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Moral Disengagement and individual differences in cannabis use:
Investigating perspectives of effective intervention in adults.

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Research Proposal:

Moral Disengagement and individual differences in cannabis use:

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ABSTRACT

The current study aims to explore mechanisms of moral disengagement in cannabis use of adults and the influence of these. Participants will take part in an online survey to determine moral disengagement, attitudes and behavioural beliefs, personality domain and impulsivity dimension. In an experimental design, participants will experience an intervention-style manipulation, informing of either the hedonic, health or legal consequences of cannabis, as well as a control condition. Subsequent assessments of moral disengagement, attitudes and behavioural beliefs will be analysed to determine whether these have changed when compared to baseline scores. Differences between manipulations will be determined, followed by an exploration of interactions between individual differences and specific moral disengagement mechanisms.

Introduction

The most commonly used illicit drug in the UK, cannabis is used by around 2.1 million adults in the UK (ages 16-59; Lader, 2015). Almost 3 in 10 adults report using this drug in their lifetime, with 37% of adults being classed as frequent users from 2015-2016. Meanwhile, the cost of using this increasingly socially acceptable drug (Berg et al. 2015) are difficult to overlook: it up to £361 million each year is spent on Policing illegally traded and consumed cannabis (Bryan, Del Bono & Pudney, 2013). The current study will explore moral disengagement processes behind cannabis use, along with interacting individual differences, and the effect of these on an intervention-like manipulation.

The associated reasons behind such prevalent cannabis use in the UK range from the pleasure of getting "high" (Lupica, Riegel & Hoffman, 2004; Rella, 2015) to

medicinal reasons (Ware, Adams & Guy, 2005) and social factors (Coggans & McKellar, 1994). However, cannabis use has been widely linked to negative health effects from smoking (Ashton, 2001), as well as inducing psychosis in vulnerable individuals (Wilkinson, Radhakrishnan, & D'Souza, 2014).

Goldstein's (1985) model explains the coexistence of cannabis use and criminal behaviour using psychopharmacological reasoning: through the motivation to get high and being disinhibited once under this influence. Wood et al. (1995) found that sensation seeking factors were significantly linked to cannabis use, finding that 52% of participants cited using the drug because it made them "feel good". This could be due to the neuropsychological "reward" caused by the primary psychoactive substance, Tetrahydrocannabinol (THC). The 'high' produced by cannabis leads to feelings of euphoria and relaxation, activating dopamine neurons and brain reward circuits (Lupica, Riegel & Hoffman, 2004). Given the "feel good" factor, in which 34% of users reported fun, thrill and excitement as their primary reason for cannabis use, it is possible the sensation seeking dimension of impulsivity occurs despite persons having relatively high moral agency.

Individuals can use cannabis without the associated self-censure and guilt because they can selectively disengage their moral agency through cognitive mechanisms of justification (Bandura, 1990 & 2002). Bandura, Barbaranelli, Caprara, And Pastorelli's (1996) categorised eight Moral Disengagement mechanisms to account for cognitions that take place with antisocial (aggressive) behaviour in children and has since been adapted and applied to adult studies in ethical decision making (Detert, Treviño and Sweitzer, 2008). The eight mechanisms adopted in selective MD are: euphemistic labelling, advantageous comparison, displacement of responsibility, diffusion of responsibility, disregarding or distorting consequences, dehumanization and attribution of blame (Bandura 1986; in Bandura 2002). By

deactivating self-regulatory processes, the behaviour is disengaged to make the behaviour acceptable and reduce dissonance with one's moral agency. Extensive research has considered the relationship between moral disengagement and behaviours such as doping in sports (Boardley, Grix & Dewar, 2014) and ethical issues in society (Osofsky, Bandura & Zimbardo, 2005; Detert, Treviño & Sweitzer, 2008) as well as criminal and antisocial behaviour (Rogers, 2001; Bandura et al., 1996). Studies have sought to identify mechanisms of moral disengagement and understand their predictive value or interaction with illicit behaviour.

The relationship between illicit drug use and moral disengagement has been investigated with a social psychology perspective (Passini, 2012; Rogers, 2001 & Kiriakidis, 2008), and is thought to play a key role in ameliorating social-cognitive dissonance in drug use (Lucidi et al., 2008; Armitage, Armitage, Conner, Loach, & Willetts, 1999). Bandura also observes that moral agency is rooted not only in one's self-theory, but also personal standards to self-sanction (Bandura, 2002). An example is illicit drug use, which may be seen as a personal libertine matter, but which typically requires complicity with criminal networks to indulge. Personality domains derived from the HEXACO Personality Inventory have numerously been linked to antisocial behaviour (Van Gelder & De Vries, 2012; 2014) and to MD itself (Egan, Hughes & Palmer, 2015). The link between moral disengagement and individual differences offers some explanation towards of the vulnerabilities that lead to selective disengagement from moral principles.

Substance use and its negative effects can be packaged as a health matter, rather than glamorised semi-criminal behaviour; encouraging individuals to consider their health and wellbeing as both a personal and public matter (Bandura, 2004).

The current study examines how cannabis users use MD, and if one can reinstate moral agency through effective, targeted intervention, to change attitudes to their drug use. The aims of the study are:

1. To identify if moral disengagement and attitudes/behavioural beliefs in adults can be influenced by information about either the hedonic, health or legal consequences of cannabis use, compared to controls.
 - a. To highlight with which conditions these differences are significant
2. To examine whether any of the 8 moral disengagement mechanisms are significantly linked to cannabis use in adults.
3. To investigate the association of moral disengagement, personality and impulsivity dimensions.

Methodology

Sample

The current study will use opportunistic sampling of young adults (18-25), who will be invited to take part through email, social media posts and paper advertisements around the university. The required sample, as calculated by G*Power 3.1 is 44 participants per manipulation, so 176 participants altogether participants, where the effect size is 0.5, with an alpha of 0.05 and power of 0.95. However, to carry out a one-way ANOVA between the manipulation groups (with effect size at 0.25, alpha of 0.05 and power of 0.80) the required sample is 179. Thus, the preferred sample will be to run 180 participants altogether, with 45 participants in each condition (Faul, Erdfelder, Buchner & Lang, 2009; see Appendix 1).

Procedure

The study will use an internet-mediated survey to address the research question through Bristol Online Survey. Following an introductory screen outlining the survey, participants will have to complete an online consent form to partake in the study before commencing. After gathering demographic information on age and gender, (ensuring participants are over the age of 18), participants will answer two scaled questions about their cannabis use. Participants will then complete scales on attitudes and behavioural beliefs, moral disengagement, personality and impulsivity.

The 9-question attitudes and behavioural beliefs scale is adapted from Armitage et al. (ABBS; 1999, See Appendix 2). The scoring for the ABBS ranges from +3 to -3. These relate to what would be perceived and pro-social (+3) and anti-social (-3) beliefs, and is easily interpreted item by item to provide an overall mean score with which to compare baseline to post-manipulation answers. The statements cover health risks, hedonic and social effects, as well the criminality of cannabis use. Although adapted from research originally exploring Theory of Planned Behaviour, these questions are extremely relevant to the focus of the current study. The attitude variable questions (1-4) had a reliability of 0.88. (Armitage et al., 1999).

Adult adaptations of the Bandura et al. (1996) scale have been used in studies investigating anti-social behaviour and mechanisms of selective moral disengagement (such as Detert, Treviño & Sweitzer, 2008; Hyde, Shaw & Moilanen, 2010). The adapted 24-item Adult Moral Disengagement Scale (see Appendix 3) is an efficient yet robust adaptation of the original 32-item survey ($\alpha=.87$), holding 3 of the best-fitting items per mechanism of Moral

disengagement, all loading on their factor over 0.40 but with no cross loadings greater than 0.25 (Detert, Treviño & Sweitzer, 2008).

The 24-item Brief HEXACO Inventory (Brief HEXACO Inventory, De Vries, 2013; see Appendix 4), is a personality assessment based on the six major dimensions of personality: Honesty-Humility, Emotionality, Extraversion, Agreeableness (versus Anger), Conscientiousness and Openness to Experience. Although not as high in alpha reliability, this brief form of the 60-100 item HEXACOs provides 4 statements per domain (1 per facet) with 0.59-0.73 convergent correlations with the original HEXACO Personality Inventory- Revised and only 0.16 validity loss. Thus, the benefit of time saving increases participant completion of the study (De Vries, 2013).

Finally, the Short Version of the UPPS Impulsive Behaviour Scale (SUPPS-P will assess impulsivity using 59 items within five subscales: urgency, premeditation, perseverance, sensation seeking, and positive urgency (Whiteside & Lynam, 2001, Lynam, 2013; see Appendix 5). Despite being a shortened version, the SUPPS-P still replicated the internal consistency across subscales (0.74-0.88) and inter-scale correlations with the full UPPS-P, while saving 66% participation time (Cyders, Littlefield, Cofey & Karyadi, 2014). Given that the current study is not focussed on impulsivity dimension, this scale has evidence of being reliable and robust enough to provide an indication of impulsivity dimension; while preserving participant utility by removing items that have a high correlation with others in the longer version.

Having collected baseline psychometric measures, in the second part of the study participants are presented with a short video clip embedded on the survey page. Allocation of the four conditions will be routed through selection of an arbitrary shape, randomising the clip they see.

These clips will comprise:

1. The hedonic effect of cannabis use <https://youtu.be/KDBKYqIkctU?t=54s>
(from 54 seconds to 3.23 minutes)
2. Health Risks of cannabis <https://youtu.be/Uvv5rtDYohg?t=30s> (from 30 seconds to 2.36 minutes)
3. Criminal Risk and cost of Cannabis
https://youtu.be/oeypwW_xmuY?t=25m10s (from 25.10 minutes to 28.15 minutes)
4. Control Stimuli (March of the Penguins)
<https://www.youtube.com/watch?v=L7tWNwhSocE>

The final part of the study will involve participants repeating the ABBS and MDS. Changes on these measures will determine whether the manipulation has influenced them.

Upon completing the study, a debrief page will provide participants with Thanks for completion of the experiment, as well as a signpost for support and website links to information on cannabis use. Finally, they will be provided with the researcher's contact details again, if they wish to contact them regarding the study once complete.

Analytical Techniques

Descriptive statistics will present means and standard deviations, reliability, and distribution statistics regarding age, gender, and the psychometric measures.

A comparison of Moral Disengagement and attitude scores before and after manipulation will be carried out. This will be analysed through dependant *t*-test of participant mean scores to determine any significant differences before and after

manipulation. To compare the 4 manipulation groups, an Analysis of Variance between mean differences, along with post-Hoc tests will examine for significant differences in attitudes to drug use following the informational manipulation.

The relationships between Moral disengagement, personality and impulsivity dimensions will be examined using correlation; these measures will also predict drug use using multiple regression. Regression will also test if specific traits inhibit attitude or moral change using the process test of mediation.

Expected Outcomes

It is expected that participants will show a significant decrease in moral disengagement and an increase in attitude and behavioural belief score after intervention in health consequences, while the control and other groups remain the same.

It is expected that mechanisms diffusing responsibility or attributing blame for criminal responsibility and disregarding consequences of any harm caused will be more significant influences for participants. As the use of cannabis is not seen to be directly harmful to individuals other than users, it is expected that participants may not score significantly more for dehumanization, as they do not interact with victims of crime created by the criminal networks behind cannabis production.

There may additionally be a relationship between moral disengagement or specific MD mechanisms, personality and impulsivity. These may correlate with the recorded influence of the video clip on participants.

The findings of the study are potentially applicable to public health and crime prevention planning.

Ethical Considerations

Participants will not be coerced to take part in the study. They are provided with a comprehensive brief of the content of the study prior to taking part, but can also withdraw at any point of the study.

Information on anonymity, confidentiality and data handling is provided before taking part. No information enabling the identification of individuals will be gathered, and results only analysed in aggregate statistical associations. Data will be accessed only by the researcher and supervisor, the raw data will be archived securely in the university, and destroyed at the earliest point legally possible. Participants will be informed that once they submit their answers at the end of the survey, completion will result in no longer being able to withdraw results due to the nature of anonymised data.

If participants experience distress or require more information regarding cannabis use, they are recommended to contact their GP at the start of the study and should they withdraw or complete the study in debrief. UK participants will be provided with links to NHS Choices or FRANK; persons from overseas who participate will be directed to the World Health Organisation (WHO) for more information (links provided below).

NHS Choices: www.nhs.uk/Livewell/drugs/Pages/cannabis-facts

FRANK: www.talktofrank.com/drug/cannabis

WHO: http://www.who.int/substance_abuse/facts/cannabis/

Timeline for Forensic Research Project

W/C	Task
8 th May	<p>Finalise Research Proposal and submit ethics review</p> <p>Ensure BOS survey is faultless, run again on dummy participant Provide BOS survey access to supervisor</p> <p>Consider suitable paper for submission of project and continue drafting introduction/methods sections</p>
15 th May	<p>F04 Submission</p> <p>Research step by step plan for completing data handling and analyses- including interactions if non-significant. Select paper(s) of relevance for style of submission for dissertation</p>
22 nd May	<p>F05 Submission</p> <p>Commence write up of Introduction and Methods sections for dissertation</p> <p>Complete Ethics review amendments if necessary</p>
29 th May	<p><i>Upon Receipt of Ethics approval:</i></p> <p>Commence data collection: Circulate online survey (Supervision)</p>
5 th June	<p><i>Upon Receipt of Ethics approval:</i></p> <p>Survey Circulation</p> <p>Begin to collate and review data</p>
12 th June	<p>Survey Circulation</p> <p>Refine introduction procedure and methods sections of paper</p> <p>Draft template for Results section</p>
19 th June	<p>Complete Data analysis (Supervision)</p>
26 th June	<p>Write up Results and interpret</p> <p>Research as necessary</p>
3 rd July	<p>Write up in Discussion, finalise draft of project</p> <p>Complete presentation for submission and collate additional materials</p>

	Send to readers
10 th July	Send draft portfolio to supervisor Test draft on TurnItIn
17 th July	Draft amendments (Supervision) Review suitable paper for submission style Circulate paper to beta-readers Test again on TurnItIn
24 th July	Complete final amendments Submission of FRP Portfolio with additional materials (soft copies)
31 st July	Submit identical hard copy of FRP FRP Deadline (August 1 st)

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Appendices

A. G*Power 3.1.9.2 sample size calculation (Faul, Erdfelder, Buchner & Lang, 2009)

t tests – Means: Difference between two dependent means (matched pairs)

Analysis: A priori: Compute required sample size

Input: Tail(s) = Two
Effect size dz = 0.5
 α err prob = 0.05
Power (1- β err prob) = 0.90

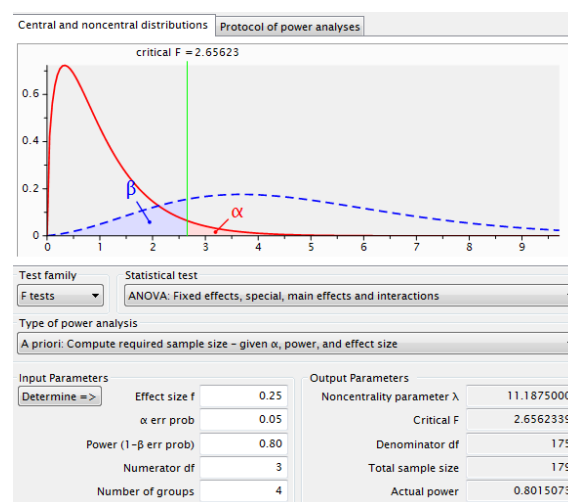
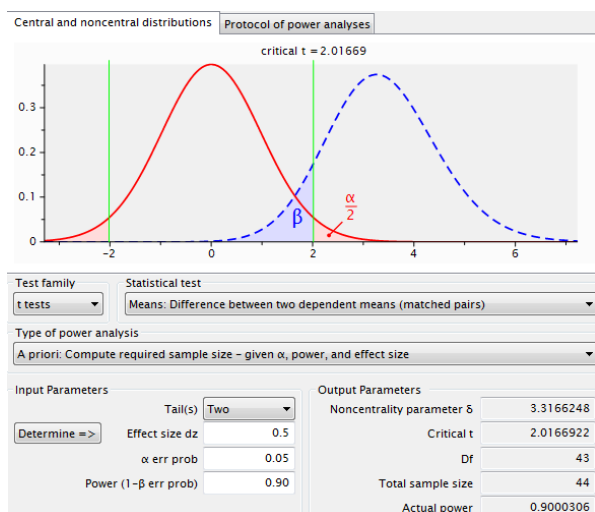
Output: Noncentrality parameter δ = 3.3166248
Critical t = 2.0166922
Df = 43
Total sample size = 44
Actual power = 0.9000306

F tests – ANOVA: Fixed effects, special, main effects and interactions

Analysis: A priori: Compute required sample size

Input: Effect size f = 0.25
 α err prob = 0.05
Power (1- β err prob) = 0.80
Numerator df = 3
Number of groups = 4

Output: Noncentrality parameter λ = 11.1875000
Critical F = 2.6562339
Denominator df = 175
Total sample size = 179
Actual power = 0.8015073



B. Questions on participant demographics

Gender M/F/Other

I am over the age of 18 Y/N

Age --

Cannabis use

I have used cannabis in my lifetime Yes/ No

The last time I used cannabis was Over 1 year ago/ within the last year / within the last 6 months/ within the last month/ within the last week/ within the last 24 hours.

Use Attitudes and Behavioural beliefs questionnaire

Attitudes (adapted from Armitage, Armitage, Connor, Loach & Willets, 1999):

Attitude was assessed using four items on a 7-point bipolar scale ranging from +3 (prosocial) to -3 (antisocial). These are anchored by bad-good, unfavourable-favourable, negative-positive and satisfaction-unsatisfaction.

Behavioural Belief components (adapted from Armitage, Armitage, Connor, Loach & Willets, 1999): Behavioral beliefs were measured on 7-point bipolar scale ranging from +3 (prosocial) to -3 (antisocial) scales anchored by true and false.

Statement	7-point Scale						
1. My use of cannabis is	Bad						Good
2.	Unfavourable						Favourable
3.	Negative						Positive
4.	Unsatisfactory						Satisfactory
5. "Cannabis makes me more sociable"	True						False
6. "Cannabis leads to me having poorer physical health"	True						False

7. "Cannabis makes me feel good"	True						False
8. "Cannabis will result in my becoming dependent on it"	True						False
9. "Cannabis will result in me getting into trouble with authority"	True						False

Scoring

Statement	7-point Scale						
	(Pro) 3	2	1	0	-1	-2	(Anti) -3
1. My use of cannabis is	(Pro) 3	2	1	0	-1	-2	(Anti) -3
2.	(Pro) 3	2	1	0	-1	-2	(Anti) -3
3.	(Pro) 3	2	1	0	-1	-2	(Anti) -3
4.	(Pro) 3	2	1	0	-1	-2	(Anti) -3
5. "Cannabis makes me more sociable"	(Anti) -3	2	1	0	1	2	(Pro) 3
6. "Cannabis leads to me having poorer physical health"	(Pro) 3	2	1	0	-1	-2	(Anti) -3
7. "Cannabis makes me feel good"	(Anti) -3	-2	-1	0	1	2	(Pro) 3
8. "Cannabis will result in my becoming dependent on it"	(Pro) 3	2	1	0	-1	-2	(Anti) -3
9. "Cannabis will result in me getting into trouble with authority"	(Pro) 3	2	1	0	-1	-2	(Anti)-3

Mean overall score above 9 indicates "pro-social" attitudes and behavioural beliefs.

C. Adult Moral Disengagement Scale & Scoring (Detert, Treviño & Sweitzer, 2008; adapted from Bandura et al., 1996)

Item	Scale
1. It is alright to fight to protect your friends	MJ
2. Sharing test question answers is just a way of helping your friends	EL
3. Damaging some property is no big deal when you consider that others are beating people up	AC
4. If people are living under bad conditions, they cannot be blamed for behaving aggressively	DISR
5. A member of a group or team should not be blamed for the trouble the team caused	DIFR
6. Some people deserve to be treated like animals	DEH
7. It's ok to steal to take care of your family's needs	MJ
8. Talking about people behind their backs is just part of the game	EL
9. Stealing some money is not too serious compared to those who steal a lot of money	AC
10. People don't mind being teased because it shows interest in them	DC
11. If someone leaves something lying around, it's their own fault if it gets stolen	AB
12. It is ok to pick on an unimportant little person	DEH
13. It's ok to attack someone who threatens your family's honour	MJ
14. Looking at a friend's work without permission is just "borrowing it"	EL
15. If someone is pressured into doing something, they shouldn't be blamed for it	DISR
16. If a group decides to do something harmful, it is unfair to blame any one member of the group	DIFR
17. Teasing someone does not really hurt them	DC
18. People who are mistreated have usually done things to deserve it	AB
19. Someone who is obnoxious does not deserve to be treated like a human being	DEH
20. Compared to other illegal things people do, taking some things from a store without paying for them is not very serious	AC
21. People cannot be blamed for misbehaving if their friends pressured them to do it	DISR
22. You can't blame a person who plays only a small part in the harm caused by a group	DIFR

23. Insults don't really hurt anyone	DC
24. People are not at fault for misbehaving at work if their managers mistreat them	AB

Assessed using a 5- point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

were assessed on a 5-point

Likert scale ranging from 1 (strongly

disagree) t o 5 (strongly

agree)

MJ = moral justification

EL = euphemistic labelling

AC = advantageous comparison

DISR = displacement of

responsibility

DIFR = diffusion of responsibility

DC = disregarding or distorting

consequences

DEH = dehumanization

AB = attribution of blame.

D. Brief HEXACO Inventory (de Vries, 2013)

The Brief HEXACO Inventory (BHI; de Vries, 2013)

Instructions: Please indicate to what extent you agree with the following statements, using the

following answering categories: 1=strongly disagree, 2=disagree, 3=neutral (neither agree,

nor disagree), 4=agree, and 5=strongly agree.

English version (adapted slightly)

1. I can look at a painting for a long time.
2. I make sure that things are in the right spot.
3. I remain unfriendly to someone who has been mean to me.
4. No one likes to talking with me.
5. I am afraid of feeling pain.
6. I find it difficult to lie.
7. I think science is boring.
8. I postpone complicated tasks for as long as possible.
9. I often express criticism.
10. I easily approach strangers.
11. I worry less than others.
12. I would like to know how to make lots of money in a dishonest manner.
13. I have a big imagination.
14. I work very precisely.
15. I tend to quickly agree with others.
16. I like to talk with others.
17. I can easily overcome difficulties on my own
18. I want to be famous.

19. I like people with strange ideas.
20. I often do things without really thinking.
21. Even when I'm treated badly, I remain calm.
22. I am seldom cheerful.
23. I tend to cry during sad or romantic movies.
24. I am entitled to special treatment.

Scoring table BHI (recode scores of items followed with an 'R' as follows: 5→1, 4→2, 3→3, 2→4, 1→5): Honesty-Humility: 6 (Sincerity), 12R (Fairness), 18R (Greed Avoidance), 24R (Modesty); Emotionality: 5 (Fearfulness), 11R (Anxiety), 17R (Dependence), 23 (Sentimentality); eXtraversion: 4R (Social Self-esteem), 10 (Social Boldness), 16 (Sociability), 22R (Liveliness); Agreeableness: 3R (Forgiveness), 9R (Gentleness), 15 (Flexibility), 21 (Patience); Conscientiousness: 2 (Organization), 8R (Diligence), 14 (Perfectionism), 20R (Prudence); Openness to Experience: 1 (Aesthetic Appreciation), 7R (Inquisitiveness), 13 (Creativity), 19 (Unconventionality).

E. Short UPPS-P Impulsive Behaviour Scale (Lynam, 2013; adapted from Whiteside & Lynam, 2005)

Scale Items to be used in survey

1. When I feel bad, I will often do things I later regret in order to make myself feel better now.
2. Sometimes when I feel bad, I can't seem to stop what I am doing even though it is making me feel worse.
3. When I am upset I often act without thinking.
4. When I feel rejected, I will often say things that I later regret.
5. I generally like to see things through to the end.
6. Unfinished tasks really bother me.
7. Once I get going on something I hate to stop.
8. I finish what I start.
9. My thinking is usually careful and purposeful.
10. I like to stop and think things over before I do them.
11. I tend to value and follow a rational, "sensible" approach to things.
12. I usually think carefully before doing anything.
13. I quite enjoy taking risks.
14. I welcome new and exciting experiences and sensations, even if they are a little frightening and unconventional.
15. I would like to learn to fly an airplane.
16. I would enjoy the sensation of skiing very fast down a high mountain slope.
17. When I am in great mood, I tend to get into situations that could cause me problems.
18. I tend to lose control when I am in a great mood.
19. Others are shocked or worried about the things I do when I am feeling very excited.
20. I tend to act without thinking when I am really excited.

Ethics Approval Letter



The University of
Nottingham

UNITED KINGDOM · CHINA · MALAYSIA

Investigators: Vince Egan and Faith Mbewe

Title of study: Moral Disengagement and individual differences in cannabis use: Investigating perspectives of effective intervention in adults

Duration of study: Until September 2017

Ethics reference number: 238

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Tuesday 20th June 2017

A favourable opinion is given to the above named study on the understanding that the applicants conduct their research as described in the above numbered application, and adhere to all conditions under which the ethical approval has been granted and use only materials and documentation that have been approved. If any amendments to the study are required, an amendment should be submitted to the committee for approval.

David Daley (Professor)

Co-Chair of DPAP Ethics Subcommittee

Amanda Griffiths (Professor)

Co-Chair of DPAP Ethics Subcommittee

Moral disengagement and individual differences in cannabis use:

Investigating perspectives of effective intervention in adults

ABSTRACT

Despite the illicit nature and association of cannabis, it is still the most commonly used illegal drug in the UK. To use the substance, individuals may selectively disengage their moral agency and associated guilt through Bandura's Mechanisms of MD (2002). This paper investigates the influence of brief intervention on adult cannabis use, exploring participants' attitudes and behavioural beliefs (ABB), intentions, and the mechanisms of Moral Disengagement (MD). To test whether it is possible to reinstate moral agency, participants experienced a brief (2-3 minutes) intervention-style manipulation to explore four conditions. This comprised one of three targeted psychoeducational manipulation on cannabis use (hedonic, health and criminal effects), as well as a control stimulus. In an experimental design, 176 participants completed self-report surveys on ABB of perceived control and behavioural intention, along with MD and antecedent personality and impulsivity dimensions. Following exposure to a video clip, participants were retested on ABB and MD. Retest questionnaires found significant reductions in ABB, including behavioural intention to use cannabis after both health and hedonic approaches to education, in comparison to the control condition. MD significantly correlated with a participant's behavioural intention to use cannabis in the future. Findings offer implications for brief intervention strategies with cannabis users. These results suggest that individuals who are more likely to show intention to use cannabis in the future, use MD to reduce self-censure, but that associated attitudes that facilitate MD can be manipulated. Crime-targeted intervention appeared less effective in reducing pro-cannabis ABB, likely due to increased social norms of cannabis use amongst consumers. Such findings are mirrored in current debates in legislation.

Keywords: Moral Disengagement, Cannabis (Marijuana) Use, Brief Intervention, Health Education, Treatment Effectiveness, Perceived Control

Despite its current categorisation in the UK as an illegal, Class B substance (Home Office, 2009), cannabis use in adults is increasingly accepted in society (Berg et al., 2015). The widespread use of cannabis illustrates these attitude shifts; it is the most commonly used illicit drug in the UK, estimated at around 2.1 million adults in the UK (ages 16-59; Lader, Home Office, 2015). Almost 3 in 10 adults report using this drug in their lifetime, with 37% of adults being classed as frequent users from 2015-2016 (defined as taking a drug more than once a month the last year). Meanwhile, the associated legal consequences of cannabis use remain challenging. Individuals in possession of cannabis are at risk of a maximum sentence of five-years imprisonment (Home Office, 2009) with the police costs of managing cannabis-related offences associated to illegal trading and consumption valued at approximately £361 million each year (Bryan, Del Bono & Pudney, 2013). Health risks associated with cannabis range from short-term direct effects such anxiety, psychotic symptoms and disturbed cognitive functioning, to long term, often comorbid mental and physical effects (World Health Organisation [WHO], 2016).

Goldstein's (1985) model explains the coexistence of cannabis use and criminal behaviour by association and psychopharmacological reasoning: the motivation to get high and being disinhibited once under this influence increases risk of offending unavoidably. Thus, a crime-targeted intervention is beneficial to explore, by highlighting how using cannabis requires complicity with criminal networks to indulge. However, cannabis poses a moral dilemma for users who contribute to organised crime rings by funding the illicit production and trade of the drug, but remain unaware of this due to the chain of supply.

Moral agency can be defined as an individuals' ability to make judgements of situations based on their learned moral codes, and then accountably act on these

morals in suitable fashion. Moral disengagement (MD, hereafter) is a socio-cognitive process through which individuals withdraw their customary moral agency and self-regulation to decrease the associated guilt and self-censure caused by carrying out illicit behaviours (Bandura 1991, 1999a). Following the categorisation of mechanisms of MD which substitute moral principles (Bandura, Barbaranelli, Caprara, & Pastorelli, 1996) research has sought to investigate their use in association to illicit behaviour. The present study explores Bandura's eight mechanisms of MD (2002) in adults who have used cannabis and the effect of these on intervention-like manipulation, along with interacting individual differences.

Individual Differences

The link between MD and individual differences offers some explanation towards the predisposing influences that lead to selective disengagement from moral principles. Wood et al. (1995) found that sensation seeking factors were significantly linked to cannabis use; 52% of participants cited using cannabis because it made them 'feel-good'. This could be due to the neuropsychological "reward" caused by the primary psychoactive substance in cannabis, Tetrahydrocannabinol (THC). The 'high' produced by cannabis leads to feelings of euphoria and relaxation, activating dopamine neurons and brain reward circuits (Lupica, Riegel & Hoffman, 2004). Given the 'feel-good' factor- 34% of users reported the fun, thrill and excitement of cannabis as their primary motivation for use- it is possible the sensation seeking dimension of impulsivity occurs despite persons having high MD. Additionally, personality (Lee & Ashton, 2004) has often been linked to antisocial behaviour (Van Gelder & e Vries, 2012; 2014), and MD itself (Egan, Hughes & Palmer, 2015), as well as substance abuse (Flory, Lynam, Milich, Leukefeld & Clayton, 2002). Of the six HEXACO personality trait domains

(Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness & Openness to experience) research specifically finds traits of high Openness to experience (Eisenman, Grossman, & Goldstein, 1980), and low Conscientiousness (Weller & Tikir, 2011) to engaging in cannabis use and related risk-taking behaviours (Passini, 2012).

Moral Agency

Theories of morality proposed by Piaget in the 1930's predate the concrete establishment of cognitive morality models. Research into morality and moral judgment by Kohlberg in the 1950's coincided with the USA attempting to understand communist and fascist regimes (Rest, 1986). Morality encompasses one's conscience (Kohlberg, 1964), but requires internalised social and cultural norms of responsibility -to facilitate choice of action and self-regulation (Bandura, 1999b). Kohlberg (1964) said that ultimately, behaviour is dependent on the autonomous choice of the morally acting individual. However current leading theories behind the development of morality argue one's socialisation of norms defines one's moral and immoral behaviour (Bandura 1991). Bandura has taken these concepts further in his socio-cognitive based theories of moral agency, and the mediating role that social norms play on individual agency (Bandura,1999b).

By exercising moral agency, individuals are dissuaded from carrying out illicit behaviour and learn to self-sanction through socio-cognitive processes derived from socialisation (Bandura, 1999b). Additionally, research suggests that with maturity, people's morals are further shaped and customised through learned personal standards and sensitivity to associated emotions of guilt (Quinn & Bussey, 2015). Thus, morality of an individual encompasses not only one's learned social standards but also their personality traits, subjective experiences, attitudes, and propensity to self-regulate in unfamiliar environments.

Mechanisms of MD

Where there is a discrepancy between moral agency and actual behaviour, mechanisms of MD can be activated (Bandura 1991; 1999a; 2002). These ameliorate cognitive dissonance and self-sanction (Detert Treviño, & Sweitzer, (2008; Lucidi et al., 2008). MD plays a mediating role in pro- and anti-social behavioural research (Hyde, Shaw & Moilanen, 2010), for example, as a product of peer rejection, and precursor of adult offending (Fontaine, Fida, Paciello, Tisak & Caprara, 2014). Equally, aggression and disruptive behaviour in adults has been shown to promote MD in adolescents (Paciello et al., 2017).

Disengagement can take place at one of four axes of self-regulation (Bandura, 1991): disengaging from the behaviour itself; the locus of responsibility of any detrimental effects; the harmful consequences of the behaviour; and its potential victims. Under these, Bandura (1991) proposed eight mechanisms of MD. In moral justification, individuals reconstrue their behaviour to be personally or socially acceptable, due to having some form of moral necessity. This includes euphemistic (or palliative) labelling which can be used as a means to re-dress the immoral activity by using language of non-responsibility (Bandura, 1986), and Advantageous Comparison, which minimises the behaviour's illicit nature to being almost benevolent by comparing it to more atrocious inhumanities.

Because individuals have moral understanding of their indiscretions and can accept responsibility for them, the above mechanisms can be employed to selectively de-activate moral processes at the point of are contemplating taking part. These strategies are considered the most effective mechanisms because they neutralise the deterrent nature of the act while also increasing self-approval through cognitive restructuring (Bandura, 1986).

Attributions of harm can be used when considering the act and its potential detrimental effects. Individuals might also use mechanisms to displace or diffuse responsibility. Displacement of Responsibility involves attribution of accountability to authority figures rather than oneself. Milgram's famous study (1974) demonstrated this effect, where participants administered electric shocks to peers in compliance of orders from figures of authority. This weakens the individuals' perceived autonomy to act, and the direct consequential harm of their actions. This mechanism is perpetuated by the harm being unintended, unforeseeable, or dictated by an authority figure.

Diffusion of responsibility on the other hand requires reducing the clear links between the act and the consequences. This divides the "labour" of responsibility, so that each co-offender's involvement is habitual and routine (Bandura, 1986; Kelman, 1973), so that group decisions and the joint effort lessens individual accountability of the behaviour.

Mechanisms that target the detrimental effects of an illicit behaviour include disregarding (or distorting) of the consequences of the behaviour. This mechanism weakens potential detrimental effects (Bandura, 2002), where interference is avoided to inhibit social responsibility (Tilker, 1970). The detrimental consequences are instead minimised to reduce vicarious distress (Bandura, 1986). Finally, when faced with a victim, the mechanism of dehumanisation reduces the natural empathy and guilt response to the consequences of detrimental behaviour inflicted on another person (Bandura, 1986; 1999a).

Selective MD

Like many psychosocial concepts, MD is mediated by factors of context, as well as individual differences (DeLisi et al., 2014). This is where self-control has failed to activate moral standards that will enable individuals to resist the behaviour independently and can be prevalent when lone-acting in illicit behaviour (Bandura, 2002).

The use of MD has been associated to “the perpetration of inhumanities” (Bandura, 1999a) ranging from Kohlberg’s hypothetical dilemmas to unethical activity and the process of criminal execution (Osofsky, Bandura & Zimbardo, 2005). Moral agency and MD have been researched extensively in association to ethical issues (DeLisi et al., 2014; Detert, Treviño, & Sweitzer, 2008; Paciello et al., 2013); dishonesty in academic and sport performance (Boardley, Grix & Dewar, 2014; Farnese, Tramontano, Fida, & Paciello, 2011; Kohlberg, 1964); personality traits (Egan, Hughes & Palmer, 2015; Risser & Eckert, 2016) and substance abuse (Newton, Andrews, Champion, & Teesson, 2014; Quinn & Bussey, 2015). Cannabis use is a comparatively innocuous behaviour, often perceived “harmless” in comparison to other types of misconduct (Sandberg, 2012). Nonetheless, where harm is caused (for example to a user’s mental and physical health) these consequences are considered no more harmful than substances such as alcohol (Hall, 2007).

The social acceptability of cannabis use is linked to increasingly libertarian views of the related harm caused by its consumption. Rather than social destructiveness, individuals likely understand their cannabis use to be a personal choice that, if not affecting others, is insufficient to be policed by authorities (Hall & Lynskey, 2009). However, this is not always the reality of the issue and is in fact the opposite in more social contexts, such as student populations. Here, moral diffusion occurs in the widely-stated claim that “Everybody does it!” (Gabor, 1994; Sandberg, 2012).

Normalisation (Parker, Williams & Aldridge, 2002) further promotes the social acceptability of cannabis as a drug, despite the nature of the trade meaning most individuals are ultimately unaware of the societal harm they may be causing through subsidising organised crime with links to harder drugs and people-trading. The aforementioned libertarian argument for cannabis use (Hall & Lynskey, 2009) is thus not comprehensive while cannabis remains illegal (Hall, 1997).

Intervention-style Manipulation

Although moral behaviour is predetermined by personality and social norms, when one is faced with a dilemma, their situational context should also be considered (Bee, 1994). This covers factors such as the costs and benefits of a behaviour and the level(s) of sanctions threatened (personal, social & societal). For intervention research, these contexts can be thought of as differing targeted approaches to treatment.

The benefits of cannabis use in the UK range from the psychoactive hedonic effect of feeling 'high' (Rella, 2015; WHO, 2016) to medicinal benefits (Ware, Adams & Guy, 2004) and social enhancement (Coggans & McKellar, 1994). However, cannabis use has been widely linked to negative health effects from simply smoking, as well as inducing psychosis in vulnerable individuals (WHO, 2016; Wilkinson, Radhakrishnan, & D'Souza, 2014). To moderate consumption, research studies have explored cannabis use and effective brief interventions such as personalised motivational interviewing (Martin, Copeland & Swift, 2005), Cognitive Behavioral Therapy (Copeland, Swift & Rees, 2001; Copeland, Swift, Roffman & Stephens, 2001), as well as mixed treatment therapy (Dennis, et al., 2004; Lang, Englander & Brooke, 2000).

The present study explores inexpensive and brief psychoeducational intervention, to re-establish knowledge of risks and benefits of cannabis use, as opposed to active therapeutic approaches. Administering a brief manipulation which highlights the hedonic, health and criminal effects of cannabis use, tests whether it may be possible to re-activate an individuals' self-regulating mechanisms and moral agency.

Health promotion is the primary approach to prevention and treatment of behavioural challenges in adolescents (Catalano et al., 2012). The method can be characterised by a focus on holistic wellbeing, as well as good mental, physical and emotional health (O'Connell, Boat, Warner & National Research Council, 2009). Bandura (2004) outlines several socio-cognitive determinants of health education and behaviour, where self-management of health is concerned. As such, in line with the Health Beliefs Model (Rosenstock, 1974), raising the salience of an individuals' knowledge of the benefits and risks of a behaviour, as well as the expected outcomes should permit influence informed lifestyle choices to prolong one's health. Depicting in physical health seeking, Hausenblas, Carron & Mack (1997) determined large effect sizes in a meta-analysis of the relationships between exercise, intention and attitudes.

Perceived Control over Behaviour

Established psycho-social cognitions behind substance abuse are widely linked to theories of reasoned action (TRA) and planned behaviour. Behavioural beliefs are derived from the prospect of certain outcomes being realised. It is on this foundation that attitudes are built. TRA suggest that one's intention to carry out a behaviour depends on their attitudes towards it (Armitage et al., 1999). Alongside an individual's attitudes, behavioural beliefs and intentions, their perceived control of action plays a facilitating or inhibiting role (Ajzen, 2002; Albarracin, Johnson,

Fishbein & Muellerleile, 2001; Bandura, 2004; Fishbein & Azjen, 2011; Sheppard, Hartwick, & Warshaw, 1988). The individual's perceived self-efficacy to exercise control over their behaviour also plays a part in their motivation and intention to change.

Current Study & Aims

The current study chiefly investigates individuals' ABB and intentions towards cannabis use, alongside processes of MD to facilitate this behaviour.

Intervention-like manipulations will be investigated between subjects through exposure to a brief video clip lasting between two and three minutes. These will randomly present one of four possible clips; the hedonic effects of cannabis use (education about the self-serving, personal aspects of illicit drug use); the health effects of cannabis use (highlighting personal and social risks to health); or the criminal effects a society and the personal consequences if charged. A fourth control condition will also be administered.

The aim of this study was to identify whether ABB and MD in adults can be influenced by brief educational intervention describing the hedonic, health or criminal effects of cannabis use compared to a control condition. This was done by making a comparison of baseline to post manipulation scores in relation to the clip shown. If significant effects were found, subsequent analyses investigated between which conditions these differences were significant.

The study will examine which of the eight MD mechanisms are most significantly linked to cannabis use in adults, and which are not. Further investigations antecedent interactions of individual differences in cannabis users as predisposing factors of cannabis use and MD were also explored.

Expectations

It was expected that there will be a significant difference between baseline and post manipulation ABB and MD scores when compared to controls. Specific to intervention, participants were predicted to show a significant decrease in ABB and the use of MD after intervention in health effects, while other conditions would not.

Secondary to this, mechanisms diffusing responsibility, attributing blame for criminal responsibility, and disregarding consequences of any harm caused were predicted to be significantly associated with ABB.

Individual differences such as low conscientiousness, high Openness to Experience (Brief HEXACO; De Vries, 2013) and Sensation Seeking (SUPPS-P; Lynam, 2013) were tested as potential predisposing vulnerabilities of recorded influence (or lack of influence) of manipulation on participants.

Methodology

Participants

A total of 176 participants completed the survey (80 males, 94 females, & 2 other). The sample was gained through convenience on social media platforms, university emails and by word of mouth. The mean age of the sample was 24.13 years ($SD = 7.77$, range 18-79). The criteria of the study in relation to the desired participants were that they were of adult age (18+ years) and had used cannabis within the past five years.

Design

Using a mixed methods internet-mediated experimental design, the study's independent variable (IV) between groups was one of the four conditions of intervention type that participants were exposed to (including a control condition of the same format). Participants were allocated randomly, by a question in the survey that selected a number at random (1-4), which then routed their progress to one of the four conditions.

The dependant variables (DV) consisted of the participant's initial responses to four consecutive questionnaires in the survey at baseline testing. Subsequent retest responses of two questionnaires were collected post-manipulation.

Procedure

The study was generated and distributed on Bristol Online Survey (BOS, 2017). The study took around 20 minutes to complete on the participants' choice of online electronic device (112 items). Participants were provided with briefing information on the study and all provided informed consent (see Appendix A for the Participant Information sheet).

Questions on Demographic information gathered data on gender, and age. A six-point multiple choice question explored participants' last cannabis use. Refer to Table 1 for time descriptions used and frequencies of participants' last cannabis use.

Table 1

Participants' last cannabis use

Last Cannabis Use	<i>N</i>	%
Less than 24 hours ago	30	17
Less than 7 days ago	30	17
Less than a month ago	24	14
3 to 6 months ago	30	17
6 months to 1 year ago	28	16
More than one year ago (up to 5 years)	34	19
Totals	176	100

Participants were then asked to respond to four measures on ABB, MD, personality and impulsivity (described under 'Materials' and detailed in Appendices C-G).

Next, participants were given a routing question requiring them to choose one of the numbers presented at random (1-4) and continue to the manipulation stage of the survey. Participants were allocated the hedonic effects condition for responses to one; the health Effects condition for responses to 2; the criminal effects condition for responses to 3 and 4 led to the control condition.

The manipulation page in the survey incorporated instructions for participants to watch and listen to the relevant YouTube video clip embedded on the page

(described under 'Materials', website links and transcriptions in Appendix G). After this, all participants responded to the identical ABB and MD scales again before submitting their data and prior to receiving a full participant debrief (See Appendix B).

Ethical considerations

The study was approved by the Division of Applied Psychiatry and Psychology Research Ethics Committee at the University of Nottingham and adhered to BPS guidelines on Internet-mediated research (British Psychological Society, 2013). Data submitted was entirely anonymous and therefore could not be withdrawn once complete. There was limited risk of psychological harm predicted from partaking in the study. Participants were provided with website links (NHS Choices, Talk To Frank [UK sources] & WHO [International source]) to access information and support from the following sources respectively:

<http://www.nhs.uk/Livewell/drugs/Pages/cannabis-facts;>

<http://www.talktofrank.com/drug/cannabis;>

[http://www.who.int/substance_abuse/facts/cannabis/.](http://www.who.int/substance_abuse/facts/cannabis/)

Partial deception was used in this study, by withholding extensive information on participants' different conditions and expected outcomes from exposure to the manipulation. Full information on the nature of the study and researcher contact details were also provided upon debrief (Appendix B).

Measures & Materials

Below are descriptions of the measures and materials used to collect participant data in the current study.

Attitudes and Behavioural Beliefs Questionnaire

A total of ten 7-point scaled items on participants ABB's towards cannabis use were used, adapted from Armitage et al.,'s (1999)'s Attitude, Behavioural Beliefs and Intention items. The scale items were relevant to the current investigations and reliable in the original study (attitude variable questions [1-4] had a reliability of 0.88). The items adapted Bandura's (2004) socio-cognitive theoretical tenets of perceived control, as well as personal and social outcome expectations and risks. The final question in the ABB questionnaire was on one's behavioural intention of future use (or personal change (see Appendix C for all items of the ABB and scoring), measured against five points. In the present study, behavioural intention was measured as an immediate predictor of future behaviour (Ajzen, 2002 ; Fishbein & Ajzen, 2011). All items of the ABB questionnaire were administered at baseline and after manipulation.

Moral Disengagement Scale

The Adult MD scale (MDS ; Detert et al., 2008), adapted from Bandura et al. (1996) child scale has been used to score MD in participants and categorise mechanisms of selective MD scored by individuals (see Appendix D for the full MD scale and scoring). As an adapted 24-item scale, this an efficient- yet robust measure (reliability $\alpha=.87$), using the three best-fitting items per MD mechanism subscale. In the original paper, all of the items loaded on their factor over 0.40, with no cross loadings greater than 0.25 (Detert, Treviño & Sweitzer, 2008). The MDS was administered at baseline and after manipulation.

Brief HEXACO

The 24-item Brief HEXACO (De Vries, 2013; see Appendix E for items and scoring) is adapted from versions of the 60-100+ item HEXACO Personality Inventory (Lee & Ashton, 2004). The scale assesses domains of personality based on the six major dimensions of personality: Honesty-Humility, Emotionality, Extraversion, Agreeableness (versus Anger), Conscientiousness and Openness to Experience. Only just acceptable in alpha reliability, this brief scale provides four statements per domain (one per facet) with convergent correlations compared to the original HEXACO Personality Inventory-Revised (Ashton & Lee, 2009), that have a validity loss of only 0.16. This measure was deemed sufficient as personality was not the primary focus of the study. The Brief HEXACO was administered only at baseline.

Short UPPs (SUPPS-P)

The Short Version of the UPPS Impulsive Behaviour scale (SUPPS-P; see Appendix F for items & scoring) assessed impulsivity using 59 items within five subscales: urgency, premeditation, perseverance, sensation seeking, and positive urgency (Lynam, 2013). SUPPS-P replicated the internal consistency across subscales (0.74-0.88) and inter-scale correlations with the full UPPS-P, while saving 66% participation time by removing highly correlated items (Cyders, Littlefield, Coffey & Karyadi, 2014).

Psychoeducation Intervention-style Video Clips

These psychoeducational clips were sourced on YouTube to depict the hedonic (Appendix G.1), health (Appendix G.2) and criminal effects (Appendix G.3) linked to illicit cannabis use. A final arbitrary control condition (Appendix G.4) of the

'March of the Penguins' film trailer was also presented (See Table 2 for frequencies of distribution).

Table 2

Participant allocation of Intervention Type

Intervention Type	<i>N</i>	%
Hedonic Effects	24	14
Health Effects	45	25
Criminal Effects	56	32
Control	51	29
Totals	176	100

Plan of Data Analysis

An a priori G* Power sample size calculation (3.1, Faul, Erdfelder Lang & Buchner, 2007) recommended a minimum sample size of $N = 179$ participants in total with a medium effect size ($f = .25$), with power ($1 - \beta$) set at 0.80 ($p = 0.05$). All questionnaires and scales were to be initially tested for reliability and normality.

Results

Initial Tests

The ABB measure yielded an acceptable reliability statistic of Cronbach's $\alpha = 0.72$. The adult MD Scale (Detert et al., 2008) generated a very high reliability ($\alpha =$

0.90), although the individual MD mechanism subscales were quite variable ($\alpha < .07$).

Individual scales of the Brief HEXACO, SUPPS-P produced reliabilities of $\alpha = .70$ and below. Thus, no extensive analyses on data exploring the Brief HEXACO or Short UPPS were carried out (De Vries, 2013; Lynam, 2013). Data showed no extreme Kurtotic data (Kurtosis = ± 1.00).

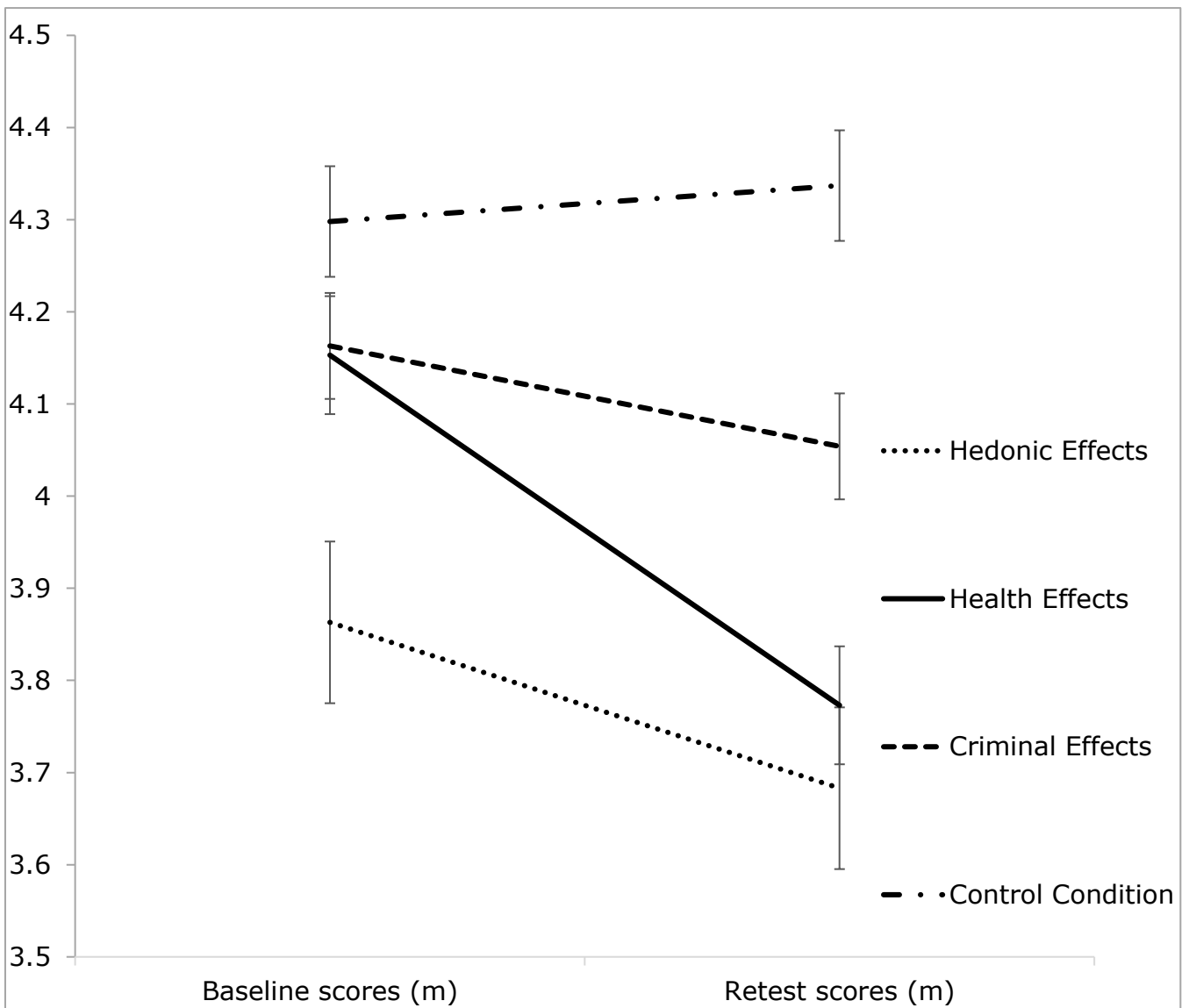
A factor analysis of the eight MD mechanisms was analysed. The Kaiser-Meyer-Olkin measure of sampling adequacy was .88, above the acceptable value of 0.7. Bartlett's test of sphericity was significant ($\chi^2 (28) = 808.24, p = 0.00$). Only one component with an eigenvalue of 4.74 was extracted, of which 60% of overall variance of the MD mechanisms are highly correlated due to common source variance.

Effect of Intervention

A repeated Measures ANOVA on ABB scores and Intervention Type showed that there was a significant effect of reduction in intention to use cannabis between Intervention Type and ABB scores at baseline and post intervention ($F (3,172) = 4.575, p = .004, \eta p^2 = 0.07, \text{observed power} = 0.94$). As shown in Graph 1, Post Hoc tests using Least Significant Difference (LSD) revealed that participants' ABB towards cannabis use reduced significantly whether shown an intervention of hedonic effects compared to the control condition ($M \text{ difference} = -.54, SE = .20, p = .007$) or health compared to the control ($M \text{ difference} = -.35, SE = .17, p = .034$). None of the intervention types significantly differed in comparison to the criminal effects approach.

A paired samples T-test comparing MD scores at baseline ($M = 2.35, SD = .65$) and after intervention ($M = 2.28, SD = .67$), showed a significant decrease in MD score $t(175) = 3.44, p = 0.001$.

A subsequent repeated Measures ANOVA on MD scores and Intervention Type showed that there was a significant effect of difference between Intervention Type and MD scores before and after intervention ($F(3,172) = 2.95, p = .034, \eta p^2 = 0.05$, observed power = 0.69). However, post hoc tests of LSD showed no significant differences between intervention types.



Graph 1: Mean attitude and behavioural belief baseline scores compared to retest scores after intervention. This illustrates the significant decrease following health and hedonic effects of cannabis use, when compared to the control condition.

Correlations

Refer to Table 3 for positive correlations among MD, its eight mechanisms and Behavioural Intention. Only one correlation was not significant: for Behavioural Intention score and the Moral Justification mechanism.

Table 3

Correlations of behavioural intention, MD and MD mechanisms and primary research scale reliabilities

	BI(ABB)	MD	MJ	EL	AC	DISR	DIFR	DC	AB	DEH
BI	(.72)									
MD	.34**	(.68)								
MJ	.67**	.68**	(.54)							
EL	.28**	.78**	.61**	(.67)						
AC	.20**	.81**	.55**	.66**	(.77)					
DISR	.29**	.75**	.43**	.51**	.65**	(.69)				
DIFR	.25**	.62**	.24**	.32**	.38**	.50**	(.46)			
DC	.37**	.82**	.43**	.55**	.53**	.48**	.54**	(.82)		
AB	.29**	.84**	.52**	.53**	.58**	.52**	.48**	.76**	(.62)	
DEH	.32**	.83**	.44**	.57**	.59**	.54**	.41**	.71**	.32**	(.72)

Note: $N = 176$. Correlation is significant for $p < .001$ (2-tailed). Numbers within brackets represent individual subscale reliabilities. BI = 'Behavioural Intention', item 10 on the ABB Questionnaire (ABB scale reliability); MD = moral disengagement total score; MJ =

moral justification; EL = euphemistic labelling; AC = advantageous comparison; DISR = displacement of responsibility; DIFR = diffusion of responsibility; DC = disregarding or distorting consequences; AB = attribution of blame; DEH = dehumanisation.

Further Exploratory Analyses

A one-way ANCOVA was conducted to compare the effectiveness of Intervention on ABB scores whilst controlling for MD. The significant difference in ABB scores ($F(3,170) = 2.77, p=0.043, \eta p^2 = 0.047$) between the interventions remained even after MD was controlled for.

Discussion

Current Findings & Implications

The current findings support the primary expected outcomes of an effective brief intervention in changing attitudes towards cannabis use. Most significantly, both health *and* hedonic approaches to psychoeducation resulted in reduced ABB score of positive attitudes towards cannabis. This means participants had less positive attitudes to using cannabis as a result of simply being advised. Arguably, having re-established knowledge of the health risks of cannabis use, participants reduced their MD and reinstated their moral agency having experienced intervention (Bandura, 2004).

The correlation of 0.34 between MD and behavioural intention also supports expected associations between MD and ABB towards cannabis. The findings suggest that socio-cognitive processes in the consideration of illicit behaviour adopt MD as a means of ameliorating their expected self-censure (Bandura, 1999a; 2004; Bandura et al., 1996) from intending to use cannabis again. Albarracin et al., (2001), similarly supported TRA models for behavioural intention in relation to sexual health, where attitudes and norms would moderate intention.

The brief crime focussed intervention might not have been an effective approach, because individuals are still able to self-servingly justify cannabis use (Bandura, 1991). This is likely a result of experience of these prohibitions and sanctions not actually causing threat despite highlighted detrimental effects to the wider community.

The possession of cannabis places individuals at risk of fines, or imprisonment (Home Office, 2009); however, to be sanctioned for cannabis using, the behaviour must take place in a setting where authorities can observe this and penalise them

for it. Furthermore, police figures have been reported to depict that only one in four individuals in possession of cannabis are actually arrested and charged (Independent, 2016). Thus, evidence of authority's reduced prioritisation of tackling cannabis use (BBC, 2016) results in a perception of minimised possible harmful effects. The observed lack of a significant effective reduction in ABB and MD when exposed to the criminal effects also reiterates popular opinions regarding the debate about the legalisation of cannabis, and suggests discussion is best kept to factual matters.

Cannabidiol, the calming substance retrieved from cannabis- is now considered a medicine in the UK (Medicines & Healthcare products Regulatory Agency [MHRA], 2016). Such advancements in legislation gave way to authorised marketing and quality production of cannabidiol. These components of the drug do not interact with the illegitimate business of its derivative; THC, (Castellanos-Ryan et al., 2016), the primary psychoactive compound in cannabis. Mirroring society's pro-cannabis stance (Hall, 2007; Hall & Lynsey, 2009) such findings add to the debate of whether these developments can at least shape the reclassification of cannabis as an illicit drug to Class C (HM Government Strategy, 2008; May, Duffy & Hough, 2006). The increased acceptance of cannabis is not enough because the normalisation is present within social groups rather than wider societal level (Bandura, 2002; Berg et al., 2015; Sandberg, 2012). This is debated by numerous commentaries by David Nutt, who highlights the lesser destruction that cannabis would post to individuals if legal in the UK, particularly when no longer competing with synthetic cannabinoids and psychoactive substances such as "spice" in the illicit market (Nutt, 2017). While outside of the UK, shifts towards the legalisation of cannabis are evident in US states, Canada and Uruguay (Hajizadeh, 2016; Pardo, 2014) and closer to home, Amsterdam decriminalises cannabis use, with

its "coffee shop culture". Yet from monitoring local cannabis use, the regime seems to normalise cannabis, while modifying attitudes based on a balance between public health and hedonism (MacCoun, 2011).

Despite a significant difference in MDS scores before and after intervention, the findings of MD scores compared to intervention type are conservative in comparison to that of the ABB scores. This suggests MD is a stable quality ($r=.92$), highlighting a short term test retest effect. This may be a result of a more morally established adult sample of respondents compared to the young sample in previous research (Quinn & Bussey, 2015) who showed changes in MD when responding to a contextualised (underage drinking disengagement) scale. Irrespective of intervention, there was a basic significant positive correlation between MD and the ABB behavioural intention item, showing that individuals who want to use cannabis more in the future are more likely to use MD as a socio-cognitive means to justify their action, or, that individuals higher in MD are more likely to use cannabis. Although individuals use MD mechanisms to differing degrees, the factor analytic findings show that the MD mechanisms are not substantively or statistically independent from one another. While mechanisms diffusing responsibility, attributing blame for criminal responsibility and disregarding consequences were significantly correlated to higher future intentions to indulge, the factor analyses suggest that cognitions of MD may be activated through a single component encompassing moral principles as a whole, as demonstrated in Sandberg's findings of over 100 qualitative interviews: cannabis users tend to deny the risk of cannabis use (2012). Which is a concept comparable to the MD as a whole rather than individualised mechanisms.

The significance of the hedonic Effects intervention, particularly as a more neutral educational approach to cannabis use was unexpected. These findings may

suggest that the possible psychoeducational method of intervention inherently elicits an internal health Beliefs Models and the intention to control this without necessarily having to spell out the risks of a behaviour (Armitage et al., 1999) Bandura, 2004; Rosenstock, 1974).

Despite not quite meeting the desired participant number according to an a priori analysis ($N=176$ rather than $N=179$; G*Power 3.1, Faul et al., 2007) the results of the ABB yielded a high observed power in significant findings, while MD, generated low to moderate power in significant findings. This provides confidence that by extending the survey distribution period and increasing the dataset, more statistically powerful and significant data may be gathered from the design.

Study limitations & Opportunities for Future Research

While there are several future research opportunities derived from the current study, maintaining the very brief nature of the intervention would provide an extremely cost effective, digital psychoeducational intervention for cannabis use.

Adaptations of the current study could explore cannabis use patterns, for example frequency (such as in Martin, Copeland & Swift, 2005), to provide the extent of participants' cannabis abuse, and any interactions of effectiveness on the severity of the cannabis abusing. This could better inform the target population intended for cannabis users based on the findings of the study by, for example, encouraging moderate and context-appropriate use.

The convenience sampling through social media and academic research networks was particularly useful in testing the hypotheses because of the more accepting attitude many young people have towards marijuana. Along with this, participants' access to similar channels- internet users- enabled a wider and organic distribution of the study. However, it would be valuable to extend the study, and investigate

further actual drug-use behaviour through follow up after a set time has passed. This would provide real-world evidence of brief interventions made overtime (such as in Armitage et al.'s study, 1999). This could also incorporate items of self-efficacy following behavioural intention in the ABB, to reduce the possible observed goal-intention discrepancy (Ajzen, 2002; Sheppard et al.,1988).

With supplementary resources, researchers could develop a reliable and contextualised MD scale for cannabis use, similar to Quinn & Bussey's (2015) for underage alcohol dependency. This adaptation may result in less conservative retest scores, due to context specific probes of MD, and could potentially provide a better picture of mechanism-based MD in cannabis use. Further resources could be put into producing the content of manipulation, rather than relying on uncontrolled, pre-produced varied video clips. For research purposes, this would be succinct, independent and provide further control of the IVs investigated in the study.

Research to further understand reasons behind the significant reductions in pro-cannabis ABB for the hedonic effects intervention could be valuable to explore particularly the more neutral educational approach to cannabis use. These findings may suggest that psychoeducational methods of intervention inherently elicit internal health Beliefs Models and the intention to control them without necessarily having to spell out the risks of a behaviour (Armitage et al., 1999; Bandura, 2004; Rosenstock, 1974).

Research to further understand reasons behind the significant reductions in pro-cannabis ABB for the hedonic effect intervention approach could be carried out to establish whether neutral interventions also prompt an individual's self-regulation and Health Beliefs Model (Armitage et al., 1997; Bandura 1999b).

Conclusions

The present study has found that ABB and intentions to use cannabis in the future are significantly influenced by brief targeted interventions that educate about the hedonic and health effects of cannabis use. Links between behavioural intention and MD found associations between MD as a whole and participants' increased intention to use the drug. The current study exemplifies the effectiveness of cost effective, brief digital interventions for challenging behaviour, portraying further successes of health-focussed interventions influencing attitudes and behavioural intentions in individuals' who possess moral agency and perceived self- control.

Word count: 5,840 words.

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Appendices

Appendix A

Participant Information Form



PARTICIPANT INFORMATION

Division of Psychiatry & Applied Psychology

School of Medicine, Faculty of Medicine & Health Sciences

Project Title: Moral Disengagement and individual differences in cannabis use:

Investigating perspectives of effective intervention in adults

Researcher: Faith Mbewe (faith.mbewe@nottingham.ac.uk)

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

Ethics Reference Number: 238

This is an invitation to take part in a research study about adult cannabis use, moral disengagement and individual differences. This information is designed to tell you what it will involve.

Your participation is voluntary, and you may change your mind about being involved without giving a reason. You are free to withdraw at any point before or during the study. Once you have finished the questionnaire and submitted your answers it is not possible to withdraw the data because it will be anonymous.

What is the project about?

Though cannabis use may be seen as a personal matter, it requires involvement with criminal networks to indulge. Individuals can use mechanisms to disengage their moral agency when using cannabis, reducing their resulting guilt from the behaviour.

The current study will explore moral disengagement mechanisms behind cannabis use, along with interacting individual differences, and the effect of these on an intervention-like manipulation.

Who is being asked to take part, and why?

We invite individuals who currently use cannabis or have done so in the past 5 years to take part in this study. You must be over the age of 18 to participate because we are only interested in adult attitudes to cannabis use. Participation is unlikely to be of direct personal benefit to the participant.

What will I be asked to do?

In this survey, you will be asked your age and gender, before answering 2 questions on your cannabis use. No identifying information, such as name or address, will be recorded. You will then complete a series of four brief scaled questionnaires on Attitude and behavioural belief, Moral disengagement, Personality and Impulsivity. You will then be presented with one 2-3 minute video clip to watch. Finally, you will be asked to repeat the questionnaires on attitude and behavioural belief and moral disengagement. This survey will take no more than 20 minutes.

Will the research be of any personal benefit to the researcher?

The research is being carried out for a Master's dissertation. The findings of the study are potentially applicable to public health and crime prevention planning.

To see the outcome of the study, please email the researcher (faith.mbewe@nottingham.ac.uk).

What will happen to the information I provide?

Your survey answers will be remain anonymous and confidential, with no information enabling identification of individuals. The data provided will be stored securely for statistical analyses, accessed only by the researcher and supervisor.

What will we do with the data?

The data will be handled confidentially and securely, before being destroyed.

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

If you have any queries or complaints about this study, please contact the student's supervisor in the first instance. If this does not resolve the query to your satisfaction, please write to the Administrator to the Division of Psychiatry & Applied Psychology's Research Ethics Committee (MS-DPAPEthics@nottingham.ac.uk, +44 (0)115 8232214) who will pass your query to the Chair of the Committee

We believe there are no known risks associated with this research study; however, as with any online related activity the risk of a breach is always possible. We will do everything possible to ensure your answers in this study will remain anonymous. We will minimise any risks by anonymising all participant data, which will only be accessed only by the researcher and

supervisor. The Raw data will be archived securely in the university, and destroyed at the earliest point legally possible.

Should you choose to withdraw from the study before completing it, you will still have an opportunity to view the debrief.

In the unlikely case that you experience any distress following taking part in this research, we suggest that you contact your GP for support. If you live in the UK, you can access following information services:

NHS Choices (<http://www.nhs.uk/Livewell/drugs/Pages/cannabis-facts>) or

FRANK (<http://www.talktofrank.com/drug/cannabis>). If you are from overseas,

please access the World Health Organisation

(http://www.who.int/substance_abuse/facts/cannabis/).

Appendix B

Participant Debrief Form



THANK YOU FOR YOUR PARTICIPATION

Your participation can no longer be withdrawn from the study, as your data is anonymous.

The current research aims to investigate if brief targeted and psychoeducational intervention approaches will cause change in attitudes, behavioural beliefs and intentions, as well as moral disengagement. This will be by comparing your initial responses to the ones you provided after manipulation. There were four possible conditions of the video clip you watched: some participants watched a clip on the hedonic effects of cannabis use, while others saw a video clip on health or criminal effects. If you watched the March of the Penguins, you received the control (random) condition.

In the unlikely case that you experience any distress following taking part in this research, we suggest that you contact your GP for information regarding support. For more information on cannabis use, please refer to the links below.

UK participants: NHS Choices

(<http://www.nhs.uk/Livewell/drugs/Pages/cannabis-facts>) or FRANK

(<http://www.talktofrank.com/drug/cannabis>). Overseas participants: World

Health Organisation: http://www.who.int/substance_abuse/facts/cannabis/

If you have any queries or complaints about this study, please contact the student's supervisor in the first instance. If this does not resolve the query to your satisfaction, please write to the Administrator to the Division of Psychiatry & Applied Psychology's Research Ethics Committee (MS-DPAPEthics@nottingham.ac.uk, +44 (0)115 8232214) who will pass your query to the Chair of the Committee

Researcher: Faith Mbewe (faith.mbewe@nottingham.ac.uk)

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

Ethics Reference Number: 238

Appendix C

Attitudes & Behavioural Beliefs Questionnaire

Attitudes (adapted from Armitage, Armitage, Connor, Loach & Willets, 1999):

Attitude was assessed using four items on a 7-point bipolar scale ranging from +3 (prosocial) to -3 (antisocial). These are anchored by bad-good, unfavourable-favourable, negative-positive and satisfactory-unsatisfactory.

Behavioural Belief components (adapted from Armitage, Armitage, Connor,

Loach & Willets, 1999): Behavioural beliefs were measured on 7-point bipolar scale ranging from +3 (prosocial) to -3 (antisocial) scales anchored by true and false.

Statement	7-point Scale						
1. "I think that my use of cannabis is..."	Bad						Good
2. "I think that my use of cannabis has effects on my life that are..."	Unfavourable						Favourable
3. "I think that my use of cannabis has effects on my life that are..."	Negative						Positive
4. "Other people view the effect that my cannabis use has on my life as..."	Unsatisfactory						Satisfactory
5. "Cannabis makes me more sociable"	False						True
6. "Cannabis leads to me having poorer physical health"	False						True

7. "Cannabis makes me feel good"	False							True
8. "Cannabis will result in my becoming dependent on it"	False							True
9. "Cannabis will result in me getting into trouble with authority"	False							True

10. Behavioural Intention:

"In the future, I expect to use cannabis..." Much less than I currently use it/
Less than I currently use it/ The same as I currently use it/ More than I currently
use it/ Much more than I currently use it

Scoring

Higher scores indicate pro-cannabis ABB. Items that are reverse scored: 6, 8 &
9.

Appendix D

Adult Moral Disengagement Scale

(Detert, Treviño & Sweitzer, 2008; adapted from Bandura et al., 1996)

Item	Scale
25. It is alright to fight to protect your friends	MJ
26. Sharing test question answers is just a way of helping your friends	EL
27. Damaging some property is no big deal when you consider that others are beating people up	AC
28. If people are living under bad conditions, they cannot be blamed for behaving aggressively	DISR
29. A member of a group or team should not be blamed for the trouble the team caused	DIFR
30. Some people deserve to be treated like animals	DEH
31. It's ok to steal to take care of your family's needs	MJ
32. Talking about people behind their backs is just part of the game	EL
33. Stealing some money is not too serious compared to those who steal a lot of money	AC
34. People don't mind being teased because it shows interest in them	DC
35. If someone leaves something lying around, it's their own fault if it gets stolen	AB
36. It is ok to pick on an unimportant little person	DEH
37. It's ok to attack someone who threatens your family's honour	MJ

38. Looking at a friend's work without permission is just "borrowing it"	EL
39. If someone is pressured into doing something, they shouldn't be blamed for it	DISR
40. If a group decides to do something harmful, it is unfair to blame any one member of the group	DIFR
41. Teasing someone does not really hurt them	DC
42. People who are mistreated have usually done things to deserve it	AB
43. Someone who is obnoxious does not deserve to be treated like a human being	DEH
44. Compared to other illegal things people do, taking some things from a store without paying for them is not very serious	AC
45. People cannot be blamed for misbehaving if their friends pressured them to do it	DISR
46. You can't blame a person who plays only a small part in the harm caused by a group	DIFR
47. Insults don't really hurt anyone	DC
48. People are not at fault for misbehaving at work if their managers mistreat them	AB

Assessed using a 5- point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

MJ = moral justification

EL = euphemistic labelling

AC = advantageous comparison

DISR = displacement of responsibility

DIFR = diffusion of responsibility

DC = disregarding or distorting consequences

DEH = dehumanization

AB = attribution of blame.

Appendix E

Brief HEXACO

The Brief HEXACO Inventory (BHI; De Vries, 2013)

Instructions: Please indicate to what extent you agree with the following statements, using the following answering categories: 1=strongly disagree, 2=disagree, 3=neutral (neither agree, nor disagree), 4=agree, and 5=strongly agree.

English version (adapted slightly)

25.I can look at a painting for a long time.

26.I make sure that things are in the right spot.

27.I remain unfriendly to someone who has been mean to me.

28.No one likes to talk to me.

29.I am afraid of feeling pain.

30.I find it difficult to lie.

31.I think science is boring.

32.I postpone complicated tasks for as long as possible.

33.I often express criticism.

34.I easily approach strangers.

35.I worry less than others.

36.I would like to know how to make lots of money in a dishonest manner.

37.I have a big imagination.

- 38.I work very precisely.
- 39.I tend to quickly agree with others.
- 40.I like to talk with others.
- 41.I can easily overcome difficulties on my own.
- 42.I want to be famous.
- 43.I like people with strange ideas.
- 44.I often do things without really thinking.
- 45.Even when I'm treated badly, I remain calm.
- 46.I am seldom cheerful.
- 47.I tend to cry during sad or romantic movies.
- 48.I am entitled to special treatment.

Scoring

Recode scores of items followed with an 'R' as: 5→1, 4→2, 3→3, 2→4, 1→5

Honesty-Humility: 6, 12R, 18R, 24R

Emotionality: 5, 11R, 17R, 23

Extraversion: 4R, 10, 16, 22R

Agreeableness: 3R, 9R, 15, 21

Conscientiousness: 2, 8R, 14, 14

Openness to Experience: 1, 7R, 13, 19

Appendix F

Short UPPS-P (Lynam, 2013; adapted from Whiteside & Lynam, 2001)

Below are a number of statements that describe ways in which people act and think. For each statement, please indicate how much you agree or disagree with the statement. If you **Strongly** circle **1**, if you **Agree Somewhat** circle **2**, if you **Disagree somewhat** circle **3**, and if you **Disagree Strongly** circle **4**. Be sure to indicate your agreement or disagreement for every statement below.

Short UPPS

1. When I feel bad, I will often do things I later regret in order to make myself feel better now.
2. Sometimes when I feel bad, I can't seem to stop what I am doing even though it is making me feel worse.
3. When I am upset I often act without thinking.
4. When I feel rejected, I will often say things that I later regret.
5. I generally like to see things through to the end.
6. Unfinished tasks really bother me.
7. Once I get going on something I hate to stop.
8. I finish what I start.
9. My thinking is usually careful and purposeful.
10. I like to stop and think things over before I do them.
11. I tend to value and follow a rational, "sensible" approach to things.

- 12.I usually think carefully before doing anything.
- 13.I quite enjoy taking risks.
- 14.I welcome new and exciting experiences and sensations, even if they are a little frightening and unconventional.
- 15.I would like to learn to fly an airplane.
- 16.I would enjoy the sensation of skiing very fast down a high mountain slope.
- 17.When I am in great mood, I tend to get into situations that could cause me problems.
- 18.I tend to lose control when I am in a great mood.
- 19.Others are shocked or worried about the things I do when I am feeling very excited.
- 20.I tend to act without thinking when I am really excited.

Scoring: Final Items Included in the SUPPS-P (Lynam, 2013)

Negative Urgency (M = 1.35, SD = 0.70; Range: 0.00 – 3.00; α = 0.78)

6. (14.) When I feel bad, I will often do things I later regret in order to make myself feel better now.
8. (18.) Sometimes when I feel bad, I can't seem to stop what I am doing even though it is making me feel worse.
13. (24.) When I am upset, I often act without thinking.
15. (28.) When I feel rejected, I will often say things that I later regret.

Lack of Perseverance (M = 0.64, SD = 0.54; Range: 0.00 – 2.67; α = 0.79)

- 1. (4.) I generally like to see things through to the end. (R)
- 4. (12.) Unfinished tasks really bother me. (R)
- 7. (16.) Once I get going on something I hate to stop. (R)
- 11. (22.) I finish what I start.

Lack of Premeditation (M = 0.80, SD = 0.56; Range: 0.00 – 2.50; α = 0.85)

- 2. (5.) My thinking is usually careful and purposeful.
- 5. (13.) I like to stop and think things over before I do them. (R)
- 12. (23.) I tend to value and follow a rational, "sensible" approach to things. (R)
- 19. (39.) I usually think carefully before doing anything. (R)

Sensation Seeking (M = 1.78, SD = 0.73; Range: 0.00 – 3.00; α = 0.74)

- 9. (19.) I quite enjoy taking risks.
- 14. (25.) I welcome new and exciting experiences and sensations, even if they are a little frightening and unconventional.
- 16. (29.) I would like to learn to fly an airplane.
- 18. (37.) I would enjoy the sensation of skiing very fast down a high mountain slope.

Positive Urgency (M = 0.90, SD = 0.74; Range: 0.00 – 3.00; α = 0.85)

3. (10.) When I am in great mood, I tend to get into situations that could cause me problems.

10. (20.) I tend to lose control when I am in a great mood.

17. (35.) Others are shocked or worried about the things I do when I am feeling very excited.

20. (52.) I tend to act without thinking when I am really excited.

Note. Item numbers indicate the item order on the Short UPPS-P, whereas numbers in parentheses indicate the original item numbers on the UPPS-P. All items are rated on a four-point scale from 1 (strongly agree) to 4 (strongly disagree). Items with an (R) are reverse coded, so that higher values indicate more impulsive behaviour. Total subscale or Mean subscale scores can be calculated.

Appendix G

Exposure to Manipulation

The following video clips will be cut and embedded on the survey pages.

Descriptions provided below

G.1. Hedonic effect of cannabis use (from 54 seconds to 3.23minutes; BBC Earth Lab, 2016)

“What Does Cannabis Do To The Brain? - Brit Lab” is a clip of a man standing in front of a blue background talking. The main points are as follows:

- The active ingredients in the plant is mainly THC, along with cannabidiol. As the plant ripens, THC resin increases around the bud of the plant- the part that people buy to use.
- THC primarily affects the cannabinoid receptors (CB1) in the brain, affecting short term memory, coordination and problem solving. This also leads to the release of dopamine, which makes you happy.
- Cannabinoid counteracts the effects of THC, the source of the sedative and calming feelings. But this is affected by the methods that people use to take cannabis (smoking, eating or vaping cannabis)
- People almost immediately feel less anxious and in a better mood and get the giggles. People also experience the “munchies”, caused by THC binding to receptors in the hypothalamus, inhibiting the chemical signals that tell us not to eat. They also experience a heightened sense of smell.

G.2. Health Risks of cannabis (from 30 seconds to 2.36 minutes; Suiter, 2014)

“Drug Abuse/Risks to Total Health” is a clip of several animated slides accompanied by a female voice narrator. The main points are as follows:

- Drug abuse is under the intentionally using drugs in a way that is unhealthy or illegal, so smoking marijuana is abusing a drug because it is illegal. We can consider our total health to be represented by physical health, mental/emotional health and our social health.
- Drug abuse plays a role in our physical health. When under the influence of drugs, our brain and nervous system are affected. People can feel nauseated, confused and lose control of their body. It can also cause memory loss, seizures. If they become addicted to the drug, they can experience withdrawal symptoms.
- Drugs may be used to cope with uncomfortable feelings. But using them can affect the ability to think and learn and might have trouble relating to others. People can experience depression, anxiety and confusion as a result. This creates more problems as a result of the coping mechanism.
- Risks to our social health involves relationships with family and friends are caused due to difficulty dealing with others. Drug abuse can alter personality and users can experience mood swings, causing relationships to change.

G.3. Criminal risk & consequences of Cannabis (from 25.10minutes to 28.11 minutes; Rainsford, 2013)

“EXPOSURE - Britain's Booming Cannabis Business” is a documentary narrated by a man. The main points are as follows:

- In Liverpool, the police have a specific team that raids farms and destroys farms, and has raided nearly 300 farms in 9 months. The farms are hidden inside innocent looking private houses. Criminals often use more than to grow cannabis in, so police dismantle the plants and look for evidence that might lead them to other houses.
- Policeman: This house is worth between £50-70 grand worth of marijuana. we are dismantling at least two a day and sometimes more. £200million has been reportedly destroyed across the country, but that figure is likely higher.
- Organised crime groups are going away from large commercial sites to 10 growing houses in a community with 30 plants each. This method helps them avoid police detection, but spreads the risk.
- Organised crime groups steal each other’s crops at times. This leads to factional disputes over cannabis cultivation and feuds within the communities where violence takes place and firearms are discharged.

G.4. Control Stimuli (Movie clips, 2011)

“March of the Penguins Official Trailer #1 - (2005) HD”. A series of clips from the film narrated by a male:

- There is a mysterious ritual that dates back thousands of years. No living creature has survived it, except the penguin.

- They have wings, but cannot fly. They are birds that think they are fish. And every year they embark on the impossible journey to find a mate.
- For 20 days and 20 nights, the emperor penguin will march to a place so extreme, it supports no other life. In the harshest place on earth, love finds a way.
- This is the incredible true story of a family's journey to bring life into the world.
March of the penguins.

Executive summary

This Executive summary has been prepared for the National Treatment Agency for Substance Misuse (NTA), presenting a study that was completing for Master's level research.

Research Background and Rationale

The growing normalisation of cannabis use in pockets of society cannot be ignored (Sandberg, 2012). However this has been mirrored in recent years by the gradual decriminalisation of cannabis in legislation and policy on an international level. It still remains that in the UK, partaking in commercial trade and/ or consumption of cannabis exposes up to 2.1 million adults to criminal channels (Lader, 2015). Along with criminal risks, cannabis misuse can have physical and mental health hazards, that counteract with the sought after "high" that users experience. But it appears that these hazards may interact with additional factors present which facilitate or inhibit the detrimental and immoral behaviours of cannabis misuse.

The eight mechanisms people may use to selectively disengage are: moral justification, euphemistic labelling, advantageous comparison, displacement of responsibility, diffusion of responsibility, disregarding or distorting consequences, dehumanization and attribution of blame (Bandura 2002). By deactivating self-regulatory processes, individuals make cannabis use acceptable, often by maintaining ignorance of the detrimental effects of their behaviour or painting the

effects in the light that makes the behaviour more acceptable. Extensive research has considered the relationship between moral disengagement and immoral and antisocial behaviours.

Moral disengagement (Bandura, 2002) is a socio-cognitive process that people employ when they find themselves taking part in a behaviour that they would normally consider immoral; such as the criminal execution process (Osofsky, Bandura & Zimbardo, 2005). Though cannabis may be seen as a personal matter (Hall, 1997; 2007), the supply chain of cannabis misleads commercial users to believe a façade that it has no harmful effects on individuals or society, which leaves users naïve to the reality and unable to make informed decisions with regards to their drug use. Along with this, national shifts in Healthcare, towards the medicinal properties of Cannabidiol, derived from cannabis, means frequent cannabis users may be considered less radical (Medicines & Healthcare products Regulatory Agency, 2016).

Investigating antecedent concepts of individual differences, MD and attitudes, the current study seeks to explore how knowledge of the full consequences at hand could make individuals' pro-cannabis attitudes and behavioural intentions. A brief (2-3 minute video clip) was sufficient to ensure participant engagement in the content to tangibly test psychoeducational alternatives to therapeutic intervention.

As the primary approach to treatment and behavioural difficulties, a Health targeted manipulation informs participants' of the risks involved with cannabis use spanning one's holistic physical, mental and social health (encouraging self-preservative attitudes to cannabis).

Equivalent manipulations of the hedonic effects of cannabis use (neutral stance) and the criminal consequences (negative stance) were also administered between groups, along with an arbitrary control group that were exposed to marching penguins.

Measures used to gather baseline and retest data were the Adult MD Scale, an Attitudes and Behavioural beliefs (ABB) questionnaire, the brief HEXACO and Short-UPPs (Armitage et al., 1999; Detert et al., 2008; de Vries, 2013 & Lynam, 2013). Following manipulation, retest of participants MD and ABB provided post intervention comparisons towards cannabis use, including behavioural intention (Bandura, 2004). Data collected 112 response items in total on each participant.

Research Aims

The research aimed to identify if moral disengagement and attitudes/behavioural beliefs in adults can be influenced by information about either the hedonic, health or criminal consequences of cannabis use, compared to controls. And if the case, to highlight with which conditions these differences are significant.

Data Collection & Analysis

The study was internet-mediated, recruiting participants through convenience. The sample obtained was 176 participants (80 males, 94 females & 2 other). 60% of overall variance of the MD highly correlated due to common source variance, so MD would be explored as a single concept in this context. Reliability of scales and measures resulted in the exclusion of the Brief HEXACO and Short UPPS. Analyses of variance showed significant decrease in ABB following health *and* hedonic intervention when compared to controls groups. Significant positive correlations between MD and the behavioural intention item were also yielded.

Key Findings

The findings support the primary expected outcomes of an effective brief intervention in changing attitudes towards cannabis use. Significant results found between the control compared to health *and* hedonic interventions could be interpreted as participants having less positive attitudes to using cannabis as a result of being fairly impartially educated on the activity. Arguably, having re-established knowledge of the health risks of cannabis use, participants could have reduced their MD and reinstated their moral agency having experienced intervention (Bandura, 2004).

Behavioural intervention and MD correlations suggest that socio-cognitive processes in the consideration of illicit behaviour adopt MD as a means of ameliorating expected self-censure from intending to use cannabis again.

Implications

The observed lack of a significant effective reduction in ABB and MD when exposed to the criminal effects reiterates popular libertarian opinions regarding the debate about the legalisation of cannabis, and suggests discussion of intervention is best kept fairly neutral. For intervention planning, this means that fear-inducing treatment and intervention are least likely to yield an abstinent effect. As such, campaigns should seek to empower their target audience with the knowledge of the harms that they may be causing to themselves, as well as self-assurance in an ability to actively control and change behaviour if desired.

Supporting methods of cost effective, self-administrative nature of the intervention, professionals could explore Brief interventions such as this to measure participant's propensity to change substance abuse behaviour. Although the study has a relatively short test-retest window, this equips administrators with the knowledge of client insight and susceptibility to psychoeducation, compared to those who may require more preliminary therapy before substance abuse work (e.g. Martin et al., 2005).

In order to appeal to cannabis users who use are high in MD, or use MD mechanisms to explain their behaviours, drug treatment campaigns require a restore from prohibition and the narrative of an addict. The effects found for those exposed to even hedonic effects in cannabis represent the benefit of balancing of neutral education, which encourages a self-assured Health Beliefs Model, and

individuals' choice to explore a personal balance of self-indulgence versus preservation.

For any further information, please contact Faith Mbewe (faith.mbewe@nottingham.ac.uk).

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PowerPoint Presentation Slides

MORAL DISENGAGEMENT AND INDIVIDUAL DIFFERENCES IN CANNABIS USE

Investigating perspectives of effective intervention in adults.



RESEARCH AIMS & RATIONALE

- Cannabis is an increasingly drug popular in groups in societies and worldwide (Sandberg, 2012)
- Commercial users: Libertarian activity vs offending complicity
- **Bandura's 8 Mechanisms of Moral Disengagement (2002)**
 - Moral justification
 - Euphemistic (palliative) labelling
 - Advantageous comparison
 - Displacement of responsibility
 - Diffusion of responsibility
 - Disregarding or distorting consequence
 - Dehumanization and attribution of blame

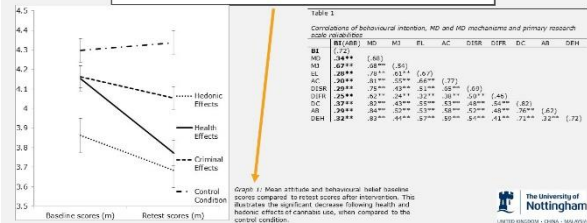


METHODOLOGY

- N=176 (80 male, 94 female & 2 other).
- Internet mediated Bristol Online Survey
- Adapted Attitudes, Behavioural beliefs scale (ABB; Armitage et al, 1999)
- Adult Moral Disengagement Scale (MDS; Detert, Treviño, & Sweitzer, 2008)
- Brief HEXACO (de Vries, 2013)
- Short UPPS-P (Lynam, 2013)
- Brief Intervention-Style Manipulation: hedonic, health, criminal effects or control (Youtube Video Clips)
- Retest of ABB and MDS



RESULTS & FINDINGS



IMPLICATIONS

- Health and hedonic approaches to psychoeducation resulted in reduced ABB score of positive attitudes towards cannabis.
 - participants had less positive attitudes to using cannabis as a result of simply being advised. Did intervention disinhibit MD?
- MD and Behavioural intention correlations
 - Participants had less positive attitudes to using cannabis as a result of simply being advised. Intervention disinhibited MD?
- Negative approaches to intervention/ Fear inducing is less effective and changing participant behavioural intention
- Contribution to the debate on the legalisation of cannabis
- Most important to keep balanced & neutral, empowering service users before sanctioning them



FUTURE RESEARCH

- Extending distribution of the current survey to increase power of sample
- Following up on initial behavioural intention, comparing this to actual retrospective behaviour
- Contextualising the MDS specific to cannabis use
- Testing cannabis dependency against the intervention



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Reflective Report of Research Activities

This reflective report is an account of activities undertaken to complete my Research Dissertation. Following an adapted model of Gibbs' reflective cycle (1988; depicted in Figure 1), I discuss processes of conceptualisation, preparation, design, data collection, analyses, write up, and supervision. This model facilitates comprehensive reflection of the research project and enables the formulation of tangible action plans, applicable to future projects.



Figure 1: Gibbs' Reflective Cycle (adapted from Gibbs, 1988).

Conceptualisation

I explored the operationalising concepts to empirically test, based on my Research Outline (see Appendix A). This instigated priming participants with consequences of illicit behaviour and the effect of these on moral disengagement (MD). Refining my outline made me increasingly passionate about the topic because my ex-flatmate excessively used cannabis, but had explanations for risks involved. Thus, I was keen to produce exploratory, non-judgemental research: Investigating attitudes and MD, without condemning drugs. Against current research, this approach made considering methods tricky. I also got carried away with drug-related research, though irrelevant to the scope of my project. With no proposal draft before Christmas, I then progressed my research to specifically cannabis use, and methods that would be feasible.

My proposal was written to meet requirements that were set out to gain ethical approval. I was hypervigilant about generating an appropriate Master's level research project in keeping guidelines from the Division of Psychiatry & Applied Psychology (DPAP, 2017) and British Psychological Society (BPS, Hewson & Buchanan, 2013).

In the future, I will avoid extensive exploration of unreasonable research, but model ideas on research guidelines universal and course guidelines. I will ensure I focus faster and work to meet target deadlines of the project.

Preparation

Preparation entailed formulating a research question and appraising the necessary tools to implement. From February to May, I encountered the biggest obstacles of my research project. Returning from the Christmas break motivated to complete my research proposal and ethics application, unfortunately my housemate and closest friend in Nottingham was diagnosed with cancer. This was especially tough as her Mother had passed away the year before. My grandfather in Malawi then fell extremely ill in March and passed away in April.

I was conscious that preparation was crucial to progress from concepts to empirical research. But I was not suitably productive because of feeling contradicting sentiments, with regards to my personal priorities, compared to my responsibilities as a person of support during this tough time for people very close to me. I found myself distracted during lectures, deadlines and when volunteering. At home each evening, I then felt guilty for completing research rather than actively playing a role of support, whether emotional or simply as a distraction when needed. I felt pressured as time was quickly passing, yet little progress was made in establishing my research since February. Simultaneously, imminent deadlines for inferior assignments were coming up each month.

I struggled to motivate myself to progress in research activities during these few months because of personal difficulties, but unfortunately prioritised far less vital assignments and refused to admit that I was struggling to anyone. Despite the pressure, I managed to turn things around and reacquainted myself with previously read literature, methods and statistical analyses to finalise a workable research project. From this, I submitted an up to date ethics application on May 9th. I was also able to appropriately adapt a workable timeline of research activities with my supervisor to fulfil the project in a timely manner.

In hindsight, I prioritised deadlines as a means of maintaining normality. I was aware that the people who I wanted to support were invested in my continued progress on the course, regardless of personal issues that were taking place. So, to everyone, I was getting on fine and continuing to make those closest to me proud. In reality, I was struggling emotionally and my mental resilience was being put to the ultimate test of persevering through to reach the next stage of my career.

This experience clarified my legitimate passion to complete the course, and pursue Forensic Psychology. It highlighted my need to be vigilant of what my goals are but being self-aware of my emotions.

In future I will ensure that I am honest with myself and others close to me with regards to my emotional and motivational needs; never maintaining routine to uphold appearances and meet others' expectations. I will use supervision and

guidance provided to reflect and proactively seek appropriate support for any situation.

Design

My passion in the topic pushed me towards the experimental research design of intervention-like manipulations, with participant exposure to different types of manipulation and comparing groups. Participants would be tested at baseline and following manipulation; responding to four initial scales on Attitudes, MD, Personality and Impulsivity, then retesting on the initial two. Building the design was straightforward because the clear write up of my methods in the proposal. While awaiting ethics approval, I took the time to ensure that the survey link was running bug-free and that all platforms were poised to launch and invite participants upon approval.

In developing the survey, I was conscious of the survey potentially causing participant practice effects. With this concern, I evaluated the secondary measures used and sought shorter, robust measures of personality and impulsivity. The Brief HEXACO and Short UPPs scales (De Vries, 2013; Lynam, 2013) proved most appropriate for this. Despite setbacks awaiting ethical approval, I was able to maintain motivation and ensure that the study required minimal adjustments before launching it. However, I felt prone to overlooking small mistakes due to the length of the survey.

Rather than risk the strength of tools such as the HEXACO and UPPS, in future studies, I would sacrifice the longer survey, or avoid secondary measures at-risk of low reliabilities.

Data Collection & Analysis

I was approved on the 20th June 2017. In a timeline discussed with my supervisor following an extension, a reasonable window to gather data was four weeks. The goal number of participants was a total of 180 (following a priori power analyses on G*Power 3.1; Faul, Erdfelder, Lang, & Buchner, 2007).

In reality, survey distribution was difficult, as responses slowed down once I had exhausted my friends and acquaintances on social media platforms. My reluctance initially to enlist recruiters of the survey meant that I further limited my time for data analyses due to an insufficient sample by week 3($N=83$). However, I did not despair and persevered through a stagnant period of people being away and unresponsive. I assumed that my sample would snowball but in reality, I had to constantly communicate with friends, family, fellow researchers and on research participation platforms.

In my experience, people were more likely to partake in the survey by personal invitation. I believe they felt more like their participation was valued. Some individuals who were not in research or younger adults (>25) were hesitant to email the survey through their professional or personal channels due to the criteria of cannabis use in the last five years. Thus, having exhausted my personal

channels of possible participants, I recruited those who had taken part to extend the invitation, personally where possible. At this point, participants response began to pick up again and I reached a sample that I was comfortable to analyse data with a fortnight later ($N=176$). With future research, I feel far more exposed to the realities of data collection, particularly with reference to taboo topics or illicit behaviours. The key approach is to hit the ground running, using academic research channels and the generous public. Most importantly, I will ensure that I am not prideful in inviting participants to any research that I embark on, because I am unaware of those willing to help without asking.

I made sure to preview the format of my data in the weeks of data collection, and study the analyses I would carry out so that I was familiar with its format (Field, 2009; Institute for Digital Research & Education [IDRE], 2017). However, with the full dataset at hand, I initially felt grossly overwhelmed but I decided to take a step back and follow the plan I had in mind to begin with. Once I begun to code and score the data, I had more confidence in SPSS (IBM, 2013) analyses and syntax code and felt comfortable to carry analyses out prior to a supervision dedicated to discussing data and results. Leaving this supervision on August 2nd, I felt empowered with my results and research project as a whole narrative, rather than further overwhelmed by surplus information.

Had I not been so systematic in my analyses, I would have struggled with the data and its interpretation. I found the use of Syntax code extremely beneficial and feel

far more open-minded and poised to explore analyses in with an inquisitive rather than defeatist attitude.

Write Up of Research Paper

The updated plan for my write up, upon receiving a two-week-extension focussed on tackling each section per week. I had discussed potential journal articles to submit with my supervisor at various points of research as my project took on a more concrete shape. However, the journal choice was confirmed during my final supervision (02/08/2017) after having a good grasp of the outcomes having analysed my data and begun to interpret my results. By this point I had written up all but my Discussion section. However, I took the opportunity to reconfigure some surplus content and detail in my Introduction that was less applicable to the intervention -focussed findings. This meant that the paper as a whole was more concise and followed a distinct argument throughout.

I initially felt unsuited to both Personality and Individual Differences, as well as the Journal of Addiction, because I did not see the feasibility of submitting my paper to these journals. While it had aspects that met both papers, I felt they would inadequately represent the application of my research. I am pleased that I continued to review every aspect of my research project up until the day before submission. This meant that I was open to adjust sections to enhance the portfolio as a whole and is something I will take forward in future research projects.

I felt under-qualified somewhat to submit to the Journal of Addiction, but I also wanted to ensure that I submitted to a journal that portrayed a message that I was comfortable with. As my findings were not gathered on participants with addiction, I preferred to be more open-minded in the journal that I was writing for; hence, the Journal of Substance Abuse Treatment.

Supervision

It was conducive during each supervision to evaluate my research timeline as it stood, right up to my deadline. This enabled a two-way process of cooperation and accountability throughout working with my supervisor.

During personal struggles, I found my supervisor to be understanding of my difficulties, but continuously encouraging. This helped me remain focussed and added motivation to persist. Supervision this year contributed to building my resilience throughout the year, where each time I had a setback, whether personal or organisational, I kept my eye on the end goal and appropriately adjusted my expectations of myself and sought guidance if necessary. I now find myself confident in my research skills, as well as more self-assured in my own abilities.

Summary

Although this is not my final submission, I feel that the scales have balanced and I have been able to dedicate my efforts and dedication to achieving something and completing my research project. In summary, this is a research project that

I am proud of, despite the organisational, personal and individual obstacles that I had to overcome.

I look forward to continuing to work with my supervisor to submit the research paper as I believe the findings contribute to the world of Forensic Psychology and health promotion. Equally so, I cannot wait to continue to pursuit my career in Forensic Psychology alongside the people who made it possible for me to get on the course and complete it standing tall.

Word Count: 1,992 words.

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Appendices

Appendix A

Approved project outline, submitted on 06/10/2016; confirmed on 25/10/2017.

Name	Faith Mbewe
Course	Forensic and Criminological Psychology MSc (by research)
Title	Exploring the relationship between moral disengagement and recreational drug use in young adults
Research Question(s)	<p>Are young people aware of the <i>true</i> cost of illegal substances?</p> <p>Is the growing acceptance of illegal recreational drug use a result of selective moral disengagement in young people, despite a strong sense of morality otherwise?</p> <p>The 'true' cost of illegal recreational drugs, such as marijuana and cocaine is inevitable as a result of the destruction of natural land in order to produce crops; the exploitation of innocent communities through labour, and extreme violence in gang culture in order to maintain production and distribution.</p>

	As a society that is increasingly concerned with consuming Fairtrade products, from food to clothing and even furniture, there appears to be a moral disengagement with the growing normalization of illegal drug use in young adults. This is particularly noted within the student population, where there is more acceptance of recreational drug use across users, as well as triers and abstainers (Measham et al, 2001).
Proposed Method	Quantitative- Anonymous survey carried out online exploring knowledge of detrimental costs of illegal drug use and use of mechanisms behind the moral disengagement and continued use.
Proposed Sample	Convenience Sample: Adults- most likely higher education students who recreationally use or have tried illegal drugs
Proposed Supervisor	Dr Vincent Egan