



## **BSc in Psychology**

# Predictive Factors of Facebook Trolling Behaviour

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Foreword

Submitted in partial fulfillment of the requirements of the BSc Psychology degree, Reykjavik University, this thesis is presented in the style of an article for submission to a peer-reviewed journal.

### Abstract

The aim of the current study was to examine the relationship between the Dark Tetrad personality traits (sadism, narcissism, psychopathy and Machiavellianism), social reward (negative social potency specifically), the HEXACO Personality Inventory traits (Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness and Openness) and Facebook trolling behaviour. A total of 147 participants (87.1% female) completed an online questionnaire which included The Global Assessment of Facebook Trolling, The Dirty Dozen, The Short Sadistic Impulse Scale, Social Rewards Questionnaire and HEXACO PI-R. Results, from a regression analysis, showed that the trait sadism was the strongest predictor of the behaviour. Future research should explore trolling behaviour across the number of popular social media platforms available.

### Útdráttur

Markmið þessarar rannsóknar var að kanna sambandið á milli Dark Tetrat persónuleikabáttana (sadismi, narssismi, siðblinda og Machiavelliansimi), félagslegrar endurgjafar (neikvæður félagslegur kraftur), HEXACO persónuleikabáttana (Heiðarleiki-auðmýkt, tilfinningasemi, úthverfun, geðfelldni, samviskusemi og hreinskilni) og troll hegðunar á samfélagsmiðlinum Facebook. Könnunina kláruðu alls 147 þátttakendur (87% konur) en könnunin innihélt spurningalistana the Global Assessment of Facebook Trolling, The Dirty Dozen, The Short Sadistic Impulse Scale, Social Rewards Questionnaire og HEXACO PI-R. Niðurstöður aðhvarfsgreiningar sýndu að sadismi hafi verið sterkasti forspárþáttur troll hegðunar. Framtíðarrannsóknir ættu að kanna þessa hegðun á fleiri vinsælum samfélagsmiðlum.

### Personality traits and Facebook trolling behaviour

Through the years the definition of online trolling has changed as the internet and online behavior has evolved. In recent years trolling has been defined as deviant, malicious or antisocial online behavior (Coles & West, 2016; Fichman & Sanfilippo, 2014) with motives to disrupt conversations and trigger conflict (Coles & West, 2016; Fichman & Sanfilippo, 2014; Lee, Yang, & Rim, 2014). The word ‘flaming’ has also been used to describe this behaviour but on the more popular social media platforms today the term ‘flaming’ has become less known and the term ‘trolling’ or ‘hating’ are now more commonly used (McCosker, 2013). To further explain, Bergstrom (2011) defined trolling from the perspective of the discomfort or anger that results from the transgression of particular community norms. He said that by being trolled, one is made victim and made to be the butt of someone else’s joke (Bergstrom, 2011). Bishop (2013) concluded that the term trolling was once considered to be the posting of provocative texts online but now also refers to offensive texts. He also said that internet abuse and data misuse could now be considered trolling (Bishop, 2013). Nevertheless, trolling behaviour can differ between groups or platforms on the internet and it could be important to consider group norms in defining trolling behaviour. One group’s troll or troller might not succeed at trolling in another group (Hardaker, 2010).

In Hardaker’s (2010) analysis of computer-mediated communication, four dimensions of trolling behaviour were distinguished. The first was *deception*, which describes how the troll rarely reveals his or her intent to troll. The second one was *aggression*. She noted that users in her content analysis described trolling behaviours as aggressive and hostile. The third dimension was *disruption* and refers to the disruptive behaviour trolls often show, where they are not necessarily attacking a specific individual but constantly post irrelevant content to seek attention. The last dimension Hardaker mentioned was *success*. It seems that trolls need

to be appraised by other users on their network and trolls who gain no attention or produce poor trolls are considered to have failed (Hardaker, 2010).

The phenomena of online trolling has been a subject of interest across a wide range of disciplines such as engineering, computer science, journalism and law. In the field of computer science, trolling is relevant to computing, cyber safety, and network systems security (de-la-Peña-Sordo, Santos, Pastor-López, & Bringas, 2013; Kwak, Blackburn, & Han, 2015; Spezzano, 2016), in journalism as a modern hot-topic regarding the comment section in online news outlets (Binns, 2012). In some cases, trolling has led to lawsuits (Bond, 1999).

Buckels, Trapnell, and Paulhus (2014) constructed a short index to measure internet trolling, called the *Global Assessment of Internet Trolling* (GAIT) and examined the association between internet trolling and personality traits such as the Dark Tetrad and the Big Five personality traits. Their results revealed that internet trolling was associated with higher levels of the Dark Tetrad personality traits. Of the Dark Tetrad traits (sadism, narcissism, psychopathy and Machiavellianism) sadism had the most robust association with trolling. Furthermore, those who scored stronger on the GAIT scale had lower levels of conscientiousness and agreeableness while those who said trolling was their favourite activity scored higher on extraversion (Buckels et al., 2014).

Craker and March (2016) modified the *Global Assessment of Internet Trolling* into the *Global Assessment of Facebook Trolling* (GAFT) to measure trolling behaviour on the social networking site Facebook. Today, there are several social media networks people around the world use but the most popular one by a large scale is Facebook. As of December 2016, Facebook had on average 1.23 billion users who were active daily (Facebook, 2016). Craker and March's (2016) results showed that two of the four Dark Tetrad traits, psychopathy and sadism, were predictive factors of trolling behaviour on Facebook. Further,

their results showed that social reward, specifically negative social potency, was a predictive factor for Facebook trolling behaviour. However, Craker and March (2016) did not explore any association between Facebook trolling and the Big Five as Buckels et al. (2014) did for internet trolling.

The Big Five personality structure, including the factors Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness, has been widely recognised as a useful and universal tool to describe personality (McCrae & Costa, 1997). Recently, however, it has been suggested that a sixth factor, Honesty-Humility, might be justified (Lee & Ashton, 2004) since the negative pole of the Honesty-Humility factor could indicate a tendency for exploiting people (Ashton, Lee, & Son, 2000). Furthermore, Honesty-Humility has been able to predict dishonest, deceitful, and antisocial behaviour (Gylfason, Halldorsson, & Kristinsson, 2016; Hilbig & Zettler, 2015; Lee, Ashton, & Shin, 2005).

The aim of the current study was to build upon Craker and March's (2016) study by adding the HEXACO traits. More specifically, to examine the association of the HEXACO personality traits with Facebook trolling behaviour. It is hypothesized that Facebook trolling behaviour will be positively associated with higher levels of Dark Tetrad personality traits (Buckels et al., 2014; Craker & March, 2016), negatively associated with negative social potency (Craker & March, 2016), positively associated with Extraversion, negatively associated with Agreeableness and Conscientiousness (Buckels et al., 2014), and negatively associated with Honesty-Humility (Ashton et al., 2000). Furthermore, following Craker and March, it is hypothesized that in addition to the variance explained by the Dark Tetrad traits and negative social potency, HEXACO personality traits will also predict Facebook trolling behaviour.

## **Method**

### **Participants**

A total of 147 participants completed an online questionnaire. Most participants were in the age range 18-34 years old or 76.2%. The majority of participants were female or 85%, males were 12.9% and 2.1% were transgender or gender variant. Participants were recruited through Facebook using a snowball sampling technique. No reward was offered for participation.

### **Measures**

The survey included demographic questions (age and gender) and these following measures: The Global Assessment of Facebook Trolling, The Dirty Dozen, The Short Sadistic Impulse Scale, Social Rewards Questionnaire and HEXACO PI-R.

**The Global Assessment of Facebook Trolling.** To assess participants' Facebook trolling behaviour *the Global Assessment of Facebook Trolling* (GAFT) was used (Craker & March, 2016). Participants answered how much they agreed to given statements of the assessment on a five point Likert scale ranging from "strongly disagree" to "strongly agree". The scale was found to have reasonable reliability for the current sample (Cronbach's  $\alpha = .67$ ).

**The Dirty Dozen.** Machiavellianism, narcissism and psychopathy, was measured with The Dirty Dozen 12 item self-report questionnaire (Jonason & Webster, 2010). Statements such as "I tend to be callous or insensitive" and "I tend to seek prestige or status" were answered on a 9 point Likert scale from "disagree strongly" to "agree strongly". Internal consistency was found to be good for the current sample (Cronbach's  $\alpha = .87$ ) with Machiavellianism  $\alpha = .80$ , narcissism  $\alpha = .86$ , and psychopathy  $\alpha = .74$ .

**The Short Sadistic Impulse Scale.** The Short Sadistic Impulse Scale (SSIS) was used to measure sadistic inclination (O'Meara, Davies, & Hammond, 2011). Participants answered dichotomously to statements such as "I have hurt people because I could" with a

“Yes” or “No”. In the current sample the SSIS scale was found to have fairly low reliability (Cronbach’s  $\alpha = .63$ ), similar to that in Craker and March (2016)

**Social Rewards Questionnaire.** Participants’ negative social potency was measured using the Social Rewards Questionnaire (SRQ) (Foulkes, Viding, McCrory, & Neumann, 2014). The questionnaire included 23 statements with a seven point Likert scale answer choices ranging from “strongly disagree” to “strongly agree”. Examples of statements are “I enjoy making someone angry” and “I enjoy embarrassing others”. The questionnaire measures six subscales of social reward: Admiration, Negative Social Potency, Passivity, Prosocial Interactions, Sexual Reward, and Sociability. Negative Social Potency was the only subscale of interest for the current research. The Social Rewards Questionnaire has been shown to have good reliability and construct validity (Foulkes et al., 2014). Reliability for the current sample was found to be good for SRQ  $\alpha = .79$  and for the subscale Negative Social Potency  $\alpha = .64$ .

**HEXACO Personality Inventory Revised.** The HEXACO Personality Inventory Revised (HEXACO-PI-R) was used to assess Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness and Openness (Lee & Ashton, 2004). Statements such as “I would be quite bored by a visit to an art gallery” and “I would get a lot of pleasure from owning expensive luxury goods” were answered on a 5 point Likert scale from “strongly disagree” to “strongly agree”. Reliability for the subscales was found to be good, Honesty-Humility  $\alpha = .70$ , Emotionality  $\alpha = .75$ , Extraversion  $\alpha = .87$ , Agreeableness  $\alpha = .74$ , Conscientiousness  $\alpha = .76$ , and Openness  $\alpha = .80$ .

### **Procedure**

A link to the questionnaire was posted and shared on through Facebook. When participants clicked on the link they saw a statement with information about the purpose of the study and approximate time it would take to answer all questions. They were also

informed of their rights to not answer all questions and that participation could be stopped at any time.

## Results

Descriptive statistics for all variables can be found in Table 1. The relationship between Facebook trolling behaviours and all predictor variables was explored by running a bivariate correlation analysis. The Pearson's correlation coefficient results are presented in Table 2.

Table 1

*Descriptive statistics for Facebook trolling, the HEXACO traits, the Dark Tetrad traits and negative social potency.*

Variable	<i>N</i>	<i>M</i>	<i>SD</i>
Facebook trolling	147	18.44	5.64
Honesty-Humility	147	3.42	.60
Extraversion	147	3.20	.80
Agreeableness	147	3.17	.59
Conscientiousness	147	3.50	.62
Openness	147	3.52	.67
Emotionality	147	3.35	.63
Sadism	147	.10	.14
Machiavellianism	147	3.24	1.7
Psychopathy	147	2.57	1.5
Narcissism	147	4.12	1.9
Negative social potency	147	1.73	0.76

To assess the association of age, gender, the Dark Tetrad traits, negative social potency and the HEXACO PI-R traits on Facebook trolling behaviour, a hierarchical multiple regression was run. A summary of the regression analysis is presented in Table 3. At the first step the variables age and sex were entered. This model was not found to be significant with  $F(2, 144) = .89, p = .412$ . At the second step the model was significant  $F(6, 140) = 8.38, p < .01$  where the addition of the variables sadism, Machiavellianism, psychopathy and

narcissism added 25.2% to the explanatory variance in Facebook trolling behaviours for the current sample ( $R^2$  Change = .252;  $F(4, 140) = 11.99, p < .01$ ). In the third step the variable negative social potency was added. This added 3% to the explanation in total variance in Facebook trolling behaviour ( $R^2$  Change = 0.03;  $F(1, 139) = 5.85, p < .05$ ) and the model was significant  $F(7, 139) = 8.27; p < .01$ . In the fourth step the addition of the HEXACO PI-R traits explained additional 4.2% of the variance in Facebook trolling behaviour, although the change was not significant ( $R^2$  Change = .042;  $F(6, 133) = 1.39, p = .223$ ).

As can be seen in Table 2 there was no significant predictor of Facebook trolling behaviour at step one. At step two only two variables, sadism and Machiavellianism, were significant predictors. At step three negative social potency became an additional predictor, but Machiavellianism was no longer a significant predictor. At the fourth and last step, where the HEXACO PI-R traits were added, only sadism remained as a significant predictor of Facebook trolling behaviour. However, at the last step, negative social potency and the HEXACO PI-R trait conscientiousness came closest to significance of the non-significant variables with Beta values of  $\beta = .170, p = .072$  and  $\beta = -.152, p = .052$  respectively. Although Honesty-Humility correlated negatively with Facebook trolling behaviour it did not add to the explanation of Facebook trolling behaviour beyond the Dark Tetrad traits and negative social potency.

Table 2

*Pearson's correlation coefficients between predictor variables and the dependent variable Facebook trolling.*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Facebook trolling	-												
2. Honesty-Humility	-.228**	-											
3. Extraversion	-.192*	-.060	-										
4. Agreeableness	-.321**	.329**	.197*	-									
5. Conscientiousness	-.305**	.267**	.159	.202*	-								
6. Openness	-.014	.034	.217**	.104	-.003	-							
7. Emotionality	-.036	-.092	-.248**	-.189*	-.089	-.142	-						
8. Sadism	.452**	-.273**	-.197*	-.366**	-.197*	.065	.035	-					
9. Machiavellianism	.324**	-.495**	.075	-.355**	-.240**	.182	.061	.331**	-				
10. Psychopathy	.274**	-.397**	-.023	-.394**	-.272**	.185*	-.069	.304**	.544**	-			
11. Narcissism	.090	-.539**	-.193*	-.145	-.142	.115	.076	.139	.472**	.396**	-		
12. Negative Social Potency	.415**	-.433**	-.174*	-.319**	-.340**	-.114	.131	.453**	.422**	.412**	.295**	-	
13. Gender	.074	.011	-.008	.063	.011	.020	-.256**	-.038	-.092	-.017	.014	.046	
14. Age	.072	-.223**	-.060	-.088	-.40	.069	-.056	.152	.117	.114	.138	.106	-.120

\*  $p < 0.05$  (two-tailed)

\*\*  $p < 0.01$  (two-tailed)

Table 3

*Summary of the Hierarchical Multiple Regression Analysis for Age, Gender, The Dark Tetrad Traits, Negative Social Potency and the Hexaco PI Traits Predicting Facebook Trolling Behaviour.*

Variable	<i>B</i>	<i>SE</i>	$\beta$	<i>t</i>	<i>R</i> <sup>2</sup>
Step 1					0.012
Constant	18.000	0.574			
Gender	1.411	1.399	0.084	1.009	
Age	1.091	1.102	0.083	0.990	
Step 2					0.264
Constant	14.716	1.094			
Gender	1.771	1.233	0.106	1.436	
Age	1.161	0.982	0.088	1.183	
Sadism	15.714	3.247	0.379	4.84**	
Machiavellianism	0.669	0.312	0.203	2.146*	
Psychopathy	0.301	0.328	0.082	0.916	
Narcissism	-0.310	0.249	-0.105	-1.244	
Step 3					0.294
Constant	13.335	1.218			
Gender	1.514	1.217	0.90	1.244	
Age	0.934	0.970	0.071	0.963	
Sadism	12.774	3.415	0.308	3.740**	
Machiavellianism	0.548	0.310	0.166	1.767	
Psychopathy	0.166	0.327	0.045	0.506	
Narcissism	-0.364	0.246	-0.123	-1.477	
Negative Social Potency	1.569	0.649	0.211	2.419*	
Step 4					0.336
Constant	27.288	6.513			
Gender	1.139	1.264	0.068	0.901	
Age	0.703	0.999	0.053	0.704	
Sadism	11.018	3.583	0.266	3.075*	
Machiavellianism	0.535	0.320	0.162	1.673	
Psychopathy	-0.86	0.350	-0.23	-0.246	
Narcissism	-0.213	0.271	-0.72	-0.783	
Negative Social Potency	1.261	0.695	0.170	1.814	
Honesty-Humility	0.223	0.904	0.024	0.805	
Extraversion	-0.573	0.575	-0.081	-0.996	
Agreeableness	-1.065	0.824	-0.111	-1.292	
Conscientiousness	-1.387	0.706	-0.152	-1.964	
Openness	-0.133	0.656	-0.016	-0.203	
Emotionality	-0.982	0.719	-0.110	-1.366	

\*  $p < 0.05$  \*\*  $p < 0.01$

## Discussion

The aim of the current study was to examine the relationship between The Dark Tetrad traits, negative social potency, the HEXACO PI-R traits and Facebook trolling behaviour. Following Buckels et al. (2014) and Craker and March (2016) it was hypothesized that higher levels of the Dark Tetrad traits would predict Facebook trolling behaviour. This hypothesis was supported where Facebook trolling behaviour was significantly correlated with the traits Machiavellianism, psychopathy, and sadism and had Facebook trolling behaviour the highest association with sadism. This is in line with Buckels et al.'s (2014) research where sadism was the most robust predictor of the Dark Tetrad traits on internet trolling behaviour. Narcissism, however, did not show significant association in the current study.

It was hypothesized that negative social potency would predict Facebook trolling behaviour, which was supported by a positive association between negative social potency and Facebook trolling behaviour, consistent with previous findings (Craker & March, 2016).

The hypothesis that Facebook trolling behaviour would be negatively associated with the HEXACO traits Agreeableness and Conscientiousness was supported as Facebook trolling behaviour was negatively correlated with the two traits. This is in line with the findings of Buckels et al. (2014). It was further hypothesized that Facebook trolling behaviour would be positively associated with the trait Extraversion. This hypothesis was not supported, and in fact, Facebook trolling behaviour was negatively associated with Extraversion. This contradicts the findings of Buckels et al. (2014) where trolling as a favoured activity was positively associated with Extraversion. This difference could either be explained by the differences in measurement of Extraversion between the HEXACO PI-R (Lee & Ashton, 2004) and the Big Five, the scale Buckels et al. (2014) used, or by the fact that the trolls in Buckels et al.'s study were more likely to have anonymity while trolling

whereas the trolls of the current study troll on Facebook which requires people to use the name they are known by (Osofsky & Gage, 2015).

The hypothesis that Facebook trolling behaviour would be negatively associated with the trait Honesty-Humility was supported which is in line with previous research where Honesty-Humility has been found to be a predictive factor for antisocial and dishonest behaviour (Gylfason, Halldorsson, & Kristinsson, 2016; Hilbig & Zettler, 2015; Lee, Ashton, & Shin, 2005).

In addition to the variance explained by the Dark Tetrad traits and negative social potency, it was hypothesized that the HEXACO PI-R traits would predict Facebook trolling behaviour. This hypothesis was not supported. That could be due to limited sample size since Conscientiousness was a hair's-breadth away ( $p = .052$ ) from significantly predicting Facebook trolling behaviour. Interestingly, the addition of the HEXACO PI-R pushed out Machiavellianism ( $p = .097$ ) and negative social potency ( $p = .072$ ) as predictive factors, however, with a larger sample size this might not have been the case.

### **Strengths and weaknesses**

The snowball sampling technique can be an advantage because of how fast the recruiting could be and how easy it is to reach a particular group of people, in this case people who actively use the social networking site Facebook. The disadvantage is the possibility of sampling bias. The link to the survey was shared on Facebook and because of the nature of the connections on Facebook (i.e. only ones approved friends, and sometimes friends of those friends, can see the content one shares) the survey could have circulated within a narrow group of likeminded people.

The gender ratio was very much in the favour of females for the current sample, similar to Craker and March's (2016) study where females were 75.9% . This could be an effect of the snowball sampling technique that was used. Unlike in Craker and March (2016), there was no gender difference in the scores on the GAFT scale implying that this

oversampling of women might not reduce the reliability of the current results. Another possible limit is, that because of the anonymity of the study, the questionnaire itself could have been trolled by participants. According to Binns (2012) the anonymity of online communities, where diverse personalities thrive and lively debate occurs, works as a magnet for trolls, because they are there to disrupt the conversation. However, any anonymous self-report survey is subject to this kind of bias.

### **Conclusion and future research**

The current research sheds light on what kind of personality types are more likely to show trolling behaviour on the social networking site Facebook. This study did provide support to the findings of Craker and March (2016) and Buckels et al. (2014), however, the HEXACO traits did not add any explanation to the variance beyond the Dark Tetrad traits and negative social potency.

The information provided by this study could be beneficial to people who use or work with Facebook professionally. Companies often use Facebook for public relations and marketing, engaging with their customers and spreading their word (Sabate, Berbegal-Mirabent, Cañabate, & Leberherz, 2014). Those who manage such Facebook profiles could benefit from understanding trolling behaviour.

Using the current data to educate people about trolling behaviour could be beneficial to reduce any psychological effects of trolling. Results from Kim and Lee's (2011) study showed that college students subjective well-being was associated with number of Facebook friends and their self-presentation, which could be affected by someone trolling them. Educating people about what lies behind trolling behaviour could be of importance, informing them about the characteristics of the trolls such as their manipulative and deceptive skills (Machiavellianism), their selfish and cruel nature (psychopathy), and their motivation to seek a negative social reward (negative social potency).

Future research should look at other popular platforms of social media. As Hardaker (2010) mentioned about the *success* part of trolling, the network or platform is of importance for the trolling to work properly. From that one can assume that the characteristics of those who show trolling behaviour could be different between social media platforms and should be studied separately.

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