



## Full length article

# Who do you troll and Why: An investigation into the relationship between the Dark Triad Personalities and online trolling behaviours towards popular and less popular Facebook profiles

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## ABSTRACT

This experiment examined the influence of Dark Personalities in trolling behaviour towards popular and less popular Facebook profiles. One-hundred and thirty-five participants were recruited to view two fake Facebook profiles and rate how much they would agree with some trolling comments to each profile, as well as how they perceived themselves in comparison to each profile in terms of social acceptance and rank. In addition, participants completed the Short Dark Personality Questionnaire. Results suggested Psychopathy was positively associated with trolling behaviours while Narcissism was associated with a tendency to see oneself superior to others. Moreover, the higher the Psychopathy score the more likely the participants would troll the popular profile. On the other hand, the higher the Narcissism score the more likely participants were to perceive themselves as superior to the popular profile. These analyses revealed the different influence Dark Personality traits play on different behavioural tendencies. Dynamics among the Dark Personalities in relationship with online behaviours and the implications of the study are discussed.

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## 1. Introduction

An increasingly popular strand of research has examined how the Dark Personality Triad influences online behaviour such as trolling that is defined as “the practice of behaving in a deceptive, destructive, or disruptive manner in a social setting on the internet with no apparent instrumental purpose” (Buckels, Trapnell & Paulhus, 2014, p. 97). Researchers tried to examine the relationship between Dark Personality Triad traits and trolling in an attempt to predict and prevent trolling behaviour (Buckels et al., 2014). The Dark Personality Triad is characterised by socially offensive but not pathological traits, with Psychopathy being the most malicious of the three, showing callousness, impulsiveness, thrill-seeking and remorseless behaviour (Jones & Paulhus, 2011). Machiavellians are also manipulators but less malicious than Psychopaths (Jones & Paulhus, 2014). Narcissists on the other hand, tend to show ideas of grandiosity and preoccupation with their own

self-advancement and with gaining the admiration and attention from others (Campbell & Miller, 2012).

### 1.1. The dark personalities' differences in motivation and associated behaviours

Interestingly, recent research by Buckels et al. (2014) has shown that although Psychopathy, Machiavellism and Narcissism are overlapping constructs that share commonalities (Paulhus, 2014) such as lack of empathy and callousness, these Dark Triad Personalities also display different behaviours online. It seems that Psychopaths and Machiavellians have a tendency to display anti-social behaviour including trolling and acting against the law (e.g., engaging in internet hacking; Buckels, Jones & Paulhus, 2013). However, this was not found to be the case amongst the Narcissistic sample (Buckels et al., 2014): Narcissism was found to be negatively related to trolling (Buckels et al., 2014). Overall, research thus seems to suggest that the three Dark Triad Personalities have different motivations and beliefs that may have an impact on the behaviour they display.

Under a cognitive-behavioural framework, beliefs and associated cognitions are part of self and other schemas that act as

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“lenses” through which information is perceived and appraised thus determining behaviour, which in turn will help to maintain the beliefs (Ellis, 1985).

On one hand, Psychopathy is characterised by the inherent belief that it is acceptable for others to be manipulated and hurt for the individual's own benefit and by an underlying sadistic motivation to cause harm to others (both psychological and physical) that ultimately will give pleasure to the Psychopath. This sadistic streak motivates Psychopaths to bully and prey on people that catch their attention with the intention to use them for their own benefit and self-advancement (e.g., bullying and blackmailing popular individuals for social connections and social gains).

The behaviour of bullying will therefore maintain the Psychopaths' sadistic beliefs and motivation by providing them with feelings of pleasure derived from provoking harm to people that are important and socially salient and attractive (Holtzman & Strube, 2013). Moreover, although Psychopaths may be motivated to bully weaker and vulnerable victims (see Book, Costello, & Camilleri, 2013; Hare, 1999; Powell, 2008), they are also aware that they can obtain more from weaker and lower status victims by showing false sympathy and modesty, thus gaining their trust (Hare, 2006; Powell, 2008). This is because vulnerable victims usually have lower self-esteem and self-confidence, are more gullible and are more willing to trust (which makes them easier to be manipulated) than mentally strong victims (Hodges & Perry, 1999; Powell, 2008). Therefore, bullying vulnerable and less popular individuals does not give as much sadistic pleasure to Psychopaths as bullying popular people does. This is simply because bullying vulnerable low status individuals does not pose necessarily a challenge to Psychopaths; it is too easy to do so and does not necessarily bring any benefit or pleasure to Psychopaths.

In contrast to Psychopaths, Narcissists display a self-serving schema composed of strong beliefs about their own distorted sense of self-importance and grandiosity. Hence, their underlying motivation is not necessarily to cause harm to others but to socially compare themselves favourably to other perceived important people. This will help them to maintain their inflated views of their own self, thus protecting their self-esteem (Campbell & Miller, 2012). Like Narcissists, Machiavellians have also been characterised by self-interest, such that they will manipulate, deceive and exploit others in order to achieve their goals (Jakobwitz & Egan, 2006). As can be seen in previous literature, positive inter-correlations between Machiavellianism and Narcissism have been detected (Jones & Paulhus, 2014) and Narcissists and Machiavellians are seen to be similar in regards to manipulating and exploiting others in order to promote their self-advancement and success. This suggests that Narcissists and Machiavellians may be only motivated to bully when this leads to personal gains and self-advancement, whereas Psychopaths seem to bully not only to self-advance but also simply because they get kicks out of harming other people just for the fun of it.

Further research on the Dark Personality Triad's behaviour online has examined how the Dark Personalities use social media. For example, research that has utilised social media websites has suggested that Narcissists are more frequent users of Facebook (Ljepava, Orr, Locke, & Ross, 2013). Carpenter (2012) conducted a study on students and identified a clear link between the number of Facebook friends and people who score highly on the Narcissistic Personality Inventory questionnaire. Findings also revealed that these individuals are more likely to accept friend requests from strangers, tag themselves more often, update their news-feeds more frequently, respond more aggressively to derogatory comments made about them and change their profile pictures more often. Furthermore, Marshall, Lefringhausen, and Ferenczi (2015) researched personality predictors of Facebook status update

topics. They found that extroverts update more frequently about their social activities and Narcissists update more frequently about their achievements, diet and exercise.

A recent study by Kaya and Bicen (2016) supports previous literature on the relationship between Narcissism and Facebook use in students. They found in a large sample of 362 high school students from level 9 to 12 that students that update their Facebook status more often are more likely to be showing Narcissism. Kaya and Bicen (2016) also added new results to the current literature by showing that in spite of this, Facebook may be an useful tool for e-learning (as long psychological considerations such as Narcissism and self-esteem are considered), given that they found that students that have high Facebook engagement show more participation in school related activities. The authors also found that students are aware of issues of privacy in Facebook as well as what constitutes negative behaviour in Facebook (e.g., swearing). This seems to suggest that students are aware that trolling is a negative behaviour.

Further research on the Dark Triad and online behaviour by Nevin (2015) has found that internet users actually display higher levels of the Dark Triad trait Psychopathy online rather than offline, which was particularly prominent in males. The researcher had participants score on personality measures and then rate the acceptability and likelihood of engaging in both online and offline misconduct behaviours provided in the form of vignettes. The researcher suggested that the internet facilitates increased expression of Psychopathic personality traits and one explanation for this is that of the online disinhibition effect, the view that anonymity online may contribute to more deviant behaviour (Suler, 2004).

In conclusion, research seems to suggest that trolls are displaying Psychopathic tendencies whereas Narcissists use social media websites to promote themselves and that social status and social comparison may be important variables to examine when exploring trolling behaviour of the Dark Personality Triad.

## 1.2. The dark personalities behave differently towards people of different popularity

Previous research has emphasised the importance of striving for self-enhancement as a central characteristic of Narcissism (Campbell & Miller, 2012). Narcissism is linked with the materialistic pursuit of wealth and Narcissistic displays of self-enhancement have taken the form of many behaviours including the need to display a superior status (Rose, 2007) alongside promoting a certain public image that consists of expensive clothing (Vazire, Naumann, Rentfrow, & Gosling, 2008). Narcissists focus on enforcing traits such as dominance and competitiveness as a means to self-enhance (Wallace, 2011) and strive in domains that offer power and status (Rose & Campbell, 2004).

The current study manipulated the social status of two Facebook profiles in order to explore how Narcissists behave online towards people of different perceived popularity because there is literature to suggest that Narcissists seem to show a self-grandiose schema and consequently social status and comparison are important aspects to research as they help to maintain the Narcissists' self-enhancing beliefs (Rose & Campbell, 2004). Therefore, the current study devised two Facebook profiles based on the social-evolutionary definition of popularity as being the perceived higher social rank and status of an individual that is characterised by symbols of power, acceptance and availability of resources (e.g., wealth; Gilbert, 2001). On the other hand, less popular individuals are usually perceived as possessing lower social rank and acceptance, vulnerability, less socially attractive qualities (e.g., lower physical attractiveness and social weaknesses such as awkward

behaviour, low self-esteem, clinginess, low assertiveness and socially inept behaviour; Gilbert, 2001). This manipulation was devised because social hierarchies are important to Narcissists that feel that they have to compare and to compete with others for resources and sources of self-esteem and self-worth (Campbell & Miller, 2012).

Further to this, Festinger's (1954) Social Comparison Theory may shed some light into why it is expected that Narcissistic individuals may behave differently online towards popular and less popular people. He argued that individuals determine their own social and personal worth based on how they continually evaluate their own abilities in comparison to others, success and popularity are part of these domains. Therefore, it is important to explore whether Narcissists that have a tendency to see themselves as more accepted and of a higher rank and status than others will behave differently towards a popular individual compared to a less popular individual. It may be that Narcissists will respond more negatively and compare themselves more favourably to the popular individuals because they see them as a threat to their own popularity and self-advancement. On the other hand, they may try to befriend the individual to help with their self-advancement.

Similar to Narcissists, Machiavellians have also been characterised by self-interest, such that they will manipulate, deceive and exploit others in order to achieve their goals (Jakobwitz & Egan, 2006). Therefore, with these two Dark Triad traits being characterised by a streak of competitiveness, the current study aims to explore if the status of an individual and whether they are deemed as a threat to one's self-advancement will influence or encourage the likelihood to behave negatively towards that individual and subsequently troll that individual on Facebook. To the authors' awareness no research has explored this topic up until now.

Unlike Narcissists that are preoccupied with self-enhancing social comparison, Psychopaths on the other hand have been identified as self-destructive (Fite, Raine, Stouthamer-Loeber, Loeber, & Pardini, 2010), characterised by high impulsivity (Hare, 1999; Powell, 2008) and lack the ability to hold back antisocial impulses (Foster & Trimm, 2008). Therefore, these behaviours have negative consequences not only for themselves but also for others (Fite et al., 2010). Psychopaths out of the three Dark Personalities are the ones that appear to have very little or no conscience (Hare, 2006). The absence of this inhibitory mechanism, restricting most others from acting on antisocial thoughts, allows Psychopaths to engage in a wide range of antisocial behaviour and criminal acts that often are violent in nature (Hare, 2006; Jones & Miller, 2012). Psychopathy is the most aggressive and overtly criminal of the sub-components of the Dark Triad; they are often hostile and aggressive, and have few qualms about exploiting others for their own benefit (Seibert, Miller, Few, Zeichner, & Lynam, 2011). This predilection for crime and the inability to feel guilt for their actions or empathy for their victims may enable Psychopaths to be skilled and experienced manipulators who are easily able to take advantage of others to benefit themselves.

The literature has shown that those that score highly on the Psychopathic personality trait tend to victimise those with a general demeanour of vulnerability and have been found to brutally detect and exploit their victims' weak spots (Book et al., 2013; Hare, 1999). The characteristics that often are associated with vulnerability to victimization include high depression and anxiety, low self-esteem, gullibility, naiveté, a willingness to trust others, a sense of inadequacy, and low assertiveness (Book et al., 2013; D'Esposito, Blake, & Riccio, 2011; Hawker & Boulton, 2000; Hodges, Boivin, Vitaro, & Bukowski, 1999; Ladd & Kochenderfer-Ladd, 2002; Powell, 2008; Richards, Rollerson, & Phillips, 1991; Rubin & Cope-lan, 2004). Therefore, less popular individuals may be chosen by Psychopaths as targets because they tend to be perceived as

possessing low self-esteem and as being socially inadequate (e.g., too clingy and awkward; Book et al., 2013; Hodges & Perry, 1999; Powell, 2008).

Although Psychopaths may be inclined to prey on perceived vulnerable victims, there is literature to suggest that Psychopaths may also prey on people that catch their attention for other reasons. For example, the small amount of research on this topic has shown that Psychopaths may be attracted to physically attractive and/or extroverted individuals that catch their attention in a different way (Holtzman & Strube, 2013). Psychopaths can be attracted to individuals that are "appetising" and socially salient either because they are physically attractive or because they seem to show signs of wealth or social status (e.g., high quality adornments, expensive clothes, car, etc.). The Psychopaths' curiosity for these individuals is aligned with the Psychopaths' tendency to exploit people for their own benefit (see Holtzman & Strube, 2013) so for example, using popular people to enhance social connections and also with their sadistic tendency to undermine and bully people that are socially salient and popular just for fun (Buckels et al., 2014).

## 2. Material and methods

### 2.1. Aims and objectives

The current study investigates a new and interesting direction in research: whether the Dark Triad Personalities show different online behaviours towards people of different social status. Previous literature has supported that Psychopaths choose target victims carefully (Hare, 2006) and that Narcissists behave in a showier fashion under particular circumstances (Campbell & Miller, 2012; Wallace, Baumeister, & Vohs, 2005) but these lines of study have not been extended to online behaviour yet. Thus, the main aim of this study is to explore the relationship between the Dark Personality traits and trolling towards Facebook profiles of different popularity: popular vs. less popular. The second aim is to explore how the Dark Personalities socially compare themselves to Facebook profiles that are popular vs. less popular. The main objective of the study is therefore to advance the research in this area by uncovering differences between the Dark Personalities' behaviour online towards Facebook profiles of different social status with the purpose of unveiling which kind of people in Facebook are more prone to be targets of trolling by people that have particular Dark Personalities' tendencies. This could then potentially inform and shape campaigns of awareness and prevention of student victimization by trolling in Facebook.

### 2.2. Hypotheses

Literature on Psychopathy has found that in offline contexts Psychopaths tend to prey on individuals that possess vulnerable personality traits (see Hare, 2006) and that Psychopathy in online contexts is associated with trolling (Nevin, 2015). However, there is research that seems to suggest that Psychopaths may bully individuals that possess physically attractive traits and other positive qualities that catch their attention (Holtzman & Strube, 2013). To address this gap in the literature, it was hypothesised that Psychopathy would be associated with trolling and more significantly so to the popular Facebook profile. Moreover, since the literature is showing that Narcissism is characterised by a need to uphold grandiose views of oneself and to self-advance (Campbell & Miller, 2012) and that Narcissism is not associated with trolling (Buckels et al., 2014), it was hypothesised that Narcissism would be associated with downward social comparisons and more significantly so to the popular Facebook profile. In other words, Narcissism is expected to be associated with perceptions of superiority in

comparison to popular individuals.

### 2.3. Participants and procedure

One hundred and thirty-five participants completed this study, among which there were 22 males and 113 females, with a mean age of 20.45 years ( $SD = 3.55$ ). The inclusion criteria of the study included being 18 years of age or above and a Facebook user. Participants were students at De Montfort University in the United Kingdom.

Participants followed a webpage link that directed them to the Qualtrics study. They were first provided with the Information Sheet, and if they agreed to participate in the study they would click the START button, which led them to the socio-demographic questions. The information participants provided about their gender lead them to the same-sex fake Facebook profiles. All participants experienced the same procedure. They first completed the Short Dark Triad Personality Questionnaire (SD3), and then they were exposed to the two Facebook profiles: popular and less popular that were presented in a randomised order. They then completed the social comparison scale comparing themselves to the user and finally answered the trolling comment agreement scale for the different statuses of the Facebook profile they were exposed to. On completion, participants were provided with the debrief form and were thanked for their participation. The study took approximately 20–30 minutes to complete.

#### 2.3.1. Ethical considerations

The British Psychology Society (BPS) ethics code for internet mediated research was adhered to, and the study was approved by the ethics committee in the School of Health and Life Sciences of De Montfort University. Prior to taking part in the study participants were provided with an information sheet that informed them about the nature of the study. The study did not ask for any identifying characteristics. Also, participants were informed that once they had completed the online study, their data was completely anonymised because Qualtrics produced a random number ID and their IP address was not registered and as such there was no way to trace the data submitted back to the individual. Moreover, they were also informed that the data was going to be analysed as group statistics and that individual results could not have been provided because data was totally anonymised and could not be traced back. Participants were also fully debriefed about the purpose of the study and were informed that the Short Dark Triad Personality Questionnaire (Jones & Paulhus, 2014) was not used as a diagnostic measure and that the study was measuring Dark Personalities sub-clinical tendencies that could not have been linked back to the individual. Participants were also provided with appropriate sources of support for internet bullying and trolling.

### 2.4. Instruments

#### 2.4.1. The short dark triad personality questionnaire (SD3) (Jones & Paulhus, 2014)

The SD3 was administered to assess the Dark Triad traits: Machiavellianism, Narcissism, and sub-clinical Psychopathy. There were 27 items, with 9 items assessing each sub-scale of the trait. One example for Machiavellianism was “it’s not wise to tell your secrets”, for Narcissism “people see me as a natural leader”, and for Psychopathy “I’ll say anything to get what I want”. Responses were rated on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The average score of the 9 items per Dark Triad trait was calculated for each individual. Composite scores range from 1 to 5 on each Dark Triad trait with a higher score indicating a higher level of possessing that particular trait. The Cronbach’s

alphas were 0.71 for Machiavellianism, 0.78 for Narcissism, and 0.70 for Psychopathy.

#### 2.4.2. The fake Facebook profiles

A pilot study composed of 20 students from De Montfort University in the UK was conducted in order to gather information from current students on what they would expect to find on a “popular” student’s Facebook profile compared to a less “popular” student’s Facebook profile. The findings shaped the construction of the fake Facebook profiles. The popular students’ Facebook profiles were made up of statuses that reflected an extroverted, outgoing personality with the individual having many visible friends; whereas the less popular students’ Facebook profiles were made up of statuses that suggested low self-esteem, evidence of online gaming activity and romantic relationships alongside attention seeking by expressing about their misfortune. Empirical research has supported the pilot findings by lending support to the types of personalities and predictors of Facebook update status topics. Marshall et al. (2015) found that extroverts post about their social activities and everyday life with Facebook use being motivated by the need to communicate and connect with others online; while those with low self-esteem update statuses in regards to romantic partners due to being fearful of losing their partner alongside using Facebook as a means for self-expression.

In addition, male and female Facebook profiles were created for both popular and less popular students in order to administer same-sex profiles to participants. Previous research found that Facebook users do not prefer to look at pages of people of the same sex more than the opposite sex, however, females are more likely to do this than males (McAndrew & Jeong, 2012). In addition, the same study (McAndrew & Jeong, 2012) revealed that males not in a relationship spend less time looking at the pages of same-sex others than males in a relationship, but relationship status has no effect on females in doing so. Therefore, to avoid the complication of sex-related effects, in this study, males were viewing two fake male profiles and females were viewing two fake female profiles, one being popular and the other less popular in both genders.

The order of the presentation of both popular and less popular Facebook profiles was randomised to avoid carry over effects.

#### 2.4.3. Social comparison scale (Allan & Gilbert, 1995)

Participants were asked to compare themselves to the individuals of a particular Facebook profile (popular and less popular) using Allan and Gilbert’s (1995) Social Comparison Scale. This scale measures self-perceived social rank and relative social standing on 11 bipolar constructs (e.g., superior vs. inferior, unattractive vs. more attractive), rated on a 10-point scale. A social comparison score is computed by averaging the scores of the 11 items. Scores range from 1 to 10, with a higher score indicating viewing themselves as more superior to the person of the Facebook profile. On the other hand, lower scores indicate feelings of inferiority and general low rank of self-perception. The Cronbach’s alphas for the current study were 0.93 for the popular profile, and 0.87 for the less popular profile.

#### 2.4.4. Measure of trolling: scale of agreement to trolling comments towards the Facebook profiles

The measure of trolling in this study was an indirect measure similar to other measures that also have been adopted in previous research (Nevin, 2015). The measure asked participants firstly to read comments to two statuses provided for each Facebook profile. Status 1 for both the popular and less popular Facebook profiles of males and females concerned educational attainment. The popular students’ Facebook profiles contained a status surrounding achieving a high grade. On the other hand, the less popular



students' Facebook profile contained a status in regards to their disappointment in not attaining a higher grade. Status 2 was in regards to personal life. The popular students' Facebook profiles contained a status in regards to owning a flashy new car as a symbol of wealth. On the contrary, the less popular students' Facebook profile contained a status in which they are complaining about having a cold. All of these statuses could be viewed from both sides and evoke either friendly and or negative reactions from the participants to the individual.

On each status, participants were able to see some comments that had been posted by other users, among which there were two trolling comments (e.g., "No matter how hard you try, you'll never get a good grade coz you're an idiot!" to the less popular profile; and "Which lecturer did you sleep with to get that grade?" to the popular profile). Trolling comments were based on responses provided by students in the pilot study. The authors asked students for examples of trolling comments that they thought could have been provided to the two different statuses of the popular and less popular Facebook profiles. The most common trolling comments were selected and these were rated by two independent reviewers that independently both agreed as being the best examples of trolling comments to each status ( $Kappa .90$ ). Raters also agreed that in spite of the trolling comments being two different statements specific to each Facebook profile, they were equivalent in terms of content and meaning.

Participants were then asked to respond with how much they agreed with the 6 comments on a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Overall, there were four trolling scores to each fake Facebook profile (two per status) and a composite score was calculated by averaging participants' ratings of agreement to the trolling comments. The composite score ranged from 1 to 5, and a higher score indicated a higher tendency to agree with trolling comments to the fake Facebook profiles. The Cronbach's alpha was 0.70 for the agreement to trolling comments for the popular profile, and the Cronbach's alpha was 0.68 for the less popular profile. This suggests a reasonable level of consistency given that there were only four items of trolling.

## 3. Results

### 3.1. Manipulation checks

#### 3.1.1. Liking of the Facebook profiles

After participants viewed each Facebook profile, they were asked to rate on how much they liked the person presented in the profile on a 1–5 Likert scale from "not at all" to "a lot". A pair-wise *t*-test revealed that participants liked the popular profile ( $M = 2.89$ ,  $SD = 0.94$ ) more than the less popular profile ( $M = 2.39$ ,  $SD = 0.96$ ),  $t(134) = 4.57$ ,  $p < .001$ .

#### 3.1.2. Perceived social rank and acceptance of the Facebook profiles

A pair-wise *t*-test was conducted to examine differences between the two Facebook profiles for their perceived social rank and acceptance. Results showed that participants rated the less popular profile significantly lower than the popular profile on the Social Comparison Scale,  $t(134) = 5.18$ ,  $p < .001$ , meaning that participants viewed the less popular profile as possessing lower social standing compared to the popular profile.

These results thus suggested that the manipulation was successful since the designed popular profile was not only significantly more popular, but was also considered to be of a higher social rank and more socially accepted than the less popular profile.

### 3.2. Descriptive statistics

The descriptive statistics were tabulated in Table 1. The mean scores of the Dark Personality traits were comparable to the published norms by Jones and Paulhus (2014) in the study where they validated the SD3.

### 3.3. Inferential statistics

#### 3.3.1. Hypothesis 1

A multivariate regression analysis was conducted to test hypothesis 1 with trolling scores towards the popular and less popular profiles as multiple DVs, and scores of the Dark Personality traits as IVs to investigate whether the Dark Personality traits would affect participants' trolling to the popular and less popular profiles differently. Results showed that the Dark Personality traits had an overall significant influence on one's trolling scores to both popular and less popular profiles,  $F(3, 131) = 5.67$ ,  $p < .001$ . In addition, Machiavellianism and Psychopathy affected people's ratings towards popular and less popular profiles differently, with  $F(2, 130) = 3.90$ ,  $p = 0.023$ , and  $F(2, 130) = 14.40$ ,  $p < .001$ , respectively. Two follow up linear regression analyses were conducted, with the trolling scores to popular and less popular profiles as DV, and the scores of the Dark Personality traits as IVs for each regression equation. Overall model fitting results and coefficients of the two regression analyses were summarised in Table 2. As indicated in Table 2, the coefficient of Psychopathy towards the popular profile was 0.55 ( $t(131) = 5.38$ ,  $p < .001$ ), which was statistically significantly higher than towards the less popular profile with the coefficient being 0.29 ( $t(131) = 2.67$ ,  $p = 0.008$ ), suggesting that people with a higher score on the Psychopathy trait would agree more with the trolling comments towards the popular profile than the less popular profile. It is worth noting that Psychopathy was positively associated with trolling scores towards both popular and less popular profiles, but the association was stronger to the popular profile.

#### 3.3.2. Hypothesis 2

A multivariate regression analysis was conducted to test hypothesis 2 with social comparison scores towards the popular and less popular profiles as multiple DVs, and scores of the Dark Personality traits as IVs to investigate whether the Dark Personality traits would affect participants' social comparison scores to the popular and less popular profiles differently. Results showed that the Dark Personality traits had an overall significant influence on one's social comparison to both popular and less popular profiles,  $F(3, 131) = 5.73$ ,  $p < .001$ . In addition, Machiavellianism and Narcissism affected people's ratings towards popular and unpopular profiles differently, with  $F(2, 130) = 3.86$ ,  $p = 0.023$ , and  $F(2, 130) = 14.50$ ,  $p < .001$ , respectively. Two follow up linear regression analyses were conducted, with the social comparison score to popular and unpopular profiles as DV, and scores of the Dark Personality traits as IVs for each regression equation. Overall model fitting results and coefficients of the two regression analyses were summarised in Table 3. As indicated in Table 3, the coefficient of Narcissism towards the popular profile was 0.83 ( $t(131) = 3.81$ ,  $p < .001$ ), which was significantly higher than towards the less popular profile with the coefficient being 0.51 ( $t(131) = 3.02$ ,  $p = 0.003$ ), indicating that people with a higher score on Narcissism trait would perceive themselves to be more superior towards the popular profile than to the less popular profile. It is worth noting that Narcissism was positively associated with a downward social comparison towards both popular and less popular profiles (i.e., feelings of superiority), but the association was stronger to the popular profile.

**Table 1**  
Means, SDs, and bivariate correlations of variables used in the study.

		Descriptive		Correlation						
		M	SD	1	2	3	4	5	6	
1	Machiavellianism	3.14	0.56							
2	Narcissism	2.66	0.63	0.14						
3	Psychopathy	2.30	0.56	0.45***	0.25**					
4	Troll_LP	1.62	0.64	0.16	0.08	0.45***				
5	Troll_LP	1.56	0.64	0.22*	0.08	0.30***	0.50***			
6	Compare_LP	5.50	1.64	0.22**	0.34***	0.17	0.09	0.06		
7	Compare_LP	6.42	1.23	0.02	0.28**	0.13	0.12	−0.04	0.00	

Note: \*\*\* $p < 0.001$ ; \*\* $p < 0.01$ ;  $N = 135$ .

Troll\_LP = Agreement score to trolling comments towards the popular Facebook profile; Troll\_LP = Agreement score to trolling comments towards the less popular Facebook profile; Compare\_LP = Social comparison score to the popular Facebook profile; Compare\_LP = Social comparison score to the less popular Facebook profile.

**Table 2**  
Coefficients of Multivariate Regression analyses using Dark Personality traits predicting trolling scores towards popular and less popular Facebook profiles.

Predictors	DV: Trolling scores	
	Popular profile	Less popular profile
Machiavellianism	−0.05	0.11
Narcissism	−0.03	0.00
Psychopathy	0.55***	0.29**
F-statistic	$F(3, 131) = 11.31$	$F(3, 131) = 4.75$
	$p < 0.001$ ; $R^2 = 0.20$	$p = 0.004$ ; $R^2 = 0.10$

Note: \*\* $p < .01$ , \*\*\* $p < .001$ .

**Table 3**  
Coefficients of Multivariate Regression analysis using Dark Personality traits predicting social comparison scores towards popular and less popular Facebook profiles.

Predictors	DV: Social comparison scores	
	Popular profile	Less popular profile
Machiavellianism	0.51	−0.13
Narcissism	0.83***	0.51**
Psychopathy	0.03	0.21
F-statistic	$F(3, 131) = 7.65$	$F(3, 131) = 4.00$
	$p < 0.001$ ; $R^2 = 0.15$	$p = 0.009$ ; $R^2 = 0.08$

Note: \*\* $p < .01$ , \*\*\* $p < .001$ .

#### 4. Discussion

This study examined how the different Dark Triad Personalities are associated with different online behavioural tendencies towards people of different popularity. Regarding the research question as to whether Psychopaths victimise only weaker and vulnerable people or whether Psychopaths prey on different types of people, including people that are popular (see Holtzman & Strube, 2013), it was hypothesised that Psychopathy was a significant predictor of online trolling behaviour and more so for the popular Facebook profile. The hypothesis was fully supported. This study's result is in line with previous literature suggesting that Psychopathy predicts trolling (Nevin, 2015). Moreover, this result makes a significant contribution to the existing literature by showing that Psychopathy is associated with trolling of popular individuals more so than of less popular individuals. This trend suggests that Psychopaths show a predilection for bullying perceived popular individuals. On the one hand, Psychopaths do prey on victims that are perceived as being weaker and as showing less self-esteem (Book et al., 2013; Hare, 2006; Powell, 2008); on the other hand, they may be curious and actually prefer to prey and bully people that are generally more liked and are perceived to have a higher social status, possessing therefore more popularity.

Popular individuals are therefore highly likely to be victims of Psychopaths and can be exploited for their own benefit (Hare, 2006). This result also sheds light into a new direction of research since past literature focused mainly on the perceived weaker and less popular individuals as potential victims of Psychopaths' behaviour (Book et al., 2013; Hare, 1999; Powell, 2008). Moreover, this result suggests that Psychopaths may have different motivations when trolling. On the one hand, they may want to prey on weaker victims and exploit their weak spots, such as low self-esteem and attention-seeking behaviours; on the other hand, they may also be motivated to bully people that are socially salient and popular just for the sake of undermining their social status or just for fun (Buckels et al., 2014). In other words, the Psychopaths' sadistic tendencies lead them to get kicks out of bullying people that are perceived to be physically attractive, wealthy and popular, just because of the simple fact that they are more socially salient and generally attract more attention than other people do.

In contrast to Psychopaths, the literature suggests that Narcissists do not have a tendency to troll (Buckels et al., 2014). Indeed, it was hypothesised that Narcissism would be associated with a downward social comparison, particularly to the popular Facebook profile and this was fully supported. Results thus suggest that Narcissism is not associated with trolling (Buckels et al., 2014), but more importantly, these results add to the literature by showing that Narcissists perceive themselves as being superior to everyone but more so to popular than to less popular individuals. This result supports past literature that has shown that Narcissists are self-absorbed, are preoccupied with obtaining high social status and perceive themselves as being unique and special (Campbell & Miller, 2012). This result also demonstrates that popular individuals may be particularly of relevance because Narcissists need to feel that they are more important and more accepted than other perceived important and socially salient individuals, in order to protect their own self-esteem and sense of grandiosity (Campbell & Miller, 2012). Moreover, Narcissists may perceive popular instead of less popular individuals as their direct competitors. This means that Narcissists may focus their attention more on the popular rather than the less popular individuals because they may perceive them as being a threat to their own social status and popularity and because Narcissists need to feel that they are special, that they are the best out of the best.

The implications of this study are on one hand theoretical, suggesting that the personalities that compose the Dark Personality Triad although overlapping for example, they all show deceitfulness and manipulation, are distinctive enough to be examined as separate constructs. It seems that Narcissism is associated with downward social comparison rather than trolling whereas Psychopathy predicts trolling behaviour but not social comparison. Results also support a cognitive-behavioural framework to explain

the Dark Personality Triad personalities' different motivations and online behaviours. Under the light of a typical cognitive behavioural model (see Ellis, 1985), Narcissism as a personality is characterised by a self-serving schema that is composed of distorted self-enhancing beliefs and cognitions of self-importance that are associated with the underlying need of acquiring and maintaining a grandiose self-image and a higher social status, which then leads to a self-enhancing social comparison to other perceived popular individuals. On the other hand, Psychopathy as a personality is characterised by a sadistic schema composed of cognitions about the acceptability of harming others for fun and the associated sadistic pleasure of causing pain to others, which are then linked to socially deviant behaviour and bullying. Therefore, the practical implications of this study are suggesting that the monitoring of online behaviour should look more into the Psychopathic trait and underlying beliefs and motivations rather than the overall Dark Personality Triad.

An important contribution of this study is in highlighting that perceived vulnerable victims (*i.e.*, people that are perceived as being weak) are not the only ones targeted by Psychopaths. Indeed, popular individuals are as likely if not more likely than less popular individuals to be victims of Psychopaths. As such, practical implications for preventing trolling should consider not only monitoring the online behaviour and underlying motivations of people that have Psychopathic tendencies, but also interventions for college students that raise awareness about being a potential prey of Psychopaths, may need to take into account different people and should not only be targeted at typical victims.

Although the study yielded important results it has some limitations and results should also be interpreted with caution. Firstly, one limitation that is also present in other studies in the literature is the measure of online trolling behaviour. The measure that the authors used was indirect and only measured agreement with trolling comments made *a priori*, which does not tap into real (trolling) behaviour. However, due to ethical constraints, most studies only have the means of using indirect measures of trolling (see Buckels et al., 2014; Nevin, 2015), although in the future it would be of great value to have a more direct measure of online trolling behaviour (*e.g.*, actual measures of trolling comments online).

Secondly, although there was evidence to suggest that the fake Facebook profiles were indeed different in terms of likeability and social status, acceptance and rank, it could be argued that the popular profile was not extremely popular because the likeability score was around the mid-point in the scale. In the future, the Facebook profiles should attempt to show people that have more varied and extreme levels of popularity and social status (*e.g.*, celebrities, average people, etc.).

Thirdly, the sample was constituted of UK university students with similar backgrounds, which meant that the results might not generalise to other samples. In particular, the results imply associations and not causation and are measuring sub-clinical and not clinical Psychopathy and Narcissism, which means that clinical samples may show different behaviours to what was observed in a student sample.

In spite of this, it can be argued that students are regular users of Facebook (Kaya & Bicen, 2016) and that they do show Dark Personality tendencies (Jones & Paulhus, 2011) that are associated with trolling behaviours. Furthermore, the university students in our sample showed similar Dark Triad's descriptive results to the much larger samples that provided the normative and psychometric data for this particular instrument (Jones & Paulhus, 2014). Moreover, social status is an important variable that has been linked to students' behaviour in offline academic contexts (Loeb & Hurd, 2017). As such, university students are indeed a cohort of interest for this

type of research.

This study thus provides a starting point for new research looking at how the perceived social status of different Facebook profiles may be related with the Dark Personality traits and associated online behaviour of trolling in samples of students of different backgrounds and nationalities and in other cohorts that use Facebook regularly (*e.g.*, teenagers, middle aged individuals, etc.).

## 5. Conclusions

This study was novel in showing that the Dark Triad Personalities are associated with different online behaviours towards different types of Facebook profiles. The study's main results suggest that Narcissism is associated with downward social comparisons (*i.e.*, they look down on other people) whereas Psychopathy is associated with trolling, and both behavioural tendencies target particularly the more popular individuals. This is key since research up until now has not explored the direction of different online behaviours based on popularity at the receiving end. An important implication of this study for the monitoring of online trolling behaviours is to focus on Psychopathy being linked to victimising different types of people with a particular predilection for people that are popular. Future research could therefore explore in more depth the underlying motivations of Psychopathic individuals of different age groups and occupations (*e.g.*, student, retired, etc.) when trolling different types of people and measure the online behaviour against different profiles of potential "victims" (*e.g.*, celebrities).

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