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Personality, Social Support and Risk-Taking/Antisocial Behaviour: A study
of their Interactions

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MSc Forensic and Criminological Psychology Research Project Proposal

Project Title:

Personality, Social Support and Risk-Taking/Antisocial Behaviour: A study of their Interactions.

Overview of the topic

There is a well-established link in the literature between personality traits (core personality and dark triad) and risk-taking and antisocial behaviour. The present research aims to extend this knowledge to investigate if an individual's level of perceived social support influences this relationship.

The dark triad describes three personality constructs: Machiavellianism, Narcissism, and Psychopathy (Paulhus & Williams, 2002). Researchers have demonstrated that these traits can be mapped onto core personality traits, for example using the HEXACO model (Lee & Ashton, 2005; Pailing, Boon, & Egan, 2014; Meere & Egan, 2017). The HEXACO model describes six major dimensions of personality: Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience. Researchers have reported the HEXACO model accounts for more variance in the dark triad traits than other models of core personality (Book, Visser, & Volk, 2015). Additionally, Burtaverde, Chraif, Anitei, and Dumitru (2017) state the HEXACO model better explains risk behaviour. Therefore, the present research will explore personality using the HEXACO model in addition to the dark triad.

The six major dimensions of personality in the HEXACO model have been explored in relation to risk-taking, and report that risk-taking is significantly related to some of these dimensions. De Vries, De Vries, and Feij (2009) demonstrate risk-taking is positively related to openness and extraversion but

negatively related to conscientiousness, honesty-humility, and emotionality. Similarly, Nicholson, Soane, Fenton-O'Creevy, and Willman (2005) found personality is predictive of risk-taking behaviour as a whole and also when split into six risk-taking domains (recreational, health, career, financial, safety and social). In addition, the Dark Triad traits have been researched in relation to risk-taking behaviours, finding positive relationships between all Dark Triad traits and risk-taking behaviour (Crysel, Crosier & Webster, 2013).

Although the terms anti-social behaviour and risk-taking behaviour overlap somewhat, anti-social behaviour can be defined as behaviour causing an individual or society harm and offence (Millie, 2008). There is a well-documented relationship between personality and anti-social behaviours. Low agreeableness and low conscientiousness have been implicated in antisocial behaviour by several researchers (Barlas & Egan, 2007; Miller & Lynam, 2001; Jones, Miller, & Lynam, 2011; Egan, Hughes, & Palmer, 2015). Antisocial behaviour in these studies included weapon carrying, aggression, and shoplifting. Higher neuroticism and extraversion have also been shown to associate with some antisocial behaviours (Miller & Lynam, 2001; Jones, Miller, & Lynam, 2011).

Research demonstrates the Dark Triad traits also have associations with antisocial behaviour. Muris, Merckelbach, Otgaar, and Meijer (2017) reported positive correlations of Machiavellianism and psychopathy to aggression and delinquency. The same effect was found, but to a lesser degree, with narcissism. Individuals with higher levels of DT traits have been reported to be more likely to engage in sexual harassment, violence, and acts of animal cruelty (Zeiger-Hill, Besser, Morag, & Campbell, 2016; Pailing, et al 2014; Kavanagh, Signal, & Taylor 2013).

From the information mentioned so far, it is reasonable to assume there is a relationship between risk-taking and antisocial behaviour and an individual's personality traits, including core personality and dark triad traits.

There is also evidence to suggest that social support is a protective factor inhibiting offending, risk taking, and anti-social behaviours. Cullen's theory of social support (1994) suggests social support protects someone from engaging in criminal behaviour. Furthermore, Michael & Ben-Zur (2007) reported less risk taking in adolescents with positive relationships with their parents. Perceived social support is arguably more meaningful to the individual than objective social support, and therefore is perhaps more likely to influence behaviour (Swickert & Herring 2002). For this reason, a measure of perceived social support is proposed in this study.

There is a lack of research investigating the interaction between personality, social support, and risk-taking and anti-social behaviours. The proposed research aims to replicate the relationship between personality (the six dimensions, HEXACO, and dark triad traits outlined earlier) and risk-taking and anti-social behaviours. It will then aim to extend these findings and explore perceived social support as a moderator acting as a buffer in these relationships.

Research Question(s)

- Can the relationships between personality (HEXACO and Dark Triad) and anti-social and risk-taking behaviours be replicated?
- Does an individual's level of perceived social support moderate these relationships?

Proposed Methods

(a) Participants

This research proposes to collect data using the Bristol Online Survey package. Participants will be recruited by convenience sampling through advertising on social media websites (for example, Facebook) and participant recruitment platforms (for example, Hanover online research). To reduce bias and to obtain a sample representative of the general population, the study will be advertised on pages where anyone has access. Participants will be between 18 and 65 years old.

In order to determine sample size, Warner (2008) recommends a minimum number of $N > 50 + 8k$ for regression analyses. With 12 variables, this suggests I will need a sample size of at least 146. However, given an effect size of 0.1, an error probability of 0.05, and a sought power of 0.95, with 12 predictor variables, a G-Power analysis suggested a required sample of 270 participants (Faul, Erdfelder, Lang, & Buchner, 2007).

(b) Procedure

This research will use Bristol Online Survey to administer the questionnaires. Once participants have given informed consent, they will be asked to complete a questionnaire including basic demographic information (age, gender, and years of education), two measures of personality (HEXACO and DT), a self-report risk behaviour scale, a self-report anti-social behaviour scale, and a measure of social support. These scales and questionnaires compose of 159 items. Participants will be given specific instructions regarding each scale prior to completion. After completion of all scales, participants will have the opportunity

to read a debrief providing them with more information about the research. Data collected from the questionnaire will be anonymous.

(c) Design

This is a predictor-moderation-outcome regression design in which the predictor is personality, the outcome risk and antisocial behaviour. Moderation will be perceived social support.

(d) Measures (and/or materials)

All scales have been selected for their reliability, validity, and brevity. The scales compose:

1. Anti-social behaviour scale (Self-Report Early Delinquency)- SRED (UK Version – Charles & Egan, 2007; Moffit & Silva, 1988)

Charles and Egan (2007) modified the original scale initially composed by Moffit and Silva (1988) to develop a UK version. This SRED consisted of 58 items asking participants how often they have engaged in various antisocial behaviours with answers of 'never', 'once', and 'more than once'. For the present research this measure will be shortened selecting 25 items.

2. HEXACO-60 (Short Version)

This scale measures the six main dimensions of personality: Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience. It comprises of 60 items with 6 10-item subscales for each of the dimensions. Each item is a statement about oneself and participants will be asked to rate their agreeability to each item on a Likert scale where 1 represents

'strongly disagree' and 5 represents 'strongly agree'. (Ashton & Lee, 2009).

Ashton and Lee (2009) demonstrate the scale has good reliability and validity.

3. Multidimensional Scale of perceived social support (MSPSS)

This is a 12-item scale with items exploring the level of support an individual perceives they have from family, friends, and a 'special person'. Participants are asked to rate each item according to their agreeability with the statement on a scale between 1 and 5, where 1 represents 'strongly disagree' and 5 represents 'strongly agree'. (Zimet, Dahlem, Zimet, & Farley, 1988). A final question was added to determine the relationship of the participant to the 'special person' they chose. This scale has been demonstrated to have good internal and test-retest reliability, and factorial and construct validity (Zimet et al, 1988). Other researchers have also shown good reliability and validity within this scale (Stanley, Beck, & Zebb, 1998).

4. The Risk-Taking Index (RTI)

This is a 6-item questionnaire where each item represents a different domain of risk taking: recreational, health, career, financial, safety, and social risk. Participants rate each item on a 5-point scale with responses varying from 'never' to 'very often' to indicate their engagement in the different risk behaviours. (Nicholson et al, 2005). The questions are repeated twice to determine behaviour in the past and then presently. The authors demonstrated the reliability and validity of this scale.

5. The Short Dark Triad (SD3)

This scale includes a total of 27 items, comprised of 3 subscales of 9 items each. The subscales measure Machiavellianism, Narcissism, and Psychopathy. Each

item is rated on a 5-point Likert scale representing the individual's agreeability with the statement with responses ranging from 'strongly disagree' to 'strongly agree'. (Jones & Paulhus, 2014). This measure has been shown to have adequate reliability and validity (Jones & Paulhus, 2014).

6. Youth Risk Behaviour Survey (YRBS)

This consists of 28 multiple choice questions, sampling different kinds of risk. (Brener, Collins, Kann, Warren, & Williams, 1995).

(e) Proposed analytical methods

Data analysis will utilize SPSS. First, I will test for the integrity and reliability of measure scales. Correlations will test interrelationships of measures. Then I will see whether, consistent with existing literature, there is a correlational relationship between personality (six dimensions and the dark triad) and risk-taking behaviours, and personality and anti-social behaviours. Next, a regression analysis will reveal the extent to which personality domains and social support predict the outcomes of antisocial and risk-taking behaviour. Finally, this research will investigate the moderating role of perceived social support on these relationships using regression analysis and the SPSS macro PROCESS (Hayes, 2013).

(f) Estimated Timescale

6 months for data collection and write-up.

(g) Staffing issues/equipment (if applicable)

Not applicable

Word Count – 1588

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Appendices

Appendix A – Participant Information Sheet & Consent

PARTICIPANT INFORMATION

Division of Psychiatry & Applied Psychology
School of Medicine, Faculty of Medicine & Health Sciences

Project Title: “I Get by with a Little Help from my Friends”

Researcher: Sophie Bull (sophie.bull@nottingham.ac.uk)

Supervisor: Dr Vincent Egan (vincent.egan@nottingham.ac.uk)

Ethics Reference Number: 241-1802

You are invited to participate in a research study titled ‘I Get by with a Little Help from my Friends’. You must be aged 18-65 to participate in this research. This study is being done by Sophie Bull, an MSc student studying at the University of Nottingham. The information we get from this study may help towards a fuller understanding of why people engage in risky behaviours.

If you have any questions or concerns, please don’t hesitate to contact us at the above email addresses.

What is the study about?

The purpose of this research study is to investigate the relationships between personality, social support, and risky behaviours. The study will take you approximately 15 minutes to complete, during which you will rate 137 items on various psychological tests (plus 3 general demographic questions).

If you do decide to participate, you will be asked to sign your consent. Your participation is voluntary, and you may decline to answer a particular question, and without giving a reason. You are free to withdraw (i.e. pull out) at any point before or during the study by closing the browser window. It will not affect you in anyway. The data will only be uploaded on completion of the questionnaire by clicking the FINISH button.

However, because this study uses anonymous questionnaires, once you have finished the questionnaire and submitted your answers, it will not be possible to withdraw the data.

Will the research be of any personal benefit to me?

There are no direct benefits or risks to you though we hope the research will contribute to help understand why some people are more likely to engage in risky behaviour.

What will happen to the information I provide?

All of the information that you provide during the research will be anonymous and treated confidentially. We believe there are no known risks linked with this research study. Your taking part will be entirely anonymous however, as with any online related activity the risk of a breach is always possible. We will reduce any risks by: not asking for your name or any other personal details, using a survey site developed by a UK University for research hosted on secure servers and using settings so we cannot see, upload or store IP addresses. The anonymous data will be downloaded and grouped into a locked database which only the research team can access. This will be held on secure servers held and maintained at the University of Nottingham. The grouped data may be looked at by responsible people from the University to check that the study is being conducted correctly. All will have a duty of confidentiality. All the data will be held by the Research Supervisor for a period of 7 years before being destroyed. We would like to ask your consent for the overall anonymous data from this study to be used by other researchers (with research ethics approval) in the future for research and teaching purposes.

What will you do with the data?

The data will contribute to the researcher's dissertation for an MSc degree. The results of the study may be published in scientific journals and presented at scientific conferences. The overall data will be reported in general terms so no individual can be identified. If you would like a summary of the results then you can contact the researchers using the contact details above.

If you have any questions or concerns, please don't hesitate to ask. We can be contacted before and after your participation at the above address.

THANK YOU FOR YOUR PARTICIPATION

PARTICIPANT CONSENT

Centre for Forensic & Family Psychology
Division of Psychiatry & Applied Psychology
School of Medicine, Faculty of Medicine & Health Sciences

Project Title: "I Get by with a Little Help from my Friends"

Researcher: Sophie Bull (sophie.bull@nottingham.ac.uk)

Supervisor: Dr Vincent Egan (vincent.egan@nottingham.ac.uk)

Ethics Reference Number: 241-1802

- I have read and understood the Participant Information.
YES/NO
- I know how to contact the researcher if I have questions about this study?
YES/NO
- I understand that my participation is voluntary and I am free to withdraw at any time?
YES/NO
- I understand that for anonymous questionnaire studies, once you have completed the study and submitted your questionnaire, the data cannot be withdrawn?
YES/NO
- I understand the overall anonymised data from this study may be used by other researchers in the future for research and teaching purposes?
YES/NO
- I understand that non-identifiable data from this study might be used in academic research reports or publications?
YES/NO
- I am between 18 and 65 years old.
YES/NO
- I indicate my willingness to take part in the study voluntarily
YES/NO

Appendix B – Data collection instruments and instructions

HEXACO-60 (Ashton & Lee 2009)

Instructions: On the following pages you will find a series of statements about yourself. Please read each statement and decide how much you disagree or agree with that statement. Please answer every statement, even if you are not completely sure of your response.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

- 1 I would be quite bored by a visit to an art gallery.
- 2 I plan ahead and organize things, to avoid scrambling at the last minute.
- 3 I rarely hold a grudge, even against people who have badly wronged me.
- 4 I feel reasonably satisfied with myself overall.
- 5 I would feel afraid if I had to travel in bad weather conditions.
- 6 I wouldn't use flattery to get a raise or promotion at work, even if I thought it would succeed.
- 7 I'm interested in learning about the history and politics of other countries.
- 8 I often push myself very hard when trying to achieve a goal.
- 9 People sometimes tell me that I am too critical of others.
- 10 I rarely express my opinions in group meetings.
- 11 I sometimes can't help worrying about little things.
- 12 If I knew that I could never get caught, I would be willing to steal a million dollars.
- 13 I would enjoy creating a work of art, such as a novel, a song, or a painting.
- 14 When working on something, I don't pay much attention to small details.
- 15 People sometimes tell me that I'm too stubborn.
- 16 I prefer jobs that involve active social interaction to those that involve working alone.
- 17 When I suffer from a painful experience, I need someone to make me feel comfortable.
- 18 Having a lot of money is not especially important to me.
- 19 I think that paying attention to radical ideas is a waste of time.
- 20 I make decisions based on the feeling of the moment rather than on careful thought.
- 21 People think of me as someone who has a quick temper.
- 22 On most days, I feel cheerful and optimistic.
- 23 I feel like crying when I see other people crying.
- 24 I think that I am entitled to more respect than the average person is.
- 25 If I had the opportunity, I would like to attend a classical music concert.

- 26 When working, I sometimes have difficulties due to being disorganized.
- 27 My attitude toward people who have treated me badly is “forgive and forget”.
- 28 I feel that I am an unpopular person.
- 29 When it comes to physical danger, I am very fearful.
- 30 If I want something from someone, I will laugh at that person's worst jokes.
- 31 I’ve never really enjoyed looking through an encyclopedia.
- 32 I do only the minimum amount of work needed to get by.
- 33 I tend to be lenient in judging other people.
- 34 In social situations, I’m usually the one who makes the first move.
- 35 I worry a lot less than most people do.
- 36 I would never accept a bribe, even if it were very large.
- 37 People have often told me that I have a good imagination.
- 38 I always try to be accurate in my work, even at the expense of time.
- 39 I am usually quite flexible in my opinions when people disagree with me.
- 40 The first thing that I always do in a new place is to make friends.
- 41 I can handle difficult situations without needing emotional support from anyone else.
- 42 I would get a lot of pleasure from owning expensive luxury goods.
- 43 I like people who have unconventional views.
- 44 I make a lot of mistakes because I don’t think before I act.
- 45 Most people tend to get angry more quickly than I do.
- 46 Most people are more upbeat and dynamic than I generally am.
- 47 I feel strong emotions when someone close to me is going away for a long time.
- 48 I want people to know that I am an important person of high status.
- 49 I don’t think of myself as the artistic or creative type.
- 50 People often call me a perfectionist.
- 51 Even when people make a lot of mistakes, I rarely say anything negative.
- 52 I sometimes feel that I am a worthless person.
- 53 Even in an emergency I wouldn’t feel like panicking.
- 54 I wouldn’t pretend to like someone just to get that person to do favors for me.
- 55 I find it boring to discuss philosophy.
- 56 I prefer to do whatever comes to mind, rather than stick to a plan.
- 57 When people tell me that I’m wrong, my first reaction is to argue with them.
- 58 When I’m in a group of people, I’m often the one who speaks on behalf of the group.

- 59 I remain unemotional even in situations where most people get very sentimental.
- 60 I'd be tempted to use counterfeit money, if I were sure I could get away with it.

The Short Dark Triad (SD3.1.1 – 27 items)

Please rate your agreement or disagreement of the following statements using the following guidelines.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

Machiavellianism subscale

1. It's not wise to tell your secrets.
2. I like to use clever manipulation to get my way.
3. Whatever it takes, you must get the important people on your side.
4. Avoid direct conflict with others because they may be useful in the future.
5. It's wise to keep track of information that you can use against people later.
6. You should wait for the right time to get back at people.
7. There are things you should hide from other people because they don't need to know.
8. Make sure your plans benefit you, not others.
9. Most people can be manipulated.

Narcissism subscale

1. People see me as a natural leader.
2. I hate being the center of attention. (R)
3. Many group activities tend to be dull without me.
4. I know that I am special because everyone keeps telling me so.
5. I like to get acquainted with important people.
6. I feel embarrassed if someone compliments me. (R)
7. I have been compared to famous people.
8. I am an average person. (R)
9. I insist on getting the respect I deserve.

Psychopathy

1. I like to get revenge on authorities.
2. I avoid dangerous situations. (R)
3. Payback needs to be quick and nasty.
4. People often say I'm out of control.
5. It's true that I can be mean to others.
6. People who mess with me always regret it.
7. I have never gotten into trouble with the law. (R)
8. I enjoy having sex with people I hardly know
9. I'll say anything to get what I want.

Multi-Dimensional Scale of Perceived Social Support (MSPSS)

The following questions ask about your family, friends, and a 'special person'.
(The 'special person' could be, for example, a best friend, partner, teacher, parent, sibling, etc.)

Please rate your agreement or disagreement with each item using the following guidelines:

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

- 1) There is a special person who is around when I am in need
 - 2) There is a special person with whom I can share my joys and sorrows.
 - 3) My family really tries to help me.
 - 4) I get the emotional help and support I need from my family.
 - 5) I have a special person who is a real source of comfort to me.
 - 6) My friends really try to help me.
 - 7) I can count on my friends when things go wrong.
 - 8) I can talk about my problems with my family.
 - 9) I have friends with whom I can share my joys and sorrows.
 - 10) There is a special person in my life who cares about my feelings
 - 11) My family is willing to help me make decisions
 - 12) I can talk about my problems with my friends.
 - 13) Please state the relationship to you of the special person
-

SRED: (Adapted from Charles & Egan, 2007)

From the following list, please state as honestly as possible how many of the things you have ever done. Almost everyone does a lot of the things listed below at some point in their life. Remember, nobody will know how you answered the questions.

0 Never **1** Once **2** More than once

1. Carrying a weapon in case it is needed in a fight (e.g. a knife, chain, or piece of wood)
2. Going around with a group of three or more damaging property or getting into fights
3. Purposely damaging something in a public place (e.g. streets, movie theatres, buses, toilets)
4. Starting a fire where you should not burn anything
5. Purposely damaging a parked car (e.g. breaking an aerial, slashing tyres, scratching paint)
6. Stealing something from an open shop or store (shoplifting).
7. Taking a car or motorcycle for a drive without permission
8. Smoking cannabis (pot, marijuana, hashish)
9. Buying or drinking alcoholic drinks in hotels or any other public place
10. Drinking alcoholic drinks during school/work hours or at lunchtime on a school/work day
11. Getting suspended or expelled/fired from school/work
12. Being absent from school or work without permission
13. Fighting in the street or other place (not fighting at school)
14. Struggling to get away from a police officer
15. Using any kind of weapon in a fight (e.g. knife, chain, broken bottle, rock)
16. Swearing loudly in a public place
17. Purposely littering the street or footpath by smashing bottles or tipping rubbish bins over
18. Purposely damaging property that belongs to a school

19. Painting or writing graffiti words on a wall in a public place
20. Purposely damaging something in a park or public garden
21. Breaking the windows of an empty building
22. Getting drunk
23. Stealing alcoholic drinks from a shop, your parents home, or other place
24. Getting into trouble with your friends, family or school/work because you were drinking alcohol
25. Hitting another young person in a serious effort to hurt them (not a brother or sister)

The Risk Taking Index (Nicholson, Soane, Fenton-O'Creevy, Willman, 2005)

Please could you tell us if any of the following apply to you now.

Please use the scales as follows:

1=never, 2=rarely, 3=quite often, 4=often, 5=very often

- a) recreational risks (e.g. rock-climbing, scuba diving)
- b) health risks (e.g. smoking, poor diet, high alcohol consumption)
- c) career risks (e.g. quitting a job without another to go to)
- d) financial risks (e.g. gambling, risky investments)
- e) safety risks (e.g. fast driving, city cycling without a helmet)
- f) social risks (e.g. standing for election, publicly challenging a rule or decision)

Please could you tell us if any of the following have applied to you in your past.

Please use the scales as follows:

1=never, 2=rarely, 3=quite often, 4=often, 5=very often

- a) recreational risks (e.g. rock-climbing, scuba diving)
- b) health risks (e.g. smoking, poor diet, high alcohol consumption)
- c) career risks (e.g. quitting a job without another to go to)
- d) financial risks (e.g. gambling, risky investments)
- e) safety risks (e.g. fast driving, city cycling without a helmet)
- f) social risks (e.g. standing for election, publicly challenging a rule or decision)

Participant Debrief

Thank you for your participation in this study.

Existing research shows that an individual's personality influences their engagement in risk taking behaviours. This study is testing whether an individual's level of perceived social support effects this relationship.

Due to confidentiality and anonymity, we are unable to give individual feedback from your personality assessments, however, if you are interested in learning more about your individual personality type then there are various free online tests, (for example see: <https://www.truity.com/view/tests/big-five-personality>).

There is also information available about the benefits of social support and some practical advice about growing your support network on the links below, should you wish to know more.

<http://www.apa.org/helpcenter/emotional-support.aspx>

<http://www.heretohelp.bc.ca/visions/social-support-vol6/social-support>

https://en.wikipedia.org/wiki/Social_support

If you have any queries, please don't hesitate to contact.

For more support:

Samaritans: <https://www.samaritans.org/how-we-can-help-you/contact-us>

Mind: <https://www.mind.org.uk/information-support/helplines/>



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**Faculty of Medicine & Health Sciences
Research Ethics Committee**

c/o Faculty PVC Office
School of Medicine Education Centre
B Floor, Medical School
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16 March 2018

Sophie Bull

MSc Forensic and Criminological Psychology Student
C/o Dr Vincent Egan
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Dear Ms Bull

Ethics Reference No: 241-1802 – please always quote	
Study Title: The mediating influence of perceived social support on the relationship between personality and risk-taking and anti-social behaviours	
Chief Investigator/Supervisor: Dr Vincent Egan, Associate Professor, Director, Forensic Psychology Programmes, Centre for Forensic and Family Psychology, Division of Psychiatry and Applied Psychology, School of Medicine.	
Lead Investigators/student: Sophie Bull, MSc Forensic and Criminological Psychology Student	
Type of Study: MSc, internet mediated research	
Proposed Start Date: 01/01/2018	Proposed End Date: 01/08 xxmths
No of Subjects: 146	Age: 18-65 years

Thank you for submitting the above application and the following documents were received:

- FMHS REC Application form and supporting documents version 1.0: 28.01.2018

These have been reviewed and are satisfactory and the study has been given a favourable opinion.

A favourable opinion has been given on the understanding that:

1. The protocol agreed is followed and the Committee is informed of any changes using a notice of amendment form (please request a form).
2. The Chair is informed of any serious or unexpected event.
3. An End of Project Progress Report is completed and returned when the study has finished (Please request a form).

Yours sincerely

Professor Ravi Mahajan

Chair, Faculty of Medicine & Health Sciences Research Ethics Committee

Title Page

Personality, Social Support and Risk-Taking/Antisocial Behaviour: A study of their Interactions.

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Personality, Social Support and Risk-Taking/Antisocial Behaviour: A study of their Interactions.

Abstract

Substantial literature suggests there is a relationship between core dimensions of personality, Dark Triad traits of personality, and risk-taking and antisocial behaviour. Social support has also been implicated as a protective factor against anti-social behaviour, risk-taking, and recidivism. This study aims to extend this previous research by investigating whether social support moderates the relationship between personality and behaviour. Self-report questionnaire scales were used to measure core dimensions of personality, Dark Triad Traits of personality, perceived social support, risk-taking behaviour, and antisocial behaviour. Using a sample of 439 persons from the general population, regression analyses in the current research demonstrate risk-taking behaviour is predicted by psychopathy, Machiavellianism, emotionality, and openness, whereas antisocial behaviour is predicted by psychopathy, openness, emotionality, and honesty-humility. Analyses show the perceived level of social support from family is weakly associated with less antisocial but not risk taking behaviour. No interaction effects were found for social support and personality on the outcome variables, suggesting no moderation effects. Results are discussed in relation to existing literature and limitations and avenues for future research are considered.

(Abstract Word Count: 176)

Keywords: Personality, Dark Triad, HEXACO, Antisocial, Risk, Behaviour, Social Support

Declarations of Interest: None

1. Introduction

There is a well-established link in the literature between personality traits and risk-taking and antisocial behaviour. The present research aims to extend this knowledge to investigate whether an individual's level of perceived social support influences this relationship.

The Dark Triad (DT; Paulhus and Williams, 2002), describes three personality constructs: Machiavellianism, Narcissism, and Psychopathy. Machiavellianism is a manipulative personality trait whereby individuals are likely to lack empathy, be callous, and be deceitful and exploitative for personal gain. Narcissism is characterized by a perceived grandiose sense of self, accompanied by feelings of superiority and entitlement. Psychopathy reflects high impulsivity and thrill-seeking, callousness, low empathy, and low anxiety (Paulhus & Williams, 2002; Rauthmann & Kolar, 2012; Jones & Paulhus, 2014). Psychopathy can be divided into primary and secondary types. Primary psychopathy refers to dispositional components, such as callousness and lack of affect, whereas secondary psychopathy refers to social deviance and hostility (Skeem, Johansson, Andershed, Kerr, & Louden 2007). The dark triad measure used in the present study reflects secondary psychopathy more than primary as the measure highlights impulsivity (Jones & Paulhus, 2014).

The DT traits can be mapped onto core personality traits, for example the Big Five. Jakobwitz and Egan (2006) investigated the DT in regard to these five core dimensions: Neuroticism, Openness, Extraversion, Agreeableness, and Conscientiousness. The research illustrated the DT traits were related to low agreeableness, a finding replicated in many other studies also (Paulhus & Williams, 2002; Muris, Merckelbach, Otgaar & Meijer, 2017). Additionally, psychopathy is correlated with low conscientiousness and high neuroticism, and narcissism is associated with extraversion and openness (Jakobwitz & Egan, 2006; Muris et al, 2017).

The HEXACO model extends The Big Five model of personality to incorporate a sixth personality trait, Honesty-Humility. Consequently, the personality dimensions described in the HEXACO model are Honesty-Humility (HH), Emotionality (Em), Extraversion (Ex), Agreeableness (A), Conscientiousness (C), and Openness to Experience (O). The HEXACO model has also been investigated in relation to the DT traits. Lee and Ashton (2005) report all DT traits to be associated

with low honesty-humility, an association replicated in other research (Pailing, Boon, & Egan, 2014; Meere & Egan, 2017; Muris, Merckelbach, Otgaar, & Meijer, 2017). Lee and Ashton (2005) also report extraversion to be correlated with narcissism when using both the five-factor model and HEXACO model. This result was replicated by Meere and Egan (2017) who additionally report a negative correlation between emotionality and agreeableness for all DT traits, and a further association between low conscientiousness and psychopathy.

Collectively, this research indicates that the DT have associations with the core dimensions of normal personality. Consequently, the present research seeks to measure these core traits in addition to the DT traits. Research has suggested that, in comparison to the Big 5 model, more variance in the DT traits was accounted for by the HEXACO model (Book, Visser, & Volk, 2015). Furthermore, it has been stated in research that the HEXACO model better explains risky behaviour (Burtaverde, Chraif, Anitei, & Dumitru, 2017). For these reasons, the present research explores personality using the HEXACO measure, in addition to the dark triad.

Risk-taking behaviour can be defined as partaking in behaviour which has a possibility of a negative outcome (Boyer, 2006). Previous literature suggests a link between the core dimensions of personality and risk-taking behaviour. De Vries, de Vries, and Feij (2009) report sensation-seeking and risk-taking are significantly positively related to openness and extraversion but negatively related to conscientiousness, honesty-humility, and emotionality. Similarly, Burtaverte et al (2017) report low honesty-humility, agreeableness, and conscientiousness predict risky driving behaviour and higher speed driving. Using the Big 5 model of personality, Nicholson, Soane, Fenton-O'Creevy, & Willman (2005) also support these relationships finding risk-taking behaviour was predicted by higher scores in extraversion and openness, and low scores in neuroticism, agreeableness, and conscientiousness. These findings occur across a number of risk taking domains (recreational, safety, social, career, finance, and health). Nicholson et al (2005) proposed an explanation for this pattern of personality and risk taking in which extraversion and openness provide a motivation for seeking engagement in risk, low neuroticism and agreeableness block emotional reactions or guilt, and low conscientiousness allow the individual to deviate from social norms.

DT traits have also shown relationships with risk-taking behaviour. Crysel, Crosier, and Webster (2013) found sensation-seeking to be positively correlated with all three subscales of the DT, and also reported the DT traits to be positively associated with behavioural evidence such as higher blackjack bets and steeper temporal discounting. The authors proposed narcissism as most important in this relationship. From the research mentioned so far it is reasonable to assume there is a relationship between risk-taking behaviour and an individual's personality traits, including both core personality and DT traits.

Although the terms antisocial behaviour and risk-taking overlap, antisocial behaviour can be defined in broad terms as behaviour causing others harm or offence (Millie, 2008), whereas not all risk to self leads to direct harm for others. Low agreeableness and low conscientiousness have been implicated in antisocial behaviour by numerous researchers. Low agreeableness and conscientiousness have been associated with weapon carrying, aggression, shoplifting, and moral disengagement (Barlas & Egan, 2007; Miller & Lynam, 2001; Jones, Miller, & Lynam, 2011; Egan, Hughes, & Palmer, 2015). Jones, Miller, and Lynam (2011) found although both low conscientiousness and agreeableness were related to increased aggression, conscientiousness was associated to a lesser degree. Pailing, Boon, and Egan (2014) also report an association between low agreeableness and violence. Additionally, higher neuroticism and extraversion have been associated with some antisocial behaviours (Miller & Lynam, 2001; Jones, Miller, & Lynam, 2011).

Research regarding antisocial behaviours and personality has primarily focused on the DT. Literature shows a link between aggression and the DT, but also reported the predominant nature of psychopathy in this arrangement (Jones & Paulhus, 2010). Muris et al (2017) used a meta-analytic method to demonstrate positive correlations between Machiavellianism and psychopathy to aggression and delinquency. They showed the same effect, to a lesser degree with narcissism. Reidy, Zeichner, & Siebert (2011) found unprovoked aggression was predicted by psychopathy, and Chabrol, Leeuwen, Rogers, and Sejourne (2009) found psychopathy, but not narcissism or Machiavellianism, related to delinquency. Jones and Paulhus (2010) claim that different patterns of the DT traits result in different aggression responses. For example, narcissistic individuals are often more aggressive after an ego-threat, whereas psychopathic individuals are more aggressive impulsively after physical

provocation. They also speculate Machiavellianism might result in aggression if it is beneficial for the individual personally in the longer term.

Psychopathy and Machiavellianism are also predictive of violence (Pailing, Boon & Egan, 2014). However, Westhead and Egan (2015) report it is only psychopathy that influences violence and neither Machiavellianism nor narcissism have an impact. Furthermore, individuals who have higher levels of DT traits were reported as more likely to engage in sexual harassment (Zeiger-Hill, Besser, Morag, & Campbell, 2016), engage in acts of animal cruelty (Kavanagh, Signal, & Taylor, 2013), and be counterproductive at work (O’Boyle, Forsyth, Bankc, & McDaniel 2011). DT traits also show a relationship with adult bullying behaviour, with psychopathy being most strongly correlated with bullying behaviours followed by Machiavellianism then narcissism (Baughman, Dearing, Giammarco, & Vernon, 2012).

Additionally, psychopathy is also correlated with intimate partner violence (Carton & Egan, 2017), antisocial entertainment preferences, for example aggressive films and violent games (Williams, McAndrew, Learn, Harms, & Paulhus, 2001), and violent recidivism (Book et al 2015).

Although the aforementioned evidence implicates all DT traits to an extent for antisocial behaviours, researchers often highlight the dominance of psychopathy (Muris et al 2017). Most research finds the strongest association with DT and antisocial outcomes to be psychopathy, and authors of a meta-analysis note psychopathy might be the key trait that accounts for the socially negative elements of narcissism and Machiavellianism (Muris et al, 2017). Furthermore, several studies, as previously mentioned, only find associations for certain outcomes with psychopathy. Rauthmann and Kolar (2012) describe narcissism as the least important DT dimension in terms of associations with antisocial behaviour, an observation also made by other researchers (for example, Baughman et al 2012).

Social support is popularly regarded as a protective factor against antisocial and risk behaviour. The construct can be defined as “the perceived and actual amount of instrumental and expressive/emotional supports that one receives from primary relationships, social networks, and communities” (Hochstetler, DeLisi, & Pratt, 2010, pp 589). Cullen’s theory of social support (1994) states social support might serve as a protective factor to stop someone engaging in criminal or

deviant behaviour. Wright, Cullen, and Miller (2001) found social support from family was positively related to moral beliefs. Furthermore, Hochstetler et al (2010) found individuals on parole had fewer hostile feelings when they have more social support both from family and friends. This social support might be influential in reducing reoffending as they also state hostile thoughts are related to recidivism. Michael and Ben-Zur (2007) found adolescents with positive relationships with their parents were less risk-taking.

In summary, it is evident that the DT traits, especially psychopathy, are related to antisocial outcomes and risk-taking behaviour. Furthermore, there is evidence to show core dimensions of personality can also be associated with such outcomes, in addition to being related to the DT traits themselves. There is also research to suggest increased social support might act as a buffer against these negative outcomes. Consequently, the present research aims to replicate the relationships between personality and anti-social and risk-taking behaviour, exploring both the DT traits and core dimensions of personality measured by HEXACO. Subsequently, the current research will extend this and investigate whether an individual's level of perceived social support moderates these relationships. This research investigates perceived social support specifically because it is arguably a more meaningful construct to the individual than objective support, and therefore more likely to influence behaviour (Swickert, Hittner, Harris, & Herring, 2002).

Based on the aforementioned literature it is predicted that:

increased anti-social behaviour will be negatively associated with the personality dimensions of honesty-humility, agreeableness, and conscientiousness, and positively associated with the DT traits, particularly psychopathy.

it is also predicted risk-taking behaviour will be positively associated with extraversion, openness, and the DT traits and negatively associated with honesty-humility, emotionality, agreeableness, and conscientiousness.

Finally, it is hypothesized higher levels of perceived social support will moderate this relationship, having a buffering effect.

2. Methods

2.1 Participants

A total of 439 participants were recruited; 44.6% females, 53.8% males, and 1.6% other. The mean age for the sample was 27.95 (SD=9.60), and the years spent in education ranged from 11 to 25 (mode = 16). Participants between 18 and 65 years old were recruited from the general population using opportunity sampling through an online link, which was advertised on social media websites (for example, Facebook and Reddit), and participant recruitment platforms (for example, Hanover online research (<https://psych.hanover.edu/research/exponnet.html>) and the Inquisitive mind website (<http://www.in-mind.org/content/online-research>)). This meant a diverse sample from the general population was recruited.

Given an effect size of 0.1, an error probability of 0.05, and a sought power of 0.95, with 12 predictor variables, a G-Power analysis suggested a sample size of 270 participants was required (Faul, Erdfelder, Lang & Buchner, 2007). Warner (2008) recommended a minimum number of $N=50+8k$ (where k is number of predictor variables) for regression analyses. With 12 variables, this equation suggests this study requires 146 participants. The obtained sample size of 439 greatly exceeds these minimal criteria.

2.2 Measures

In the existing literature, all psychometric measures used have demonstrated validity and reliability.

2.2.1 HEXACO-60 (Ashton & Lee, 2009)

The HEXACO-60 measures 6 dimensions of personality: Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience. This measure has 60 items, 6 10-item subscales for each of the dimensions. Each item is rated on a Likert scale between 1 and 5 representing the agreeability of the participant to the statement where '1' is 'strongly disagree', and '5' is 'strongly agree'.

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

The SD3 is a shortened measure for the Dark Triad traits: Machiavellianism, narcissism, and psychopathy. In total there are 27 items comprising 3 subscales of 9 items each. Participants rate each item on a 5-point Likert scale to reflect their agreeability with the statement ('1' = 'strongly disagree', '5' = 'strongly agree').

2.2.3. The Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet & Farley, 1988)

The MSPSS has 3 subscales measuring perceived social support from family, friends, and a 'special person'. There are 12 items in total, and participants are asked to rate each item on a 5-point Likert scale between 'strongly disagree' to 'strongly agree' (1-5). In this study a 13th item was added asking participants to specify the relationship the participant had to the special person.

2.2.4 Self-Report Early Delinquency (SRED; Charles & Egan, 2005; Moffit & Silva, 1988)

The SRED explores an individual's engagement in anti-social behaviour. Each item asks whether participants have engaged in a specific anti-social act 'never', 'once', or 'more than once'. The scale was initially composed by Moffit and Silva (1988), but this study used a modified UK version (Charles & Egan, 2005). Charles and Egan's measure comprised of 58 items, but for the present research this was shortened to 25. Additionally, some of the wording in the items were changed, for example the inclusion of the workplace in addition to school to tailor it more towards adults (see Appendix A).

2.2.5 Risk Taking Index (RTI; Nicholson, Soane, Fenton-O'Creevy, & Willman, 2005)

The RTI measures an individual's engagement in risk-taking across 6 domains: recreational, health, career, financial, social, and safety. It is composed of 6 items, each relating to a different domain. The questionnaire is repeated twice, once for participants to answer whether they engaged in the risk-behaviour in their past, and second to answer the same questions for the present. The items

are rated on a scale with responses ‘never’, ‘rarely’, ‘quite often’, ‘often’, ‘very often’. Higher scores on this scale represent more engagement in risk-behaviour.

2.3 Procedure

The research obtained ethical approval from the Faculty of Medicine and Health Sciences Research Ethics Committee at the University of Nottingham. Participants completed the anonymous online questionnaire through Bristol Online Survey. Participants were asked to give informed consent prior to the questionnaire and subsequently completed demographic information questions (age, gender, and years in education) and the items in the aforementioned measures. The questionnaires were presented in the following order: HEXACO-60, SD3, MSPSS, SRED, and finally RTI. Prior to each measure, participants were given instructions. Participants were shown a debrief page after completion.

2.4 Data Analysis

Data was exported from the survey tool used into SPSS. After reversing the necessary items, scores for the personality items (HEXACO and DT) were computed such that each participant had a mean score for each personality dimension. Similarly, mean scores were calculated for each participant on RTI scores (total and domains) and MSPSS scores (total and subscales). Then each participant had a SRED score calculated, which was the sum of scores. Means, standard deviations, and Cronbach’s reliability of the scales and subscales were computed (Table 1). Cronbach’s alpha reveals all subscales satisfactorily to highly reliable ($>.7$ to $>.9$).

Correlational analyses were computed to determine basic relationships between variables. Next, regression analyses were conducted to identify significant predictor variables. Using the macro PROCESS for SPSS (Hayes, 2013), moderation analyses were calculated to determine if there was a protective moderation influence of social support on the relationship between personality and behaviour.

	Mean	SD	Cronbach's Alpha
HEXACO			
Honesty-Humility	3.41	0.65	0.75
Emotionality	3.05	0.77	0.83
Extraversion	2.99	0.74	0.84
Agreeableness	3.11	0.67	0.80
Conscientiousness	3.49	0.62	0.77
Openness	3.56	0.67	0.78
SD3			
Machiavellianism	3.13	0.61	0.77
Narcissism	2.52	0.62	0.74
Psychopathy	2.31	0.62	0.72
MSPSS (total)	3.72	0.84	0.91
Family	3.54	1.09	0.90
Friends	3.76	0.97	0.92
Significant Other	3.85	1.16	0.95
SRED	37.69	8.86	0.89
RTI (total)	2.15	0.69	0.83
Recreational	2.53	1.32	0.90
Health	2.82	1.26	0.85
Career	1.66	0.91	0.84
Financial	1.66	0.85	0.89
Safety	2.36	1.21	0.87
Social	1.88	1.00	0.87

Table 1: Means, Standard Deviations, and Cronbach's Alpha for all variables

3. Results

Before employing main analysis tests, the data were checked for normality. Results revealed MSPSS scores were negatively skewed in all subscales, and SRED and RTI scores were positively skewed. Efforts were made to correct normality using log and square root transformations, however SRED scores remained skewed. As a result, alternative non-parametric and more robust methods were employed (Field, 2013).

3.1 Correlation

In order to establish preliminary associations between measured variables, correlations were computed. The subsequent correlational analyses utilized non-parametric alternatives for analyses involving the skewed measures. First, Pearson's coefficient correlations for the DT traits and HEXACO dimensions of personality were calculated (Table 2). Second, Spearman's Rho correlations were conducted for the relationships between the DT traits, HEXACO dimensions, and the risk-taking index (total risk and the 6 domains). The same correlations were computed then replacing RTI with

SRED (Table 3). Third, Spearman's correlations were calculated for the associations between social support and antisocial and risk behaviour (Table 4). Finally, Spearman's correlations were calculated for the associations between social support and personality dimensions (Table 5).

The DT traits showed significant correlations to various HEXACO dimensions. All DT traits are significantly negatively correlated to Honesty-Humility, Agreeableness, and Emotionality. Additionally, psychopathy is negatively correlated to conscientiousness, and narcissism is positively correlated to extraversion.

There are numerous significant correlations between personality domains and risk and antisocial behaviours (detailed in Table 3). Psychopathy is the strongest correlate of antisocial and risk taking behaviour with a positive correlation. Agreeableness was the only personality domain that was not significantly related to either risk or antisocial behaviour, however, Honesty-Humility has significant correlations across numerous risk taking domains and antisocial behaviour. Emotionality was also significantly negatively correlated to risk taking and antisocial behaviour. It appears psychopathy, honesty-humility, and emotionality are the strongest correlates across the board. Machiavellianism, narcissism, and openness were all positively correlated to antisocial behaviour and some domains of risk taking behaviour. Conscientiousness was the same but negatively correlated. Extraversion was positively significantly correlated to risk taking but not to antisocial behaviour.

In regard to correlations between social support and risk taking and antisocial behaviour, it appears family was the strongest correlate in that more family support was related to less engagement in risk and antisocial behaviour. Support from friends also had some significant negative correlations for risk taking domains. Support from a significant other is largely insignificant.

	HH	Em	Ex	A	C	Op
Mach	-0.52**	-0.15**	-0.06	-0.33**	-0.03	-0.01
PP	-0.48**	-0.28**	0.08	-0.31**	-0.31**	-0.05
Narc	-0.45**	-0.21**	0.54**	-0.18**	-0.04	-0.03

Table 2: Correlations (Pearson's r) between HEXACO dimensions and DT traits

* $p < .05$ (two-tailed)

** $p < .01$ (two-tailed)

	HH	Em	Ex	Ag	C	O	Mach	Narc	PP
RTI	-0.19**	-0.28**	0.15**	-0.07	-0.14**	0.14**	0.12*	0.20**	0.45**
<i>(total)</i>									
<i>Social</i>	-0.12*	-0.17**	0.24**	-0.11*	-0.03	0.15**	0.09*	0.28**	0.28**
<i>Safety</i>	-0.15**	-0.29**	0.12*	-0.02	-0.10*	0.03	0.09	0.16**	0.40**
<i>Recreati</i>	-0.05	-0.33**	0.30**	0.05	-0.01	0.09	0.01	0.19**	0.27**
<i>onal</i>									
<i>Career</i>	-0.11*	-0.15**	0.02	0.00	-0.11*	0.07	0.10*	0.13**	0.24**
<i>Health</i>	-0.17**	0.01	-0.09	-0.08	-0.18**	0.10*	0.04	-0.04	0.20**
<i>Financia</i>	-0.23**	-0.13**	0.04	-0.06	-0.22**	0.04	0.16**	0.20**	0.37**
<i>l</i>									
SRED	-0.25**	-0.25**	0.08	-0.09	-0.16**	-0.18**	0.19**	0.14**	0.45**

Table 3: Correlations (Spearman's) between personality (HEXACO & DT) and risk and anti-social behaviour (RTI & SRED)

* $p < .05$ (two-tailed)

** $p < .01$ (two-tailed)

	MSPSS Total	MSPSS Family	MSPSS Friends	MSPSS Sig. Other
RTI	-0.11*	-0.11*	-0.10*	-0.05
<i>(total)</i>				
<i>Social</i>	-0.02	-0.06	-0.01	0.05
<i>Safety</i>	-0.08	-0.06	-0.08	-0.08
<i>Recreational</i>	0.06	0.05	0.01	0.02
<i>Career</i>	-0.17**	-0.14**	-0.21**	-0.08
<i>Health</i>	-0.10*	-0.14**	-0.06	-0.04
<i>Financial</i>	-0.14**	-0.12*	-0.13**	-0.11*
SRED	-0.07	-0.16**	-0.01	-0.01

Table 4: Correlations (Spearman's) between perceived social support (all subscales) and risk taking and antisocial behaviour (RTI & SRED)

* $p < .05$ (two-tailed)

** $p < .01$ (two-tailed)

	MSPSS Total	MSPSS Family	MSPSS Friends	MSPSS Sig. Other
HH	0.08	0.11*	0.08	0.01
Em	0.16**	0.09	0.11*	0.17**
Ex	0.36**	0.30**	0.36**	0.14**
A	-0.01	0.03	0.04	-0.12*
C	0.21**	0.18**	0.11*	0.21**
Op	0.00	-0.01	0.04	0.03
Mach	-0.15**	-0.11*	-0.13**	-0.07
Narc	0.04	0.03	0.07	-0.05
PP	-0.18**	-0.22**	-0.10*	-0.15**

Table 5: Correlations (Spearman's) between perceived social support (all subscales) and personality (HEXACO & DT)

* $p < .05$ (two-tailed)

** $p < .01$ (two-tailed)

3.2 Factor Analysis

To understand the structure of the variables measured in the present study, a principal components analysis was conducted with oblique rotation. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.68 and Bartlett's test of sphericity was significant $\chi^2(66) = 1346.72$, $p < .001$, suggesting correlations were sufficient for a principal component analysis (Field, 2013). After conducting a parallel analysis (O'Connor, 2000), factors with eigenvalues above 1.28 were extracted. The three components identified explained a total of 54.0% of the variance. Table 6 shows the factor loadings after rotation.

The DT traits and HEXACO dimensions of Honesty-Humility and agreeableness loaded onto the first factor; the DT traits positively and the HEXACO dimensions negatively. The DT traits of psychopathy and narcissism show split loadings as Narcissism also loads onto the second factor, which appears to be a social factor, where extraversion, conscientiousness and perceived social support are also positively loaded. Psychopathy also positively loads onto the third factor alongside risk and anti-social behaviour, which also has a negative loading for emotionality. The split loading for psychopathy seems to represent the difference between primary and secondary psychopathy. The third factor appears to represent a more behavioural antisocial factor, so this might lead us to assume secondary psychopathy is represented here.

	Component		
	1	2	3
HH	<u>-.79</u>	-.06	-.11
Ag	<u>-.69</u>	.03	.22
Mach	<u>.68</u>	-.10	.10
PP	<u>.60</u>	-.07	<u>.50</u>
Op	-.37	-.01	.37
Ex	.03	<u>.86</u>	.29
MSPSS (total)	-.01	<u>.64</u>	-.21
Narc	<u>.50</u>	<u>.57</u>	.30
C	-.21	<u>.41</u>	-.19
RTI (total)	.08	-.06	<u>.76</u>
SRED	.16	-.12	<u>.73</u>
Em	.11	-.13	<u>-.68</u>

Table 6: Pattern Matrix of Principal Component Analysis with oblique rotation for personality variables (HEXACO & DT), social support, risk-taking and antisocial behaviour. Factor loadings above 0.4 are underlined.

3.3 Regression

Before performing a regression analysis, data were checked for violations of assumptions. Collinearity statistics and inspection of correlations revealed that the multicollinearity assumptions were met (variance inflation factor < 10 and tolerance > 0.2). Assumptions of normality of residuals, homoscedasticity, and linearity were also met illustrated by inspection of generated plots. The Durbin-Watson statistic was also within the accepted range, so the assumption of independent errors was also met.

Two four stage hierarchical regressions were computed. The first was conducted with anti-social behaviour (SRED) as the outcome, and the second with risk (RTI total) as the outcome. At the first stage demographics were entered (age, sex, education). The 6 core dimensions of personality were entered in stage two of the regression, followed by the DT traits at stage 3. At stage 4 perceived social support was added to the model. Due to some non-normality within some of the predictor

variables 95% bias corrected and accelerated confidence intervals were calculated for a more robust regression (Efron & Tibshirani, 1993; Field, 2013).

Regression statistics for output SRED are summarized in Table 7. At stage one, this regression indicates 8.6% of the variance for the outcome variable of antisocial behaviour is accounted for by demographic information ($F(3, 426) = 13.30, p < .001$). At stage two the regression reveals that HEXACO personality traits contribute significantly to the model ($F(6, 420) = 11.52, p < .001$) accounting for an additional 12.9% of the variance in anti-social outcome. At the third stage an additional 10.0% of the variance is accounted for by the addition of the DT traits to the model ($F(3, 417) = 20.22, p < .001$). Finally, the addition of social support to the model explained an additional 1.0% of the variance, a non-significant result ($F(3, 414) = 2.10, p = .100$). With all predictors entered into the model, 32.5% of the variance in the outcome variable of anti-social behaviour is accounted for.

	B	SE B	Standardized Beta	t-statistic	p
Step 4					
Constant	26.44 (12.57, 40.68)	7.10		3.71	.001
Age	0.11 (0.04, 0.19)	0.04	.11	2.68	.006
Sex	0.77 (-0.86, 2.42)	0.80	.05	0.96	.352
Education	0.06 (-0.18, 0.32)	0.13	.02	0.48	.606
Honesty-Humility	-1.75 (-3.10, -0.54)	0.73	-.13	-2.31	.016
Emotionality	-1.46 (-2.55, -0.40)	0.59	-.13	-2.55	.015
Extraversion	0.48 (-0.79, 1.68)	0.66	.04	0.69	.445
Agreeableness	0.29 (-0.99, 1.53)	0.65	.02	0.47	.660
Conscientiousness	-0.65 (-2.00, 0.74)	0.69	-.05	-0.98	.372
Openness	2.05 (0.78, 3.40)	0.62	.15	3.55	.002
Machiavellianism	-0.32 (-1.77, 1.01)	0.73	-.02	-0.43	.664

Narcissism	-1.21 (-3.12, 0.50)	0.87	-.09	-1.47	.170
Psychopathy	5.90 (4.46, 7.46)	0.81	.42	7.28	.001
MSPSS family	-0.89 (-1.65, -0.14)	0.38	-.11	-2.28	.025
MSPSS friends	0.56 (-0.37, 1.62)	0.47	.06	1.20	.242
MSPSS sig. other	0.35 (-0.33, 1.05)	0.34	.05	0.97	.290

Table 7: Regression statistics for the hierarchical multiple regression for output SRED, with 95% bias corrected and accelerated confidence intervals reported in parentheses. Confidence intervals, standard errors, and two tailed significance based on 1000 bootstrap samples.

Regression statistics for the RTI total are summarized in Table 8. At stage one, this regression indicates 11.2% of the variance for the outcome variable of risk behaviour is accounted for by demographic information ($F(3, 427) = 18.01, p < .001$). At stage two the regression revealed that HEXACO personality traits also contribute significantly to the model ($F(6, 421) = 8.30, p < .001$) accounting for an additional 9.4% of the variance in risk outcome. At the third stage an additional 8.7% of the variance is accounted for by the addition of the DT traits to the model ($F(3, 418) = 17.10, p < .001$). Finally, the addition of social support to the model explains a further 0.6% of the variance, an insignificant result ($F(3, 415) = 1.10, p = .351$). With all predictors entered into the model a total of 30.0% of the variance in the outcome variable of risk behaviour is accounted for.

	B	SE B	Standardized Beta	t-statistic	P
Step 4					
Constant	1.66 (0.43, 2.87)	0.60		2.94	.008
Age	0.00 (0.00, 0.01)	0.00	.06	1.42	.128
Sex	0.16 (0.03, 0.30)	0.07	.12	2.55	.015
Education	0.01 (-0.01, 0.03)	0.01	.06	1.34	.147
Honesty-Humility	-0.08 (-0.19, 0.04)	0.06	-.07	-1.30	.233
Emotionality	-0.12 (-0.22, -0.01)	0.05	-.13	-2.59	.019

Extraversion	0.10 (-0.01, 0.20)	0.06	.11	1.83	.065
Agreeableness	-0.02 (-0.12, 0.09)	0.05	-.02	-0.36	.752
Conscientiousness	-0.04 (-0.15, 0.08)	0.06	-.03	-0.69	.522
Openness	0.10 (0.01, 0.19)	0.05	.10	2.22	.022
Machiavellianism	-0.17 (-0.30, -0.05)	0.06	-.15	-2.88	.004
Narcissism	-0.03 (-0.15, 0.09)	0.06	-.03	-0.49	.605
Psychopathy	0.44 (0.30, 0.58)	0.07	.40	6.94	.001
MSPSS family	0.00 (-0.06, 0.06)	0.03	-.00	-0.06	.947
MSPSS friends	-0.06 (-0.15, 0.02)	0.04	-.09	-1.69	.118
MSPSS sig. other	0.01 (-0.05, 0.06)	0.03	.02	0.32	.771

Table 8: Regression statistics for the hierarchical multiple regression for output RTI total, with 95% bias corrected and accelerated confidence intervals reported in parentheses. Confidence intervals, standard errors, and 2-tailed significance (p) based on 1000 bootstrap samples.

3.4 Moderation effects

As perceived social support from family significantly contributed to explaining antisocial behaviour in the regression analysis, further analyses were carried out to identify whether this support had a buffering moderator effect on troublesome personality traits. Using the macro PROCESS for SPSS any statistically significant interactions on the outcome SRED were identified. Each personality construct was entered as the predictor in turn with the dependent variable of SRED and MSPSS family as a moderator. The only significant interaction effect was found between Machiavellianism and family social support. ($b=-1.15$, 95% CI $[-2.31, 0.00]$, $t=-1.96$, $p=.005$). However, when the other personality dimensions were entered as covariables in the model to control for their effects, this interaction was no longer significant. This shows that when controlling for other variables, there is no interaction effect and so social support did not appear to act as a moderator on the relationship.

4. Discussion

The current research aimed to replicate findings from previous studies between personality and risk-taking behaviour and extend it by looking at the effect of an often referred to ‘protective’ factor: social support.

Correlations between HEXACO dimensions of personality and dark triad traits replicate previous research finding all DT traits to be significantly negatively associated with honesty-humility, emotionality, and agreeableness. Furthermore, a positive relationship was demonstrated with extraversion and narcissism, and a negative relationship between conscientiousness and psychopathy. This reinforces previous literature that have identified the same relationships (Lee & Ashton, 2005; Pailing, Boon, & Egan, 2014; Meere & Egan, 2017).

This study found risk-taking was positively associated with extraversion and openness, and negatively correlated to honesty-humility, emotionality, and conscientiousness. This is in line with previous findings of similar correlations (de Vries et al, 2009; Nicholson et al, 2005). However, previous research found correlations between low agreeableness and risk (Burtaverte et al 2017), which the present study did not. Current findings also demonstrate significant positive correlations between all DT traits and risk-taking similarly to Crysel et al (2013).

Regression analyses revealed high psychopathy to be the most significant contributor to risk-taking variance, followed by low Machiavellianism, low emotionality, and high openness, partially supporting our predictions. This contrasts with Crysel et al (2013) who report narcissism to be the most important trait for risk. Furthermore, the effect of Machiavellianism is in the opposite direction to previous research and our predictions. Also noteworthy are differences in the correlations for the different risk domains. Although broadly similar, differences are evident. Perhaps this demonstrates the difference between positive risk taking (e.g. recreational activities) and arguably more negative risk-taking (e.g. gambling, speeding). In line with this proposed explanation is that correlations for psychopathy and risk are stronger in domains of safety and financial risk, which could be seen to represent more aversive risks (e.g. gambling, fast risky driving), and weaker in the recreational domain. Similarly, Nicholson et al. (2005) suggested that people do not have a generalized tendency for risk, but it is split into domains.

The results partially support the previous literature and our predictions concerning the relationship between antisocial behaviour and personality. Correlational analyses found anti-social behaviour is negatively correlated to honesty-humility, emotionality, and conscientiousness, and positively correlated to openness and all the DT traits, the strongest correlation being for psychopathy. Similarly, previous literature has associated low conscientiousness with aggression, antisocial behaviour, and weapon carrying (Jones et al, 2011; Barlas & Egan, 2017). However, contrastingly previous research report relationships between low agreeableness and high extraversion to violence and antisocial behaviour (Pailing et al, 2014; Miller & Lynam, 2001). Perhaps the correlation of agreeableness found in previous studies is accounted for in this study by the relationship of the outcomes to honesty-humility. Differences in results could also be because different measures for antisocial outcomes were employed across different studies.

The regression analysis illustrated that psychopathy again contributes the most to explaining the variation in the antisocial outcome in the model, followed by high openness, low emotionality, and low honesty-humility. This is in line with other researchers who emphasize the importance of psychopathy above other traits (Muris et al 2017). Additionally, results demonstrate the weakest correlation within the DT traits for antisocial behaviour is narcissism, again consistent with the existing literature (Pailing et al 2014; Rauthmann & Kolar, 2012). Moreover, the principal components analysis suggests risk-taking and antisocial behaviour load onto the same factor as psychopathy and emotionality, reinforcing the importance of these personality traits in such behaviour.

The current research aimed to extend these findings to explore the role of perceived social support on these relationships between personality and risk-taking and antisocial behaviour. Initial correlational analyses between risk-taking and support revealed the total risk-taking score was negatively weakly related to perceived social support from family and friends. However, when split into each domain, the correlations only stood for career, health, and financial domains. Similarly, for antisocial behaviour a significant but weak negative correlation was found for perceived social support from family. No significant correlations were found for friends or a 'special person'.

Inspecting the principal components analysis also highlights that social support is not grouped with antisocial or risk-taking behaviour, but loaded onto a different factor alongside extraversion, narcissism, and conscientiousness. This might suggest social support is not as important in influencing antisocial and risk-behaviour as previous studies would lead us to believe.

In order to see if social support significantly contributed to explaining risk-taking or antisocial behaviour, the variables were put into a regression analysis. Results demonstrate the only significant social support predictor was an influence of family on engagement in antisocial behaviour, where more family support was related to less engagement in antisocial behaviour. This suggests family support might be a protective factor in antisocial behaviour, in line with previous research demonstrating the positive effects of family support, for example Hochstetler et al (2010). However, it does not appear to be a strong finding as the correlations are below 0.2 in the correlational analyses.

This study contrasts previous research that report family support reduces risk-taking (Michael & Ben-Zur 2007) and researchers who suggest a role of friends (Hochstetler et al 2010; Cullen, 1994). It is plausible the null result for social support and risk-taking is due to the mixture between arguably positive and negative risk taking within the measure, perhaps social support only plays a role for negative risk taking. This is in line with the correlational analyses that find a significant correlation for the financial domain, but not the recreational domain.

Additionally, the lack of significant results for the friend subscale of perceived social support could be explained by the differential influence of peer group. For example, individuals in a negative peer group who engage in antisocial acts together might score highly on perceived level of social support from friends, however, these friends might encourage engagement in such behaviours. Other individuals might have positive peer influence whereby their friends prevent them engaging in such behaviour. However, because both might rate the level of support as high, these scenarios might balance each other out to produce a null effect. Future research is required to distinguish between the two possibilities. This speculation is supported by Michael and Ben-Zur (2007), who suggest orientation towards peer group was related to increased risk taking due to being a source of temptation and pressure.

Moderation analyses were calculated to determine whether the influence of social support on antisocial behaviour found by the regression analysis acted as a buffer against the effects of antagonistic personality. However, no significant interaction effects were shown between any personality trait and family social support when other personality domains were controlled for. This suggests, social support does not buffer or moderate the influence of personality on antisocial behaviour. There might be a possibility that social support from family has an independent influence on antisocial behaviour. However, further investigation into its role as an independent contributor would be required due to only a small association found in the current study.

The regression models in the analysis for the current research do not account for all the variance in the outcome variables (SRED and RTI). This is likely due to engagement in antisocial and risk behaviour being the consequence of a number of factors. Furthermore, DT traits are sometimes beneficial. For example, Spurk, Keller, and Hirschi (2016) found in a study of employees that narcissism was positively related to salary, and Machiavellianism was positively related to leadership. This suggests, having high levels Machiavellianism and narcissism does not always result in socially aversive outcomes, which might have had an influence on the results. For example, the confidence intervals for the regression model with antisocial behaviour as the outcome indicated an unclear direction in terms of the influence of Machiavellianism and narcissism. It could be speculated the reason for that is that these traits have beneficial influences in some people.

There are several limitations to the current study that should be noted. First, the participants were recruited using opportunity sampling, resulting in only people who are motivated taking part, potentially causing a sampling bias. Second, the research relied on self-report data and therefore there is a possibility of underreporting. Muris et al (2017) cite Book et al (2015) who state individuals with DT traits display underreporting. The study tried to minimize this by ensuring anonymity of participants' responses. A further study might avoid this by measuring risk in an experimental game. The third limitation lies within the scales used. The SRED was designed to measure delinquency in adolescents but the present study used this measure in a sample of adults, therefore replication would be required to confirm the results. Having said this, items within the scale were modified to better suit an adult population, and reliability analyses suggested no problem. Additionally, shortened versions

of the personality measures were chosen for their brevity to reduce boredom and fatigue in participants. Researchers have previously suggested this might reduce the capability of the measure to capture all aspects of a trait (Muris et al 2017), however, statistical analyses in this study suggest high reliabilities of scales. Finally, the antisocial measure asks participants if they have ever engaged in a particular act in their life. This is a static, unchangeable factor, however, personality might be subject to slight changes over time. Therefore, results might be skewed if an individual engaged in an antisocial act years ago and now displays a different pattern of personality to when they engaged in the antisocial behaviour. Furthermore, the level of social support one perceives they have might change in short periods of time, which could also influence the results of the analyses. Zimet et al (1988) state it is possible the meaning of family could change throughout the lifetime. With a sample between 18 and 65 years of age it is conceivable family meant different things to different people.

The present study explored predictors of general antisocial and risk-taking behaviour. The measure used for antisocial behaviour incorporated low scale behaviour (e.g. getting drunk) in addition to more severe antisocial behaviour (e.g. using a weapon in a fight, hurting someone). It might be interesting for future research to separate out the severity of antisocial behaviour in order to see if family support acts as a protective factor at differing severity levels rather than across all. For example, family support might be an important protective factor for more severe behaviour rather than lower level antisocial acts. Furthermore, perhaps social support is more important for some antisocial behaviours but not others, therefore future research could explore specific individual behaviours to extend our understanding of the field.

5. Conclusion

In summary, results from this study show personality dimensions and dark triad traits, namely psychopathy, Machiavellianism, emotionality, and openness, have an influence on risk taking behaviour. Additionally, personality also has an influence on engagement in antisocial behaviour, with results demonstrating an association with psychopathy, openness, emotionality, and honesty-humility. This suggests although antisocial and risk behaviour have unique predictors, they also share common predictors. Similar to the existing literature, it appears the importance of psychopathy for

both risk taking and antisocial behaviour is paramount, and arguably more important than the other personality domains. The results from this study also demonstrate that support from family is weakly associated with engagement in antisocial behaviour, but not associated with risk-taking behaviour. Furthermore, family support appears more influential than friend support for reducing risk. However, although weak but significant relations were found between social support from family and antisocial behaviour, there was no interaction effect with personality. Therefore, it seems the effects of personality traits are not mitigated through social support, but instead that social support might play an independent role. However, the importance of social support can be questioned as even when independently examined the relations were weak.

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Appendix A

Self-Report Early Delinquency (SRED; Charles & Egan, 2005; Moffit & Silva, 1988)

1. Carrying a weapon in case it is needed in a fight (e.g. a knife, chain, or piece of wood)
2. Going around with a group of three or more damaging property or getting into fights
3. Purposely damaging something in a public place (e.g. streets, movie theatres, buses, toilets)
4. Starting a fire where you should not burn anything
5. Purposely damaging a parked car (e.g. breaking an aerial, slashing tyres, scratching paint)
6. Stealing something from an open shop or store (shoplifting).
7. Taking a car or motorcycle for a drive without permission
8. Smoking cannabis (pot, marijuana, hashish)
9. Buying or drinking alcoholic drinks in hotels or any other public place
10. Drinking alcoholic drinks during school/work hours or at lunchtime on a school/work day
11. Getting suspended or expelled/fired from school/work
12. Being absent from school or work without permission
13. Fighting in the street or other place (not fighting at school)
14. Struggling to get away from a police officer
15. Using any kind of weapon in a fight (e.g. knife, chain, broken bottle, rock)
16. Swearing loudly in a public place
17. Purposely littering the street or footpath by smashing bottles or tipping rubbish bins over
18. Purposely damaging property that belongs to a school
19. Painting or writing graffiti words on a wall in a public place
20. Purposely damaging something in a park or public garden
21. Breaking the windows of an empty building
22. Getting drunk
23. Stealing alcoholic drinks from a shop, your parents home, or other place

24. Getting into trouble with your friends, family or school/work because you were drinking alcohol
25. Hitting another young person in a serious effort to hurt them (not a brother or sister)

Executive Summary

This summary is prepared for the charity Nacro, that aims to build stronger communities and reduce crime. This summary aims to provide insight into risk and antisocial behaviour.

Background Information

The Dark Triad traits of personality represent more socially aversive components of personality and include Machiavellianism, Narcissism, and Psychopathy (Paulhus & Williams, 2002). These dark triad traits can be mapped onto core dimensions of normal personality, for example the HEXACO model (Lee & Ashton, 2005). The HEXACO model personality dimensions include: honesty-humility, emotionality, extraversion, agreeableness, conscientiousness, and openness to experience.

Risk-taking is engagement in behaviour probable to result in negative outcomes (Boyer, 2006). Existing empirical literature suggests a relationship between personality, both core dimensions and dark triad traits, and risk-taking behaviour. Risk-taking is illustrated to be positively related to openness and extraversion, but negatively related to conscientiousness, honesty-humility, agreeableness, and emotionality (de Vries, de Vries, & Feij, 2009; Burtaverte, Chraif, Anitie, & Dumitu, 2017). Furthermore, risk-taking behaviour has been reported to be positively related to the three dark triad traits (Crysel, Crosier, & Webster, 2013).

Not all risk behaviour leads to harm to others. However, antisocial behaviour represents behaviour causing others harm (Millie, 2008). Low agreeableness and conscientiousness and high extraversion have been implicated in antisocial behaviour (Pailing, Boon, & Egan, 2014; Miller & Lynam,

2001; Jones, Miller, & Lynam, 2011). Literature also shows a link between antisocial behaviours, including aggression, sexual harassment, and animal cruelty, and the dark triad traits highlighting the predominant role of psychopathy (Jones & Paulhus, 2010; Zeiger-Hill, Besser, Morag, & Campbell, 2016; Kavanagh, Signal, & Taylor, 2013; Muris, Merckelbach, Otgaar, & Meijer 2017).

To summarise thus far, there is a volume of existing literature demonstrating the associations between core dimensions and dark triad traits of personality with antisocial and risk-taking behaviour.

Furthermore, evidence suggests social support is a protective factor for antisocial and risk-taking behaviour. Wright, Cullen, and Miller (2001) found social support from family was positively related to moral beliefs. Additionally, Michael and Ben-Zur (2007) reported adolescents with positive relationships to their parents engaged in less risk-taking.

Rationale

It is evident the dark triad traits and core personality dimensions are related to outcomes of antisocial and risk-taking behaviour. Although less is known about the influence of social support on risk-taking and antisocial behaviour, there is evidence to suggest it may play a protective role. There is however, a lack of literature that investigates a possible interaction between these variables. Therefore, the current study extended existing knowledge by exploring whether social support can buffer the negative effects of personality on behaviour. Understanding protective factors for problematic behaviours is important as it can have implications for reducing antisocial behaviour in the general population

Research Aims

Based on the literature, the current study aimed to replicate the relationships between core dimensions and dark triad traits of personality with antisocial and risk-taking behaviours. In addition, the research aimed to expand current knowledge to investigate whether social support has a moderating influence on the relationships between personality and behaviour.

Methods

Convenience sampling was employed to recruit 439 participants aged 18 to 65 from the general population by advertising on social media platforms. Participants completed an anonymous online questionnaire containing assessments for the variables being tested.

The HEXACO-60 scale (Ashton & Lee 2009) was used to measure individuals core personality dimensions. The Short Dark Triad (Jones & Paulhus, 2014) assessed participant's dark triad traits. Self-report measures were employed for antisocial behaviour (Self-Report Early Delinquency; adapted from Charles & Egan 2005) and risk-taking variables (Risk Taking Index; Nicholson, Soane, Fenton-O'Creevy, & Willman 2005). Finally, the questionnaire measured an individual's level of perceived social support from family, friends, and a significant other (Multidimensional Scale of Perceived Social Support; Zimet, Dahlem, Zimet & Farley, 1988).

Data Analysis and Key Findings

Correlational analyses were conducted to establish preliminary associations. Findings were similar to existing research showing risk-taking and antisocial behaviour to be positively associated with all dark triad traits. Additionally, there was a pattern of associations similar to previous research for the core dimensions of personality and antisocial and risk behaviour. Regression analyses were computed to identify significant predictor variables. Results revealed high psychopathy to be the most significant contributor to risk-taking and antisocial behaviour, as per previous literature (Muris et al 2017). Low Machiavellianism, low emotionality and high openness also predicted risk-taking, whereas high openness, low emotionality and low honesty-humility predicted antisocial behaviour.

Neither the regression nor correlational results replicated previous findings in terms of the contribution of social support. Regression analyses revealed the only significant result was family support being associated with lower engagement in antisocial behaviour. This study's insignificant results contrast previous research that report family support reduces risk-taking (Michael & Ben-Zur 2007) and researchers who suggest a role of friends (Hochstetler et al 2010; Cullen, 1994). Interaction effects were explored to determine if there was a moderation effect, however, no interaction effects were found suggesting perceived social support does not mitigate the influence of personality on behaviour.

Perhaps social support only plays a role for negative risk-taking, therefore the inclusion of both positive (e.g. recreational) and negative (e.g. gambling) risk-taking in this measure might have resulted in the null result.

Furthermore, the insignificant result for friends might be due to a lack of clarity surrounding whether the support received is positive or negative as

positive support might act as protective, whereas negative might not. Further research addressing these two issues might find significant influences of social support.

Implications and Recommendations

This study demonstrates the importance of personality, particularly psychopathy, in engagement in risk or antisocial behaviour. Results also demonstrate that support from family is weakly associated with engagement in antisocial behaviour. This may be an important finding to highlight as this information may aid prevention of individuals engaging in antisocial behaviour if we can strengthen their family relationships. However, the study also leads to the recommendation to not place too much emphasis on social support, as arguably personality traits are more pertinent in their contribution to behaviour.

Word Count - 997

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Personality, Social Support and Risk-Taking/Antisocial Behaviour: A study of their Interactions

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Introduction, Rationale & Aims

- Dark Triad Traits of Personality: Psychopathy (PP), Machiavellianism (Mach), Narcissism (Narc)
- Core Personality Traits: Honesty-Humility (HH), Emotionality (Em), Extraversion (Ex), Agreeableness (A), Conscientiousness (C), and Openness to Experience (Op) - (HEXACO)
- Research demonstrates a relationship between these personality traits (Dark Triad and HEXACO) and antisocial and risk-taking behaviours.
 - (e.g. Miller & Lynam, 2001; Muris, Merckelbach, Otgaar, & Meijer, 2017; Crysel, Crosier, & Webster, 2013; de Vries, de Vries, & Feij, 2009)
- Research implicates social support as a protective factor for antisocial and risk-taking behaviour and recidivism. (e.g. Michael & Ben-Zur, 2007).

Aims:

- To replicate the known relationships between personality traits and antisocial and risk-taking behaviour.
- To extend previous findings to explore if social support has a moderating influence on the relationship between personality and behaviour.

Methods

Participants:

- 439 participants recruited in total from the general population using convenience sampling.
 - (Advertised on social media websites and recruitment platforms).
- Age: 18-65 years, Gender: 53.8% Male, 44.6% Female, 1.6% Other

Procedure:

- Anonymous online questionnaire using Bristol Online Survey.
- Participants gave informed consent prior to the study
- Demographic questions (age, gender, years of education)
- Questionnaires (below) presented
- Participants shown a debrief upon completion

Measures:

- Psychometric measures used: HEXACO-60, The Short Dark Triad (SD3), The Multidimensional Scale of Perceived Social Support, Self-Report Early Delinquency, and The Risk Taking Index.
 - Ashton & Lee, 2009; Jones & Paulhus, 2014; Zimet, Dahlem, Zimet, & Farley, 1988; Charles & Egan, 2005; Nicholson, Soane, Fenton-O'Creevy, & Willman, 2005).

Results

Correlations:

- Dark Triad Traits:
 - Dark Triad Traits significantly positively related to total risk taking and antisocial behaviour (psychopathy = strongest relationships)
- HEXACO
 - Low HH, Em, and C correlated with more engagement in risk taking and antisocial behaviour
 - Ex positively correlated to total risk taking
 - Op positively correlated to risk taking and negatively to antisocial behaviour.
- Social Support:
 - MSPSS family and friends weakly negatively correlated to risk-taking
 - MSPSS family weakly negatively correlated to antisocial behaviour

Regressions:

- Predictors of total risk taking: PP, Mach, Em, and Op
- Predictors of antisocial behaviour: PP, Op, Em, HH

Interactions: no interaction effects found between personality and social support on behaviour.

Implications & Future Research

Implications:

- Personality plays a role in engagement in some risk-taking and antisocial behaviour.
- Social support does not mitigate the influence of personality on behaviour.
- It is possible that social support is an independent, but weaker, contributor to antisocial behaviour. Perhaps the role of social support is less than demonstrated in previous research.

Future Research:

- Investigation of social support in relation to differing severities of antisocial behaviour (i.e. does social support play a more important role in more severe antisocial behaviour?)
- Investigation of social support in relation to specific behaviours (e.g. weapon carrying, violence etc.)

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Reflective Report of Research Activities

This is a reflective report of the research process undertaken for my dissertation which investigated personality and social support in relation to risk-taking and antisocial behaviour. I will summarise the research process and discuss the challenges encountered, what could have been done differently, and the strengths of my study.

One of my academic interests is how different personality traits contribute to individual differences and differential behaviours. I am also interested in protective factors regarding deleterious behaviour and offending as this can have implications for the general population and for reducing recidivism and antisocial behaviours. Prior to beginning the course, I conducted a comprehensive literature search to determine what was already well established within research literature and to identify research gaps for potential project ideas. The large volume of research relating personality (HEXACO traits and Dark Triad Traits) to antisocial/risk-taking behaviours quickly became evident. Additionally, several journal articles implicated social support as a protective factor in terms of risk and antisocial behaviours (for example, Michael & Ben-Zur, 2007). Possessing certain personality traits does not ultimately lead to engagement in antisocial or risk-taking behaviours. Consequently, I thought about factors that might buffer the effects of personality. As social support has been previously implicated as a protective factor, I then designed a study around whether social support might be one of these buffers limiting the effect of personality on risk-taking/antisocial behaviour. During this conceptualization process, I was determined to utilize social support as a variable within my project due to my interests. However, I could have researched other potential protective factors as well at this stage of

the research process to see if another factor perhaps stood out; something I would do differently another time.

To increase efficiency in the research process, prior to designing my study I prepared a plan with time scales for completing various aspects. Sometimes I adjusted my plans and time frame to include elements I had not anticipated. This developed my skills in time management and prioritizing tasks to avoid the negative consequences of missing deadlines.

Prior to data collection I needed to complete several tasks: designing the study, obtaining ethical consent, and developing the questionnaire online. I had an initial meeting with my project supervisor on October 15th 2017 to discuss the practicalities of my proposed idea and how we could feasibly test my research questions. The decision was made to conduct a study where participants completed an anonymous online questionnaire in their own time to maximize responses. We discussed utilising self-report questionnaires for personality, risk-taking behaviour, antisocial behaviour, and social support. We also explored using an online experimental game. After the supervision I independently conducted literature searches to determine what the best self-report scales were to measure my variables and developed a detailed research proposal and ethics application.

Finding appropriate scales to use within the questionnaire for my study was challenging. The personality scales I chose had been commonly used within previous literature and were chosen due to their brevity, accuracy, and reliability. However, there appeared to be fewer available self-report scales for antisocial behaviour and risk taking in the literature. I used a self-report delinquency scale modified by Charles & Egan (2005) to measure engagement in various activities deemed antisocial. However, this scale was designed for

adolescents, meaning I had to alter some of the questions to accommodate it for an adult sample in my proposed research. However, the reliability was tested in my study and this revealed no problems. Two risk-taking measures were chosen that had been used in previous research when measuring personality in relation to risk. Social support scales were also difficult to find but I discovered one measuring perceived social support which was then utilized. I learned that choosing the appropriate scales is paramount to success within your research.

My second supervisor meeting (21st November 2017) discussed utilizing an experimental game in order to measure individual's level of risky behavior/decisions. I had researched experimental games that had been shown in previous literature to be reliable and accurate. However, when looking into how to embed this within an online questionnaire it appeared complex requiring advanced coding. Due to time constraints and no experience of this before, I discussed the idea of using solely questionnaires and self-report in my study. It was decided, by myself and my supervisor, that we would eliminate the experimental task due to its complexity and the practicality of completing the study within the given time frame.

In December 2017 I finalized my research proposal and ethics application. My ethics application went smoothly because there was minimal harmful or sensitive content. I received my ethics application back with approval on 16th March and so commenced creating an online questionnaire on Bristol Online Survey. This was another challenge in the research process as I had never created a questionnaire using this online survey tool. However, I was proactive and with the use of online guides, I successfully created my online questionnaire.

After I had obtained ethical consent I thought about collecting data from adolescents (16-18) in addition to adults to make comparisons. However, after

speaking to the ethics committee and becoming aware another application would need to be approved, it was evident changing it to incorporate this was not possible at this stage due to time constraints. I learned that it is paramount to map out all possible ideas initially to avoid this in the future.

In my next supervisor meeting (22nd March) we checked my questionnaire on Bristol Online Survey to ensure correct formatting and inclusion of necessary items. At this meeting we altered the study as we decided to remove a self-report scale for risk taking due to the length and complex nature, leaving one risk taking scale which we decided would adequately measure engagement in the behaviours. This would reduce fatigue, boredom, and confusion in participants. Additionally, there seemed to be no set way to calculate the results of the questionnaire in question. As I did not add anything to the study, a new application did not need to be sent to the ethics committee.

After I had completed setting up my questionnaire on Bristol Online Survey, I used a small sample initially as a pilot study to identify any mistakes or incoherent statements in the questionnaire. There was feedback about the instructions to a particular scale being confusing therefore this was altered before the study was launched. This highlighted the importance of conducting a pilot study to identify any issues within the study before it is conducted on a larger sample size, therefore a strength within my research process was utilizing a pilot sample.

One of my biggest challenges was data collection. In order to obtain a statistically powerful result I needed a large number of participants of almost 300. This was something I found challenging and was apprehensive about. However, from launching my survey on 8th April, I advertised my questionnaire on different platforms, including social media websites and also participant

recruitment platforms. As a result of hard work advertising on numerous sites I had a sample size of over 400. Therefore, what appeared to me to be my biggest challenge turned into one of my studies strengths. This increased my confidence as I overcame what, prior to beginning my research, I perceived to be my biggest challenge.

During data collection I received feedback from participants. Participants stated it would be interesting to know the results from their personality assessments. Due to confidentiality no information about individual answers could be provided, however. This was anticipated beforehand and therefore a strength of my study was the debrief page where I included links to free online personality tests and also links to websites about social support and how to increase your social network.

After I had received over 400 participants and my questionnaire had been open for a month, I made the decision to close the study on 1st May and begin analysis of results. A strength of my study was the reliabilities of each scale used, as they all demonstrated good reliability using Cronbach's alpha. Whilst looking at the data initially, I became aware of something I should have done differently. For my demographic questions I left a space for participants to type in their own answers. This caused the biggest problems with the education question as people did not seem to understand it. In hindsight it would have perhaps been more beneficial to ask their highest level of education and ask them to choose an answer from fixed ones. I learnt that if you leave space for participants to insert their own answers you are leaving yourself more open to mistakes, typos, and misinterpretation of the question.

After I had recoded the data and calculated averages I had a supervisor meeting to discuss appropriate statistical analyses (2nd May). After this meeting I

continued data analysis independently running multiple tests to make sense of the data. I discovered that my data was skewed in some variables, and required transforming. This was something I had not done before and found challenging. After using various sources including a statistics textbook (Field, 2013) to increase my understanding, I used transformations on my data. However, after utilising several transformation techniques, the data remained skewed. Therefore, I had to rethink my analyses to employ non-parametric and more robust alternatives. Although stressful at the time, on reflection, overcoming this obstacle within my data analysis helped me develop problem solving skills.

I was also able to look at the respondent progress section on Bristol online survey and noticed a high drop-out rate for one of the pages. This particular page contained a lot of questions because I had set it up to be one page per questionnaire scale. Perhaps the volume of questions was off-putting to participants. Consequently, I have learnt to split up the questions across more pages to make it more manageable in future. In addition, I learnt the importance of making the information page concise and interesting, as a large number of people viewed my information page but did not continue to complete the study.

After data analysis I began to write up my project. A personal challenge was keeping to the word limit, as this is something I often find difficult. Consequently, this research project developed my ability to be concise in my writing.

I have found the overall process of conducting this research project beneficial with regards to understanding the process of conducting research and utilising individual supervision. I found the supervision process beneficial as it helped me develop my skills and understanding. Additionally, it allowed me to

gain experience communicating with another professional in regard to coordinating a piece of research, a skill valuable in any professional career. Each part of the process taught me new skills and required me to work independently and overall, though I had to overcome problems encountered, I enjoyed the experience.

Word Count: 1809

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