with strangers, adding to the personal space invasion. Finally, not only does overcrowding affect prisons in terms of violence, but it is also linked to stress, psychological impairment, and higher mortality rates for the inmate or patient (Paulus, McCain & Cox, 1978). Other studies indicate that overcrowding increases negative affect among prisoners, increases their blood pressure and leads to more complaints of illness (Haney, 2006).

In non-forensic populations, overcrowding leads to significant decreases in cognitive functioning. One study asked participants to perform some common everyday tasks at a train station, such as finding the toilets and the train station's ticket office. However, levels of crowding differed and some participants performed these tasks mid-morning (low crowding) while others performed them during rush hour (high crowding). Results indicated that participants in the high crowding condition were less likely to complete all the tasks, and were more likely to indicate high anxiety and poor mood (Saegart, Mackintosh & West, 1975). Another study investigated the academic performance of students living in overcrowded accommodation and found that those who experienced high levels of crowding reported higher stress levels and attained lower grades. Interestingly, when those students were moved to less crowded conditions, their results improved (Karlin, Epstein & Aiello, 1978). Additionally, female students seemed to be more adversely affected than males (Karlin et al., 1978). Freedman, Levy, Buchanan and Price (1972) studied the effects of overcrowding and mock jury trials and found that males gave more severe sentences in the smaller, overcrowded room than in a large uncrowded room but the opposite was found for females. Finally, in another study, participants were given a

shopping list with several items and were asked to note down which brand and size of each item they would buy so that it would cost them the least. Participants in the overcrowded condition attempted to find fewer items, were less efficient, reported dissatisfaction with the supermarket and felt less comfortable (Langer & Saegert, 1977)

Aside from negative effects on cognitive functioning, overcrowding also leads to physiological changes, such as increased palm sweating and an increase in electrodermal activity indicative of autonomic arousal (Aiello, Epstein & Karlin, 1975). Individuals subjected to overcrowding also report feeling less comfortable and generally less positive towards other people (Sundstrom, 1975). A more recent study by Derlet and Richards (2000) considered overcrowding in A&E departments. Results indicated that in addition to detrimental effects on the patient, overcrowding and an increased waiting time caused violence such as fights as well as threats and bodily harm to the nurses and physicians. Evans and Wener (2007) measured crowding and personal space invasion on the train during rush hour, and found that passengers who had someone sitting directly next to them felt more stressed, in line with Altman's (1975) privacy model. Even the thought of being overcrowded can cause individuals to become more aggressive, especially for men (Baum & Koman, 1976).

One important factor to consider in research on overcrowding in forensic and non-forensic populations is that overcrowding for forensic settings is often "long-term, intense and inescapable crowding" (Paulus, McCain & Cox, 1978, p. 107). Crowding research in non-forensic populations is short-term and participants can withdraw at any point.

The dark triad & sadism

The Dark Triad comprises three disagreeable traits: psychopathy, Machiavellianism and narcissism. Lately, a significant amount of research has suggested the addition of sadism to the triad, making it the Dark Tetrad (Buckels, Jones & Paulhus, 2013; Chabrol, van Leeuwen, Rodgers & Séjourné, 2009). Paulhus (2014) has defined each of these four concepts: narcissists have a grandiose sense of self and constantly crave attention; Machiavellians are masters at manipulating; sadists hurt others verbally or physically for their pleasure and enjoyment; and psychopaths are callous and cause serious harm. While these four 'personalities' may seem very distinct from each other, they are typically correlated with each other (Chabrol et al., 2009; Jacobwitz & Egan, 2006). Not surprisingly, individuals who score high on the Dark Triad have low empathy (Wolfson, 1981). Additionally, males tend to score higher on the Dark Triad than females, regardless of the types of psychometrics or tests used (Furnam, Richards & Paulhus, 2013). Parent and child report data found that the Dark Triad traits were positively correlated to delinquency and aggression. Additionally, low levels of agreeableness, conscientiousness and openness on the Big Five were also associated with higher scores on the Dark Triad (Muris, Meesters & Timmermans, 2013). Interestingly, the 'personalities' described by the Dark Triad can be both clinical and subclinical. While psychopathy and narcissism are both classified as disorders in the DSM, research has also focused on 'successful psychopaths': the notion that psychopathic traits may be useful within certain professions such as lawyers, business men and politicians (Mullins-Sweatt, Glover, Derefinko, Miller & Widiger, 2010).

While a lot of research has been done on the Dark Triad, research on non-sexual sadism is modest. Buckels and colleagues (2013) describe subclinical

sadism as everyday sadism, as many people seem to enjoy certain levels of cruelty in our everyday life. Most people engage in a little bit of everyday sadism: we enjoy watching violence on TV and in olden days' people would gather in large crowds to watch hangings, burnings and gladiator fights (Baumeister & Campbell, 1999). A study of 615 high-school students found that those who scored high on all aspects of the Dark Tetrad had the highest levels of antisocial behaviour and cannabis use (Chabrol, Melioli, Van Leeuwen, Rodgers & Goutaudier, 2015). Paulhus (2014) suggests that correlations between all traits in the Dark Tetrad are always positive and range from .20 to .60. Additionally, low scores on the Honesty-Humility factor from the HEXACO links together all of the aspects of the Dark Tetrad (Paulhus, 2014). It is very difficult to study the Dark Tetrad in practice due to ethical problems with eliciting aggressive and malevolent behaviour (Paulhus, 2014). This is why this study will replicate Buckels, Jones and Paulhus' (2013) study involving a faux bug killing paradigm.

Importance of the topic: The majority of the research on overcrowding is from the 1970s and 1980s, so this study will provide more up to date evidence of overcrowding and its effects in a non-forensic population. Additionally, as far as I'm aware, no other study has looked at the effects of overcrowding on any aspect of the Dark Tetrad in any population. The results of this study may open up a new area for research.

Research question: Does overcrowding effect everyday sadism?

Hypotheses:

1. Participants in the overcrowding condition will be more likely to kill the bugs

themselves than those in the uncrowded condition.

2. Participants who score high on sadism in the online questionnaires will be more likely to choose killing bugs than the other three options.

Methodology:

a) Sample: The sample required was calculated using GPower: with an effect size of 0.5, a p value of 0.05 and a sought power of 0.8, the study requires 102 participants in total, 51 in each condition. The study will hope to gather an equal split of males and females from the University of Nottingham and will try to gather as many different nationalities as possible. This sample will be gathered by circulating an email with the online link to the questionnaire to as many students as possible.

b) Procedure: The first part of the study will be an online questionnaire. Participants will be asked to complete the HEXACO (Ashton & Lee, 2009), to obtain an overall summary of the personality of the individual, and also because The Dark Triad loads on to the Honesty-Humility factor on the HEXACO, which measures pro-social and anti-social behaviour (Lee & Ashton, 2005), so one is not dependent on the Agreeableness dimension alone. This will be followed by completing the Short Sadistic Impulse Scale (O'Meara, Davies & Hammond (SSIS), 2011), the Short Dark Triad Scale (Jones & Paulhus (SD3), 2014) and the Disgust Sensitivity Scale-Revised (Olatunji et al. (DSS-R), 2007).

Participants will have been randomly assigned to either the overcrowding or low crowding condition prior to completing the survey. Once they have completed the survey they will be asked to submit their email address. The participant will be emailed timeslots specifically allocated to each condition.

Participants in the low crowding condition will immediately be seen to whereas participants in the high crowding condition will be made to wait in a very small room.

The practical part of this study is based on the faux bug-killing paradigm by Martens, Kosloff, Greenberg, Landau and Schmader (2007) and Study 1 of Buckels, Jones and Paulhus' (2013) "Behavioural confirmation of everyday sadism" paper published in *Psychological Science*. Participants will be told that the study is researching "personality and tolerance for challenging jobs" (Buckels, Jones & Paulhus, 2013, p. 2). Participants will be asked to perform one of four tasks that mirror real life jobs: killing bugs themselves (exterminator), assisting the researcher to kill the bugs (an exterminators assistant), cleaning dirty toilets (sanitation worker) and sticking their hands in ice-cold water (a worker in cold environments). If the participant chooses the killing the bugs themselves, they will be shown a bug killing machine that is actually a modified blender, which will make participants believe they are actually killing bugs but will not kill them. The bugs used in this will be three wood lice named "Wallace", "Grommit" and "Shaun", which will be placed in three cups labelled with their names next to the machine. The researcher will be sat on the other side of the room checking emails. The same procedure will be used for those who choose to be the exterminators assistant. The researcher will also keep track of how many bugs the participants choose to kill. Those who choose to clean toilets will be shown a toilet plunger and cleaning supplies, and those who choose the ice water will be told that the ice bath is in the other room. However, the participants choosing the toilet cleaning and ice water will then be told that they do not need to complete the task. All participants will have to complete emotion ratings based on the Positive and Negative Affect

Scale (Watson, Clark & Tellegen (PANAS), 1988) after their task choices are complete, as well as two manipulation checks to test whether: 1) they felt overcrowded or not; and 2) whether they believed the blender really did grind up the bugs, and finally if they were afraid of bugs. Participants will then be debriefed.

c) Ethical considerations:

a. **Consent & not using vulnerable groups:** This study will use students from the University of Nottingham, meaning that participants should be at least 18 and can therefore give informed consent.

b. **Confidentiality & right to withdraw:** All participants will need to complete online questionnaires prior to the practical aspect of the study. They will be told that all of their information is anonymous and up until they click submit in the online questionnaires they can withdraw from the study. However, once they click submit we will be unable to withdraw their information as the surveys are anonymous. In the practical part of the study participants will again be told that all of the information will be confidential and that they have the right to withdraw at any point. Participants will be told that their information will be kept for up to 7 years, but that it will remain in an anonymous format.

c. **Deception & debriefing:** The participants will be deceived during the study. They will be told that the study is looking at personality and tolerance for challenging jobs. This is necessary because if participants were told that the study was looking at

overcrowding and sadism, the manipulation will most likely not work. This is also done to avoid experimenter bias, so that participants are not giving answers they think you want to hear. At the end of the study participants will be fully debriefed and told that the study was actually looking at overcrowding and its effects on everyday sadism.

d. **Harming animals:** While participants may think that they are actually killing the wood lice, the modified blender will ensure that no actual bugs will be ground up by stopping them from ever reaching the blades.

d) Expected outcome: Based on Buckels, Jones and Paulhus' (2013) original study, I would expect to find that those who score high on sadism in the online questionnaire will be more likely to choose bug killing. Additionally, I would expect individuals in the overcrowding condition to choose bug killing rather than the other options.

e) Staffing issues/equipment/timetabling: This study will require some equipment: at least 2 modified blenders, a plunger and other toilet cleaning supplies and a bucket of iced water. Additionally, the study may require the use of confederates if participants do not show up to their allocated time slot. This is done so that levels of crowding remain the same throughout the study. Please see the attached timetable for a schedule.

Design and analytical techniques: In order to compare data between the overcrowded and uncrowded conditions, a t-test comparing independent means would be the most appropriate. Additionally, it would be interesting to see the distribution of the Dark Tetrad personalities across the sample. A regression of

levels of sadism and post task pleasure is also important. Since there is relatively little research on the link between sadism and the Dark Triad, it would be interesting to see what results a correlation between scores on the SSIS and SD3 would produce.

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Dear Myrthe

Ethics Reference No: M16022016 SoM **– please always quote**
Study Title: Overcrowding and its effects on behavioural sadism
Chief Investigator/Supervisor: Dr Vince Egan, Associate Professor, CFFP, Psychiatry and Applied Psychology, School of Medicine
Lead Investigators/student: Anne Myrthe Meere, MSc Forensic and Criminological Psychology Student, School of Medicine
Type of Study: MSc project, Online Survey
Proposed Start Date: **Proposed End Date:**
No of Subjects: 102 **Age: 18+yrs**

Thank you for submitting this interesting and straight forward application which was reviewed on 16th February 2016 and the following documents were received:

Does overcrowding increase sadism:

- FMHS Research Ethics Application form, Date: 19/01/2016
- FRP Proposal
- Invite E-mail dated 19/01/2016
- Participant Information Sheet, 19.01.2016
- Consent Form, 19.01.2016
- Debrief Sheet, 19.01.2016
- PANAS emotion rating scale 25.01.2016

These have been reviewed and are satisfactory and the study is approved.

There was one minor change to the Information sheet and that it is to update the contact details for this committee to: ….Administrator, Faculty of Medicine & Health Sciences Research Ethics Committee, c/o School of Medicine Education Centre, B Floor, QMC Campus, Nottingham University Hospitals, NG7 2UH (please quote FMHS ref M16022016).

Approval is given according to the following conditions:

1. You must follow the protocol agreed and inform the Committee of any changes using a notification of amendment form (please request a form).

2. You must notify the Chair of any serious or unexpected event.

3. This study is approved for the period of active recruitment requested. The Committee also provides a further 5 year approval for any necessary work to be performed on the study which may arise in the process of publication and peer review.

4. An End of Project Progress Report is completed and returned when the study has finished (Please request a form).

Yours sincerely

pp Lamagdani

Professor Ravi Mahajan
Chair, Faculty of Medicine & Health Sciences Research Ethics Committee

Abstract

Research into dark personalities has consistently advocated for the addition of sadism due to its close relationship with other dark traits (Book et al., 2016). In the present study, we explored the personality factors underlying non-sexual 'everyday' sadism (Buckels, Jones & Paulhus, 2013). In line with previous research, it was predicted sadism would be negative correlated with the honesty-humility, agreeableness and emotionality dimensions of the HEXACO, and positively correlated with psychopathy and Machiavellianism from the Dark Triad. As an added dimension, the study also investigated disgust sensitivity's relationship to sadism. A total of 235 participants (66.4% female, 31.1% male; mean age 31.35 years (SD = 13.97 years)) completed an online survey comprising a series of psychometric measures. Results indicated that extraversion, psychopathy, Machiavellianism and animal reminder disgust were significant predictors of sadism scores, explaining 48% of sadism's variance ($F(12,218)=16.92$, $p<.001$). Future studies may want to include a measure of disgust sensitivity to investigate its relationship with sadism, as well as continuing to include behavioral measures of sadism alongside self-report data.

Keywords: sadism, Dark Triad, Dark Tetrad, HEXACO, personality, disgust sensitivity

Everyday sadism, the Dark Triad, personality and disgust sensitivity

1. Introduction

Sadism is defined as deriving pleasure from harming others (Baumeister & Campbell, 1999). There is much research concerning sexual sadism and sadism in sex offenders, and a diagnosis of sadism for sex offenders is often considered a strong indicator for violent sexual and non-sexual reoffending (Eher et al., 2015). Sexual sadism is also explored at subclinical levels, for instance in a preference for BDSM (bondage-discipline, domination-submission, sadomasochism) a sexual proclivity where individuals gain pleasure from their own or anothers' pain or image of this (Hébert & Weaver, 2014).

There is evidence to suggest that not all sadism is sexual. For example, in a sample of violent offenders, psychopaths were more sadistic than non-psychopaths, but violent and sexually violent psychopaths did not significantly differ in levels of sadistic traits (Holt, Meloy & Strack, 1999). While most research has focused on sexual sadism, non-sexual sadism is common in society. Non-sexual, subclinical sadism has been labelled 'everyday sadism' (Buckels, Jones & Paulhus, 2013), and reflects cruelty in everyday life, for example watching violence on TV and in films, or in the pleasure of viewing sports combat involving humans and animals (Baumeister & Campbell, 1999). This has been demonstrated for violent video game players, where individuals were asked to self-report the amount of time spent playing violent video games and sadism scores; higher levels of everyday sadism were correlated with hours spent playing violent video games (Greitemeyer, 2015).

1.1. The Dark Triad

A common method of assessing disagreeable traits is to assess 'the Dark Triad': psychopathy, Machiavellianism and narcissism. Paulhus (2014) has

defined each of these concepts: narcissists have a grandiose sense of self and constantly crave attention; Machiavellians are masters at manipulating; and psychopaths are callous and can cause serious harm. Males tend to score higher on Dark Triad traits than females, regardless of the types of psychometrics or tests used (Furnham, Richards & Paulhus, 2013). Whilst the traits are significantly correlated (Egan, Chan & Shorter, 2014) they are still discrete enough to merit individual examination (O'Boyle, Forsyth, Banks & McDaniel, 2012).

This dark side of personality often has significant antisocial behavioural consequences. Parent and child report data found that the Dark Triad traits were positively correlated to delinquency and aggression for children (Muris, Meesters & Timmermans, 2013). The Dark Triad has been found to be predictive of aggressive behaviour (Barlett, 2016) and strongly correlated with levels of bullying (Baughman, Dearing, Giammarco & Vernon, 2012), counterproductive work behaviours (O'Boyle et al., 2012) as well as risky and sensation-seeking behaviours (Crysel, Crosier & Webster, 2013).

1.2 The Dark Triad and everyday sadism

It has been suggested sadism be added to the Dark Triad: the Dark Tetrad (Buckels et al., 2013; Chabrol, van Leeuwen, Rodgers & Séjourné, 2009). Paulhus (2014) suggests that as with the Dark Triad, correlations between all traits in the Dark Tetrad are always positive, and range from .20 to .60. The 'personalities' described by the Dark Tetrad can be both clinical and subclinical. While psychopathy and narcissism are both classified as disorders in the DSM, research has also focused on constructs such as the 'successful psychopath': the notion that psychopathic traits may be useful within certain professions such as

lawyers, businessmen and politicians (Mullins-Sweatt, Glover, Derefinko, Miller & Widiger, 2010). This is similarly the case with sadism: sadistic personality disorder was previously classified as a mental disorder and sexual sadism remains a disorder in the DSM-V (American Psychiatric Association, 2013). However, just like psychopathy, Machiavellianism and narcissism, sadism exists in day-to-day life at a subclinical level. For example, an important aspect of BDSM is sexual sadism yet it is a sexual interest that remains attractive to some individuals (Richters, de Visser, Rissel, Grulich & Smith, 2008).

1.3 Behavioural measures of Dark Tetrad

Paulhus and colleagues (2013) suggest that while Dark Triad aggression tends to be context dependent, sadists want to aggress so much that they are willing to expend time and resources to do this, regardless of whether there are any benefits for them. This has been demonstrated using a white-noise paradigm, in which the participants' rival in a game consistently abstained from aggression. While all participants scoring high on the Dark Tetrad traits were willing to aggress against their innocent opponent if the aggression was easy, only sadists increased the intensity of their aggression once they realized that their opponent wold not fight back and were willing to spend time and energy on hurting their opponent (Paulhus et al., 2013). A similar behavioural study of sadism used a faux-bug-killing paradigm and found that higher sadism scores associated with choosing to kill insects, and that those individuals reported more post-task pleasure after having done so (Paulhus et al., 2013). A study of violent video games found that exposure to these kinds of games was significantly associated with Machiavellianism and psychopathy, but that sadism was the best predictor (Greitemeyer, 2015). The behavioural effects of Dark Tetrad

personalities are found across the lifespan. For instance, a study of 615 high-school students found that those who scored high on all aspects of the Dark Tetrad had the highest levels of antisocial behaviour and cannabis use (Chabrol, Melioli, Van Leeuwen, Rodgers & Goutaudier, 2015). Researchers have also examined the Dark Tetrad in a study of 'trolling' (a way of bullying on the internet that is destructive and for no purpose). Sadism, psychopathy and Machiavellianism were significantly associated with individuals who reported trolling as their most enjoyable activity on the internet (Buckels, Trapnell & Paulhus, 2014).

1.4 The Dark Tetrad and personality

There are significant associations between personality and the Dark Tetrad. The HEXACO personality model is considered to outperform any other personality measure in regards to capturing the core personalities of the Dark Tetrad (Book, Visser & Volk, 2015). HEXACO has domains of honesty-humility, emotionality, extraversion, agreeableness, conscientiousness and openness to experience (Ashton & Lee, 2009). At the centre of the Dark Tetrad personalities lays the antithesis of the honesty-humility dimension of the HEXACO, which focuses on sincerity, fairness, greed avoidance and modesty where high scores are associated with embodiment of those characteristics (Ashton, Lee & de Vries, 2014). Honesty-humility has been consistently negatively associated with Machiavellianism, narcissism and psychopathy (Lee & Ashton, 2005) and more recently sadism (Book et al., 2016), meaning that the individuals with high levels of the Dark Tetrad traits are more likely to manipulate and take advantage of others, display their wealth and consider themselves as superior to others (Ashton et al., 2014). This illustrates that the main feature underlying these

these dark personalities is their willingness to exploit others. Narcissism has been significantly correlated with high levels of extraversion and low levels of agreeableness, which fits with the stereotypical view of narcissists as individuals who crave attention and have a strong need for self-enhancement (Campbell & Campbell, 2009). However, narcissists can simply be high on their own self regard and not antisocial (Egan et al., 2014). Machiavellianism and psychopathy are associated with low agreeableness, which is in line with their shared manipulative and self-serving nature (Paulhus et al., 2013). Psychopathy is also associated with low conscientiousness and low emotionality, underpinning the more specifically callous and antisocial nature of psychopaths. Finally, one of the largest predictors of sadism was low emotionality, which is demonstrated in a sadists ability to not worry about the suffering or pain of others (Baumeister & Campbell, 1999), followed by low agreeableness. Similar results have been found in individuals with sadistic personality disorder (Hagger-Johnson & Egan, 2010).

1.5 Disgust sensitivity

Disgust is an emotion that originated as a response to bad tastes or rejecting foods as an evolutionary mechanism to protect oneself from disease (Rozin, Haidt & McCauley, 1999). Previous studies have investigated the relationship between disgust sensitivity and moral hypervigilance. Research has shown that offenses of an immoral nature as well as offenders produce certain levels of disgust (Jones & Fitness, 2008). Individuals who endorse this, try to distance themselves as far away from these individuals and offences as possible. In this context, disgust is more likely an emotion that makes an individual feel superior to others and view them with repulsion and disapproval. There is also

evidence that indicates individuals with higher disgust sensitivity have been found to be less physically and verbally aggressive (Pond, DeWall, Lambert, Deckman, Bonser & Fincham, 2012). To date, there has only been one study of sadism which has included a measure of disgust sensitivity. In Paulhus and colleagues (2013) study using a faux-bug-killing paradigm, results indicated that sadism was not related to disgust sensitivity, and argue that one can rule out the idea that sadists have a higher tolerance for disgusting objects and situations.

1.6 The present study

In the present study, we explored the personality factors underlying non-sexual sadism, seeking to rationalise the highly correlated diverse predictors of the construct. Based on previous research, we predicted that sadism would have a significant positive relationship with psychopathy and Machiavellianism, but not with narcissism. Additionally, in line with previous research, it was predicted that sadism scores would be negatively associated with the honesty-humility, agreeableness and emotionality dimensions of the HEXACO. As an additional predictor, disgust sensitivity was used to shed more light on its relationship with sadism.

2. Method

2.1 Participants

A total of 236 participants completed the survey, meaning the study had 0.8 power. One participant was excluded due to providing bogus responses, resulting in a total of 235 participants; 66.4% female (N = 156) and 31.1% male (N=73) with a mean age of 31.35 years (SD = 13.97 years). A power

calculation was conducted prior to the study seeking a moderate effect size with a significance level of 0.05. Due to the number of responses gathered, we were able to increase the power's significance level to 0.01.

2.2 Procedure

Participants over the age of 18 were recruited via social media sites, such as Facebook and Reddit.com, as well as participant recruitment sites (callforparticipants.com and Hanover online research). Participants were directed to a Bristol Online Survey (https://www.onlinesurveys.ac.uk) where the questionnaires were answered confidentially. Participants filled out a consent form prior to taking part in the study. The study was quantitative and cross-sectional in nature, where the key outcome was self-reported sadism.

2.3 Measures

2.3.1 HEXACO-60 (Ashton & Lee, 2009)

The HEXACO-60 consisted of 60 items used to measure overall personality on six dimensions: honesty-humility, emotionality, extraversion, agreeableness, conscientiousness, and openness to experience. Each subscale consists of 10 items, rated on a 5-point Likert scale indicating how much individuals agreed with the statement, where '1' is strongly disagree and '5' is strongly agree. The HEXACO-60 is a reliable measure with internal reliabilities in the .70s for each subscale using both community and college samples (Ashton & Lee, 2009).

2.3.2 The Short Dark Triad (SD3; Jones & Paulhus, 2014)

The Short Dark Triad (SD3) consisted of 27 items measuring Machiavellianism, narcissism and psychopathy. Each subscale was comprised of

9 items, rated on a 5-point Likert scale where '1' is strongly disagree and '5' is strongly agree. The SD3 scales are a reliable measure: Machiavellianism α = 0.75, psychopathy α = 0.72 and narcissism α = 0.73 (Jones & Paulhus, 2014).

2.3.3 Short Sadistic Impulse Scale (SSIS; O'Meara, Davies & Hammond, 2011)

The Short Sadistic Impulse Scale (SSIS) is a measure of sadism and consisted of 10 items, rated on a 4-point Likert scale, where '1' is strongly agree and '4' is strongly disagree. The SSIS is a reliable measure of sadistic impulses, with an internal consistency of 0.86 (O'Meara et al., 2011).

2.3.4 Disgust Scale – Revised (DS-R; Olatunji et al., 2007)

The DS-R consisted of 25 items split into two sections, and measured individuals on three dimensions of disgust: core disgust, animal reminder disgust and contamination-based disgust. In section 1, participants were asked to respond to statements with 'True' or 'False'. In part 2, participants were asked to rate how disgusting they would find the statements either, 'not disgusting', 'slightly disgusting' or 'very disgusting'. The DS-R is a reliable measure with an overall internal consistency of 0.84 and the following reliabilities for each subscale: core disgust α = .74, animal reminder disgust α = .78 and contamination-based disgust α = .61 (Olatunji et al., 2007).

2.4 Ethical considerations

This study was given ethical approval by the Faculty of Medicine & Health Sciences (FMHS) Research Ethics Committee at the University of Nottingham. Participants were over the age of 18 and therefore able to give informed

consent. They were informed of their right to withdraw from the study at any time and the confidentiality.

3. Results

3.1 Preliminary analysis and reliabilities

All data was exported into SPSS and tests for normality were completed. Preliminary analysis indicated that mean sadism scores were skewed (skewness = 1.740, kurtosis = 3.538), therefore data were square-rooted so parametric tests could be performed. Reliabilities, means and standard deviations for all scales are provided in Table 1. Core disgust and contamination-based disgust of the DS-R were not reliable measures, and therefore not used for further analyses. Question 8 of the SSIS ("I wouldn't intentionally hurt anyone") was removed as there was confusion among participants on the phrasing of this question, meaning the final SSIS consisted of nine questions. Data was coded so higher scores indicated higher endorsement of the six HEXACO dimensions, Dark Triad traits and sadism.

Table 1.
Means, SDs and reliabilities for HEXACO, SD3, DS-R, SSIS.

	Mean	SD	α
HEXACO			
Honesty-Humility	34.29	7.57	.82
Emotionality	32.12	7.36	.82
Extraversion	32.10	7.88	.86
Agreeableness	31.44	6.23	.76
Conscientiousness	35.38	6.21	.78
Openness to experience	36.36	6.58	.78
SD3			
Machiavellianism	27.07	6.86	.85
Narcissism	23.52	6.33	.80
Psychopathy	19.43	5.82	.75
DS-R			
Core disgust	12.10	1.25	.41
Animal reminder disgust	7.47	0.75	.61
Contamination-based disgust	5.42	0.92	.35
SSIS	13.04	4.87	.89

3.2 Multiple linear regression

Due to the substantial levels of correlation in the data set, it was necessary to untangle the covariance in order to establish the significant sources of predictable variance. To determine which variables were significant predictors of sadism, a multiple regression was performed with 4 blocks: demographics (age and gender), 6 HEXACO personality dimensions, 3 Dark Triad traits and finally animal reminder disgust. Table 2 contains the standardized betas (β), *t*-values and significance of the four models in the multiple regression, as well as the R^2 for each model. With each additional block of variables, the model became more significant and was able to explain more variance in sadism scores. The final model was highly significant ($F(12,218)=16.92$, $p<.001$) and accounted for 48% of the variance in sadism scores. Extraversion and animal reminder disgust were significant negative predictors of sadism. Machiavellianism and psychopathy were positive predictors of sadism.

Table 2.
Multiple regression output.

	Model 1		Model 2		Model 3		Model 4	
Variable	β	*t*	β	*t*	β	*t*	β	*t*
Age	-.26***	-4.04	-.50	-0.79	-.06	-1.03	-.08	-1.33
Gender	-.16**	-2.57	-.09	-1.36	-.01	-0.10	-.004	-.08
Honesty-humility			-.33***	-4.82	-.02	-0.20	-.04	-.48
Emotionality			-.05	-0.80	.03	0.56	.10	1.69
Extraversion			-.17**	-2.82	-.30***	-4.13	-.29***	-4.09
Agreeableness			-.20***	-3.25	-.05	-0.77	-.03	-.44
Conscientiousness			-.14*	-2.39	-.07	-1.15	-.06	-1.03
Openness to experience			.09	1.62	.05	1.00	.01	.25
Machiavellianism					.20**	2.78	.17*	2.36
Psychopathy					.15	1.73	.15***	1.90
Narcissism					.35***	4.34	.33	4.22
Animal reminder disgust							-.21***	-3.77

Notes. R^2 = .09 for Model 1, R^2 = .32 for Model 2, R^2 = .45 for Model 3, R^2 = .48 for Model 4. *p<.05 **p<.01 ***p<.001

4. Discussion

The main findings of this study were that extraversion, Machiavellianism, psychopathy and animal reminder disgust significantly predicted sadism scores. Our hypothesis that psychopathy and Machiavellianism would have a significant positive relationship with sadism was supported. Our hypothesis that sadism would be negatively associated with honesty-humility, agreeableness and emotionality was supported until Dark Triad measures were entered. However, the addition of the Dark Triad increased the overall significance of the model and the amount of variance of sadism scores explained. Therefore, the current study found a negative relationship between extraversion and sadism implying that the more sadistic an individual was, the less extraverted they were. With each addition of more factors, the model became more significant and explained more variance in sadism scores.

4.1 Extraversion and sadism

This study's finding of the link between high sadism scores and low extraversion, or introversion, scores has been found in clinical samples of sex offenders. There is evidence that rapists and child molesters lack social skills and are more introverted than violent offenders (Gudjonsson & Sigurdsson, 2000).

However, most studies of non-clinical samples report a significant positive relationship between various sadistic activities such as rape (but where the perpetrators have not been imprisoned), physical and verbal aggression, and extraversion scores (Voller & Long, 2010; Caprara, Barbaranelli & Zimbardo, 1996). Finally, in studies of the Dark Tetrad and personality, extraversion is only ever positively and significantly associated with narcissism (Book et al., 2016). Most of the studies investigating offenders use the five factor model of

personality, but as described the HEXACO personality model outperforms any other personality measure in regards to capturing the core personalities of the Dark Tetrad (Book et al., 2015). Perhaps the HEXACO captures an aspect of extraversion that previous measures of personality and sadism have not.

4.2 Machiavellianism, psychopathy and sadism

In line with previous research, most behavioural studies of Dark Tetrad do not find narcissism a contributory predictor of negative outcomes (see Greitemeyer, 2015; Buckels et al, 2014). Some researchers have suggested that sadism fits into the Dark Triad better than narcissism does (Book et al., 2016), something the current study's results also support. The link between the 'darker' Dark Triad traits is apparent in clinical samples as well, psychopaths have regularly been considered more sadistic than non-psychopaths (Holt et al., 1999).

Narcissism is often seen as a less 'dark' trait than psychopathy and Machiavellianism, and in most Western cultures some qualities of narcissism (such as boldness and leadership) are actually seen as desirable (Rauthmann & Kolar, 2012). When participants were asked to rate how desirable, beneficial to the self and beneficial for others psychopathy, Machiavellianism and narcissism were, individuals consistently rated narcissism in a more positive light (Rauthmann & Kolar, 2012). Because sadism has such dark, negative and even 'evil' connotations it is not surprising that it is more positively correlated with two other similarly dark traits.

4.3 Animal reminder disgust and sadism

The DS-R was originally added for a behavioural aspect of the current study though this was cancelled, but as participants had already filled it out online, the measure was used for analysis. From the DS-R only the animal reminder disgust subscale was found to be significantly associated with sadism. This subscale is named animal reminder disgust because it reminds us of our animality, which Rozin and colleagues (1999) suggest humans do not like to be reminded hence disgust is a way of pushing that thought away. As previously mentioned, there has only been one study that investigated the link between sadism and disgust, Buckels and colleagues' (2013) faux-bug-killing paradigm study which indicated that sadism was not related to disgust sensitivity. However, Buckels and colleagues' (2013) study had a significantly smaller sample size of only 78 participants with a younger mean age (20.37 years) in comparison to the current study. It is therefore possible that the current study's sample is more representative of the general population and may more accurately reflect disgust sensitivity's relationship to sadism using self-report measures.

In the current study, animal reminder disgust was an important predictor of sadism scores so inferences must be drawn from other research. In a behavioural measure of animal reminder disgust, participants were shown a video of open-heart surgery. Scoring high on the animal reminder measure was significantly associated with visual avoidance of the video (Olatunji, Haidt, McKay & David, 2008). Similarly, when watching a video of blood being drawn, individuals who scored high on animal reminder disgust were observed to have more facial muscle tension and lower heart rates (Olantunji et al., 2008). The current study found a significant negative relationship between animal reminder

disgust and sadism, meaning that 'sadists' found questions and scenarios of less disgusting. It seems rather logical when one thinks about what is at the core of sadism: taking pleasure in another person's pain (Paulhus, 2014). If sadists were disgusted by blood, guts and injuries, they would in essence not be very good sadists. Additionally, when one tries to understand the findings in the context of the moral hypervigilance theory of disgust (Jones & Fitness, 2008), an interesting picture emerges. Individuals who find sadism and everything it entails disgusting are likely to distance themselves as far away from it as possible, hence the result that individuals with high animal reminder disgust sensitivity have lower sadism scores. Clearly, these are two very opposing accounts of disgust sensitivity's relationship with sadism and further research is needed to determine what the relationship is.

4.3 Limitations and future directions

A limitation of the current study is its reliance on self-report data. This study attempted to include a behavioural measure of sadism alongside the psychometric measures of sadism. However, due to lack of participants this was unable to be completed. While it is difficult to study the Dark Tetrad in practice due to ethical problems with eliciting aggressive and malevolent behaviour (Paulhus, 2014), these behaviours have been studied using trolling, a faux-bug-killing paradigm and violent video games. Other potential behavioural measures could include individuals' enjoyment of, and time spent watching, horror movies, as there is possibly an underlying sadistic pleasure in watching movies such as "the Human Centipede" or similar grotesque and gory films. Future studies may seek to include the DS-R as an extra measure to gain an understanding of the relationship between sadism and disgust sensitivity.

5. Conclusions

The present study sought to examine the underlying personality traits associated with everyday sadism in the general population. From the HEXACO, only extraversion was found to be predictive of sadism scores. It has also provided evidence to support the predictive value of psychopathy and Machiavellianism for everyday sadism scores. Finally, the current study has emphasized the need for expansion upon another area of research concerning the Dark Tetrad, namely disgust sensitivity.

Word count: 3,873

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Executive summary

Audience: Participants who completed the study

Background

Sadism is defined as deriving pleasure from harming others (Baumeister & Campbell, 1999). To date, most research has focused on sexual sadism, but there is an increasingly large body of evidence that suggests non-sexual sadism is also prevalent in society, termed 'everyday sadism' (Buckels, Jones & Paulhus, 2013). For instance, we enjoy watching violent movies, playing violent video games and viewing sports combat involving humans and animals (Baumeister & Campbell, 1999).

More recently, sadism has been associated with the Dark Triad, a combination of three nasty and unpleasant personality traits: narcissism, Machiavellianism and psychopathy. Narcissists have a grandiose sense of self and constantly crave attention; Machiavellians are masters at manipulating; and psychopaths are callous and can cause serious harm (Paulhus, 2014). This dark side of personality often has significant antisocial behavioural consequences such as bullying, delinquency as well as counterproductive workplace behaviours, which can include anything from poor attendance at work to destruction of property (O'Boyle, Forsyth, Banks & McDaniel, 2012). It has been suggested sadism be added to the Dark Triad, making it the Dark Tetrad, as it is an equally 'dark' and disagreeable trait (Buckels et al., 2013).

Disgust is an emotion that originated as a response to bad tastes as an evolutionary way of protecting oneself from disease (Rozin, Haidt & McCauley, 1999). Disgust may be linked to sadism in that research has shown that offenses of an immoral nature as well as offenders produce levels of disgust (Jones & Fitness, 2008). Therefore, individuals will try to distance themselves as far away

from these dishonest individuals and offences as possible. In this context, disgust is more likely an emotion that makes an individual feel superior to others and view them with repulsion and disapproval.

Aim

The aim of this study was to understand the underlying 'normal' and 'dark' personality characteristics associated with sadism. We also wanted to establish what disgust-sensitivity's relationship to sadism was. Finally, since the Dark Tetrad is a relatively new area of psychological research we wanted to expand the current literature available.

Description of procedure

A link to an online questionnaire was circulated via e-mail and social media platforms such as Facebook and Reddit. When the link was opened, individuals were directed to an online questionnaire which consisted of four measures:

1. HEXACO-60 – a measure of six specific dimensions of personality
2. Short Dark Triad Scale (SD3) – a measure of psychopathy, narcissism and Machiavellianism
3. Short Sadistic Impulse Scale (SSIS) – a measure of sadism
4. Disgust Scale-Revised (DS-R) – a measure of how sensitive an individual is to disgust

A total of 235 participants completed the survey (66.4% female, 31.1% male, mean age of 31.35 years). In order to interpret all of the results, data was exported into statistical software called SPSS. We then used a statistical test

called multiple regression which was able to tell us what relationship, if any, the variables in the measures above had to sadism. We separated the data into 4 blocks: demographics (age and gender), 'normal' personality, the Dark Triad and disgust sensitivity. The final model, which included all of the previously mentioned variables, was able to predict nearly 50% of all sadism scores.

Description of findings

Results showed that there was an important relationship between four of our variables and sadism. We found a positive relationship between sadism, and psychopathy and Machiavellianism. This meant that the more psychopathic and Machiavellian an individual was, the more sadistic they were. We also found that there was a negative relationship between sadism, and extraversion and animal reminder disgust (which was a subscale of the DS-R). This meant that the less extraverted an individual was and the less disgusted they were by animal remains, the more sadistic they were.

Conclusions and recommendations

From the HEXACO-60, we were able to determine that more sadistic individuals were less extraverted. In other words, individuals with higher sadism scores are more introverted. This is a conclusion that has been found in research on sexual sadism in that rapists and child molesters tend to lack social skills and are more introverted than violent offenders (Gudjonsson & Sigurdsson, 2000). However, in samples of the sexual sadism in the general population the results tend to indicate that more sadistic individuals are more introverted. To date, there has been no evidence of a relationship with extraversion and non-sexual sadism. There is clearly some inconsistency in the relationship of extraversion to

sadism, and it is therefore this study's recommendation to continue to use the HEXACO as a measure of personality as it has been shown to outperform any other personality measure in regards to capturing the core personalities of the Dark Tetrad (Book et al., 2015).

Another one of the conclusions we can draw from our results is that there is indeed a relationship between the Dark Triad and sadism. Our results indicate that sadism may actually be a better fit than narcissism in the Dark Triad. This is in line with previous on the subject, which suggests that narcissism is often seen as a less 'dark' trait than psychopathy and Machiavellianism, and in most Western cultures some qualities of narcissism (such as boldness and leadership) are actually seen as desirable (Rauthmann & Kolar, 2012).

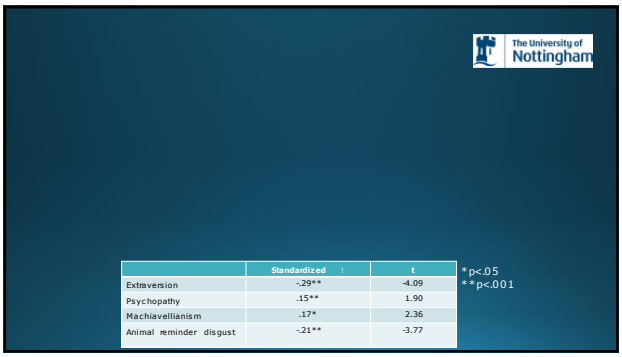
The study found an interesting relationship between animal reminder disgust from the DS-R scale. As previously mentioned, disgust has been associated with the need to either physically or morally distance oneself as far away from the disgusting situation or object as possible. Animal reminder disgust focuses on preserved or exposed body part and death (Olatunji et al., 2008). If sadists were disgusted by blood, guts and injuries, they would in essence not be very good sadists. Therefore, individuals who find sadism and everything it entails disgusting are likely to distance themselves as far away from it as possible, hence the result that individuals with high animal reminder disgust sensitivity have lower sadism scores. There has only been one previous study that investigated the relationship between sadism and disgust and found that sadism was not related to disgust sensitivity (Buckels et al., 2013). However, Buckels and colleagues' (2013) study had a much smaller sample size of only 78 participants with a significantly younger mean age (20.37 years), and it is therefore possible that the current study's sample is more representative of

the general population. Clearly, these are two very opposing accounts of disgust sensitivity's relationship with sadism and it is recommended that future studies include the DS-R in studies of sadism to help determine what the exact relationship is. The final recommendation from this study is to include a behavioural measure of sadism in future studies, as the current study heavily relied on self-report data.









	Standardized	t
Extraversion	-.29**	-4.09
Psychopathy	.15**	1.90
Machiavellianism	.17*	2.36
Animal reminder disgust	-.21**	-3.77

*p<.05
**p<.001





Reflective report

I have organized my reflective report to follow the structure of the Research Dissertation, as a way of highlighting the obstacles faced during each section.

Introduction

I have always been interested in psychopathy and overcrowding, and it was one of my main reasons for enrolling onto the MSc Forensic and Criminological Psychology. My interests were particularly sparked after watching Louis Theroux's documentaries on prisons in the USA and seeing the number of people forced to live in small cells and the detrimental psychological and physical effects this had on prisoners. I wondered whether overcrowding may be the cause of antisocial behaviours in prison. Because I knew Dr. Egan's research interests were primarily about the Dark Triad I began to explore more than just psychopathy. I then stumbled across a paper by Jones, Buckels and Paulhus (2013) which looked at the Dark Triad and included a behavioural measure of sadism. I thought this would be a great opportunity to build on a relatively new area of research and include an extra variable: overcrowding.

One of the major issues I had while writing the introduction was the fact that a lot of the overcrowding research was from the 1960s and 70s. While it was frustrating, it further emphasized to me that this was an area that needed to be brought back into the spotlight. When I finished writing

the introduction for my FRP proposal, Vince advised me to gather more data on the personality information just in case the behavioural aspect of the study was not able to be done. At the time I was convinced that the behavioural experiment would happen, but in hindsight I am so glad that he convinced me to do this because it saved me a lot of hassle later on in the writing process.

Method

From October to the end November there were significant practical hurdles to overcome: how would the bug killing machine work, how to overcrowd people, how to get people into a room at the same and how to match up the data to the participant. It seemed as though every time I fixed a problem, another one would pop up and the methodological process really tested my perseverance. Dr. Egan advised me to get in touch with the author of the journal article that I was replicating to ask him how he created the bug-killing machine in his study. I was initially hesitant to do this because I wondered whether a researcher who was so well-known in this field of research would bother writing back to a student. However, I received a reply almost immediately and the research was so nice, even offering to ask his father to create a bug killing machine for me. It felt really rewarding to get a response and encouraged me to continue with this lengthy process.

One of the most difficult aspects of this study was to try and find a room where the overcrowding could happen, and what numerically would

quantify overcrowding. Eventually I had finally found a study that had quantified their levels of overcrowding. However, if I were to use the smallest room available on Jubilee and use their equation, I would still need to get 32 people in there at the same time which was not only not feasible in terms of logistics but also space. Eventually it was decided that rather than only overcrowding them, they would be made as uncomfortable as possible, meaning they would be sat very close together, be made to wait for a certain length of time and the study would be moved to the QMC which was explained to me to be quite a confusing building. I then spent a long time trying to figure out how to assign participants to either the overcrowding or non-overcrowding condition, as I had to make sure that I had enough participants showing up to each session (otherwise the overcrowding would not work). It was decided that participants would be randomly assigned to a condition prior to completing the survey i.e. participant 1 would be in condition A, participant 2 would be in B. My final hurdle was how to ensure that if a participant dropped out of the overcrowding condition, or simply did not show up, I would still be able to crowd them. I mentioned this problem in one of my lectures and everyone was very supportive, some even offering to act as confederates if I needed them. Dr. Egan suggested that since the study would be taking place in QMC I could also ask people who were waiting there for a family member or for an appointment.

The final stage of the methodological process was waiting for ethical approval. I found this particularly frustrating because it was completely

out of my hands, and it also reinforced that one of the main qualities I need to work on is patience. I kept thinking about how this wait would affect my data collection and the increasingly short amount of time I would have to collect my experimental data. However, on the 15th of March, 2016 I received ethical approval for the Ethics Committee and was finally ready to start collecting my data.

Results

On June 10th, I finished my data collections with a total of 236 participants who completed the survey. Of those participants only 43 left their email for the behavioural part of the study. I calculated that in order for my study to have enough power I would have needed a total of 102 participants in the experimental part of the study. Therefore, due to lack of participants the study would be significantly underpowered and it was decided that the behavioural part of the study had to be cancelled. This situation was very frustrating due to the fact that it was something I had set out to do from the beginning, but also because of the vast numbers of hurdles I had to overcome methodologically to be in a place where it was possible to conduct. Not only this, I was also very worried about the fact that my research would no longer be novel. It took me a while to get over the disappointment but luckily I had a back up plan as all of the psychometrics from the online questionnaire could still be used for analysis.

Near the end of June, I faced by biggest fear and weakness of the whole research process: statistics. I was very apprehensive about doing it but was able to get in two statistics sessions with Dr. Egan. He was willing to demonstrate what I needed to do, and then I was able to use another computer and complete the rest myself. When I finally started to feel as though I understood what was happening, there were some problems with the skewness of sadism data and the direction of the correlations I found. For instance, honesty-humility which is consistently found to have a negative relationship with sadism had a positive relationship in my data set. Dr. Egan and I spent a long time trying to understand what was wrong with the data set. After nearly seven hours of statistics, I left feeling very deflated and frustrated but received an email from Dr. Egan saying that he had identified what the problem was and suggested what I needed to do fix it. I now feel much more confident about my abilities to recode data, use SPSS to find descriptive statistics and editing SPSS syntax.

My final big hurdle to overcome in the results section was the outcome of my my multiple regression. I started out the research process with a very clear idea of what I expected to find. However, my results did not support most of what I had predicted. I had to remind myself that just because I didn't find exactly what other researchers had found before , didn't mean that my results were not important. In fact, many of my results were very significant ($p<.001$) and due to the fact that the Dark

Tetrad is still a relatively new area of research, there is still room for contradictory and new findings.

Discussion

I enjoyed writing my discussion section the most out of all the sections in the dissertation because it afforded me the opportunity to understand and explain my findings. While at times it was incredibly frustrating to not find any information that directly related to my results, it helped me to think outside the box and try to link theories that may not be obviously related. This was particularly the case with disgust sensitivity, which I found incredibly interesting area of research. There is very little evidence linking the two, so I had to hypothesize what I thought the link may be, and it was nice to feel as though I may have found something novel after all.

Conclusion

In the future, I am still hoping to be able to do the behavioural aspect of the study as I am still very interested on the effects of overcrowding on sadism. Not only have I become so much more interested in the Dark Tetrad because of all the research I have done, I also think that is an area that is only going to get more and more important in forensic psychology. Finally, one of the greatest things to come out of the whole project is that I am now much more comfortable with SPSS and don't feel as daunted by it as I did prior to this experience.