Using Tinder® to start a fire: Predicting antisocial use of Tinder® with gender and the Dark Tetrad

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ABSTRACT

Online dating continues to grow in popularity and is associated with significant advantages; however, experiencing antisocial behaviours when online dating is a distinct possibility. The aim of the current study was to explore the utility of gender and the dark personality traits of narcissism, Machiavellianism, psychopathy, and sadism in predicting perpetration of a range of antisocial behaviours on the popular dating app Tinder. It was hypothesised that the male gender and higher scores on these personality traits would predict perpetration of antisocial behaviours on Tinder. Participants ($N = 587$; 21% men, 79% women) completed an online questionnaire, including the Antisocial Uses of Tinder® Scale which was constructed to measure a range of antisocial behaviours. Exploratory and Confirmatory factor analyses revealed three forms of antisocial behaviours (General, esteem, and sexual) which explained over half of the variance (58.99%) of variance in the Antisocial Uses of Tinder® measure. Regression analyses were run for each form of antisocial behaviour, and the predictive utility of gender and the dark traits were found to differ across the antisocial behaviours. Results of the current study support an individual differences approach to exploring antisocial behaviours online, particularly when online dating.

Online dating, the use of websites and applications that are specifically created to assist users to meet potential romantic partners (Wiederhold, 2015) has become a common method to meet new romantic interests (March, Grieve, Marrington, and Jonason, 2017). There are unique benefits of online dating, including opportunities to meet a large number of potential partners (Wiederhold, 2015), and more privacy and control than face-to-face interactions (Anzani, Di Sarno, and Prunas, 2018). Despite these benefits, the increase in popularity and use of online dating has also generated a space for new online, antisocial behaviours to occur (Hahn et al., 2018). The current study examines, for the first time, predictors of online dating antisocial behaviour, specifically focusing on the popular dating app Tinder. Awareness of antisocial behaviours that can occur on Tinder as well as predictors of these behaviours is crucial in minimising the risks and increasing the safety for individual users off the app (March et al., 2017). Further, a particular theoretical implication of the current study is the construction of a scale designed to exclusively assess antisocial behaviours on Tinder.

1. Online dating and Tinder

Tinder, a Location Based Real-Time Dating (LBRTD) app, uses a global positioning system (GPS) to 'match' users within a similar proximity (Anzani et al., 2018). The popularity of Tinder is indisputable; an estimated 10 million individuals use Tinder daily and the app has been downloaded more than 100 million times globally (Sevi, Aral, and Eskenazi, 2018). The popularity has been reflected in research, with March et al. (2017) reporting that 92% of their participants had previously used Tinder. Such popularity statistics highlight the importance of Tinder receiving particular research focus in comparison to other LBRTD apps (Orosz, Tóth-Király, Bőthe, and Melher, 2016).

In an attempt to explore reasons why individuals may use Tinder, researchers have paid particular attention to individual motivations. Entertainment, passing time, excitement, relaxing, and curiosity have been reported as common motivators to use Tinder (Ligtenberg, 2015; Timmermans and De Caluwé, 2017a). Compared to women, men were more likely to use Tinder for casual sex and excitement (Ligtenberg, 2015), and the motivation for using Tinder for casual sex has been linked to individual levels of (low) sexual disgust sensitivity and (high) sociosexuality (Sevi, 2019; Sevi et al., 2018). Sociosexuality has also been linked to using Tinder to engage in infidelity (Weiser et al., 2018). Tinder motivations have also been linked to self-presentation on the app; the motivation to 'hook up' was positively related to deceptive self-presentation and the motivation to find friends was positively related to

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authentic self-presentation (Ranzini and Lutz, 2016). Finally, researchers have also found self-esteem enhancement is a significant motivator for Tinder use, and may be particularly predictive of problematic Tinder use (Orosz et al., 2016; Orosz et al., 2018).

2. Tinder and antisocial behaviour

Despite the benefits Tinder offers, such as the potential for friendship and entertainment, the app can still be used for antisocial purposes (March et al., 2017). Compared to other dating apps, Tinder is more often associated with less long-term relationships, dangerous, often risky sexual behaviours (Hahn et al., 2018), and acts of non-consensual sex (Shapiro et al., 2017). Compared to other dating apps, Tinder users may also experience more instances of antisocial behaviour such as cybercrime and invasion of privacy (Murphy, 2017). Women in particular report experiencing antisocial behaviours on Tinder, including harassment and objectification (Lopes and Vogel, 2017), with statistics showing 57% of female Tinder users report experiencing some form of harassment, compared to 21% of male Tinder users (Burgess, 2016). Research has also shown that compared to other dating apps, Tinder users are generally perceived as less trustworthy (Silva, Koch, Rickers, Kreuzer, and Topolinski, 2019).

Experiencing antisocial behaviours when online dating can have the same detrimental outcomes as experiencing antisocial online behaviours on other platforms; in particular, experiencing sexual cyber abuse can have significant negative effects guilt and shame, feelings of depression, withdrawal from social networks, and self-harm (Mishna, McLuckie, and Saini, 2009). One way to understand and manage online antisocial behaviours is to understand the predictors of this behaviour, and previous research has established gender and personality traits as predictors of antisocial dating behaviours (Jonason, Luevano, and Adams, 2012; Timmermans and De Caluwé, 2017a, 2017b).

3. Predicting antisocial online dating behaviours: gender and personality

Compared to women, men are more likely to engage in antisocial behaviours when online dating, such as misrepresenting positive information about themselves especially when women were more resistant to communicating with them online (Guadagno, Okdie, and Kruse, 2012). Apps like Tinder are often a host to misogynistic language that degrades women based on appearance standards and that much of this harassment and degradation is aimed towards women (Thompson, 2018).

In addition to gender, research has found utility for the Dark Tetrad[1] traits to predict antisocial dating behaviours. Individuals with higher levels of dark traits are more likely to employ deceptive sexual practices within relationships (Jonason, Li, and Buss, 2010). Previous research has shown trait psychopathy to be associated with sexual coercion and predatory sexual behaviour (medium to large effect size; O'Connell and Marcus, 2016), and impulsive, aggressive, short-relationships (Furnham, Richards, and Paulhus, 2013). Trait Machiavellianism has been associated with strategic and manipulative behaviours in intimate relationships (Furnham et al., 2013) and trait narcissism has been associated with a more opportunistic than exploitative mating style (Jonason et al., 2012). Finally, trait sadism has been shown to be a strong predictor of relational aggression (Reidy, Zeichner, and Seibert, 2010). Regarding Tinder, individuals with higher levels of trait psychopathy are more likely to use the app whilst in a committed

relationship, and higher levels of trait psychopathy and narcissism are positively related to the sexual experience use of Tinder motive (Timmermans, De Caluwé, and Alexopoulos, 2018).

In the only empirical study to date to broadly explore antisocial behaviours specifically on Tinder, March et al. (2017) explored the utility of gender and the Dark Tetrad in predicting perpetration of trolling behaviours on Tinder. Results showed trait psychopathy and sadism were both significant positive predictors of trolling behaviours on Tinder. Interestingly, gender was not a significant predictor of trolling on Tinder. However, the lack of utility of gender in this study could be attributed to methodological limitations; for example, a particular limitation is that the researchers only examined the antisocial behaviour of trolling. Given the amount of research indicating men are more likely to perpetrate antisocial behaviours when dating (Couch, Liamputtong, and Pitts, 2012; Guadagno et al., 2012; Thompson, 2018), there is still rationale for gender to be a significant predictor of general antisocial behaviours on Tinder.

4. The current study

To the best of our knowledge, no research to date has explored a broader range of antisocial behaviours on Tinder and dispositional predictors of these behaviours. The aim of the current study was to explore how the utility of gender and the Dark Tetrad traits of narcissism, psychopathy, Machiavellianism, and sadism in predicting perpetration of antisocial behaviours on Tinder. It was hypothesised that gender and the traits of narcissism, psychopathy, Machiavellianism, and sadism will predict significant variance in perpetration of antisocial behaviours on Tinder. Specifically, the male gender and higher scores on these personality traits will predict more perpetration of antisocial behaviours on Tinder.

5. Method

5.1. Participants and procedure

Participants were recruited via online advertisements on social media (e.g., Facebook, Instagram, and Reddit). Participants were not recruited from the researchers' social network; rather, advertisements were posted on Facebook and Reddit research participation groups. On Instagram, the study was advertised via the comment section on posts by psychology accounts. The advertisement informed potential participants of the confidential, anonymous online questionnaire. A total 587[2] participants (21% male, 79% female; M_{age} = 23.75 years, SD = 6.05) completed the survey. Of the sample, 56.2% identified as single, 50.9% were currently enrolled in an undergraduate degree, and 45.9% of the sample had attained high school education. All participants had previously used Tinder and 45.7% had current, active profiles.

5.2. Measures

The online questionnaire comprised of an information letter to participants, questions regarding demographics, and the following measures.

5.2.1. Short Dark Triad

The Short Dark Triad (SD3; Jones and Paulhus, 2014) was used to measure trait narcissism, Machiavellianism, and psychopathy. The SD3 is a 27-item scale with nine items measuring narcissism (e.g., "People see me as a natural leader"), nine items measuring Machiavellianism

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[1] The Dark Tetrad (Chabrol, Leeuwen, Rodgers, and Séjourné, 2009) comprises trait narcissism (grandiosity, self-importance), Machiavellianism (tendency to manipulate and exploit others), psychopathy (callous nature and empathy deficits), and sadism (enjoyment in inflicting physical and psychological pain).

[2] Initially, 834 people accessed the questionnaire; however a number of participants did not proceed past the consent page, or complete the full measures

Table 1

Exploratory factor analysis: principal axis factoring extraction with oblimin rotation item loadings on factors 1, 2, and 3.

Item	Factor 1 (antisocial-general)	Factor 2 (antisocial-esteem)	Factor 3 (antisocial-sexual)
1. I use Tinder to show off	0.45		
2. I use Tinder to make people feel jealous	0.57		
3. I use Tinder to display my wealth	0.73		
4. I use Tinder to be mean to people	0.85		
5. I use Tinder to post sexy pictures of myself			
6. I use Tinder to make myself seem mysterious			
7. I use Tinder to badmouth people.	0.88		
8. I use Tinder to get an ego boost from high quality matches		0.80	
9. I use Tinder to make myself feel more attractive		0.94	
10. I use Tinder to feel good about myself		0.84	
11. I use Tinder to increase my self-worth		0.65	
12. I use Tinder to sexually coerce others			0.55
13. I use Tinder to create conflict	0.77		
14. I use Tinder to harass other users	0.75		
15. I use Tinder to vent frustrations	0.51		
16. I use Tinder to troll			
17. I use Tinder to meet own sexual needs, disregarding the benefit of others			0.83
18. I use Tinder to take advantage of the anonymity the app offers			0.49
Variance explained	38.06%	15.20%	5.73%

Note. Applied 'fair' loading cut-off of 0.4; loadings below .4 are suppressed; Items 5, 6, and 16 did not load on Factors.

(e.g., "It's not wise to tell your secrets"), and nine items measuring psychopathy (e.g., "I like to get revenge on authorities"). Participants indicated their agreement to statements on a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree).

5.2.2. Short Sadistic Impulse Scale

To measure trait sadism, participants completed the Short Sadistic Impulse Scale (SSIS; O'Meara, Davies, and Hammond, 2011). The SSIS is a 10-item scale and participants respond to statements (e.g., "I would enjoy hurting someone physically, sexually, or emotionally") on a 5-point Likert scale (1 = Strongly Disagree; 5 = Strongly Agree).

5.2.3. Antisocial uses of Tinder®

To measure antisocial uses of Tinder, the Antisocial Uses of Tinder® scale was developed by adapting the Antisocial Uses of Facebook® measure (Ferenczi, Marshall, and Bejanyan, 2017) and examining items included in measures of online/dating behaviour (Jonason et al., 2012; Kicaburun, Jonason, and Griffiths, 2018). Participants responded to 18 statements on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). The Antisocial Uses of Facebook® subscale (Ferenczi et al., 2017) was included to establish concurrent validity of the Antisocial Uses of Tinder® scale, and these scales were r(526) = 0.55, p < .001, indicating a strong, positive correlation and demonstrating convergent validity. Importantly, the correlation was not too high to suggest singularity between the measures. The Antisocial Uses of Tinder® scale demonstrated excellent internal consistency (Cronbach's alpha = 0.88).

6. Results

6.1. Antisocial uses of Tinder® measure: exploratory and confirmatory factor analysis

An Exploratory Factor Analysis (EFA) with Principal Axis Factoring extraction and an Oblimin rotation was performed on the Antisocial Uses of Tinder® measure (KMO = 0.91). Results showed three factors with eigenvalues above 1, explaining 58.98% of total variance. The complete measure and factor loadings can be seen in Table 1.

Considering the item loadings on Factors 1, 2, and 3, these Factors were labelled Antisocial-General (Use of Tinder), Antisocial-Esteem (Use of Tinder), and Antisocial-Sexual (Use of Tinder), respectively. Total scores for each factor were calculated, and bivariate correlations between each factor (Table 2) confirmed appropriateness of the

Oblimin rotation.

Given the novelty of the scale, a Confirmatory Factor Analysis (CFA) was also performed and confirmed the scale structured obtained from the EFA (χ^2(105) = 4263.53, p < .001, RMSEA = 0.27, CFI = 0.99). To assess unity between first-order and second-order models, a target coefficient was calculated. The covariance between the first-order factors was found to not be adequately explained by the second-order factor (The target coefficient = 0.34); thus, due to a lack of uni-dimensionality, factor scores instead of a total antisocial use of Tinder score were used in the analyses.

6.2. Regression analyses

An initial G*Power analysis was run to determine the sample size required for statistical power. For = 0.95 and a multiple regression with 5 predictors, a sample size of 74 is required. Both our male (N = 123) and female (N = 464) sample size exceed this.

Internal consistency, descriptives, and bivariate correlations can be seen in Table 2. Significant bivariate correlations between predictors and criterions supported their inclusion in a regression model.[3] Regression analyses were conducted predicting the following criterions: Antisocial-General, antisocial-esteem, and antisocial-sexual (see Table 3).

As seen in Table 3, all Dark Tetrad traits were significant, positive predictors of antisocial-general use of Tinder. For antisocial-esteem use of Tinder, gender (females) was a significant predictor and Machiavellianism was a significant positive predictor. Finally, for antisocial-sexual use of Tinder, gender (male) was a significant predictor, and Machiavellianism, psychopathy, and sadism were all significant, positive predictors.

7. Discussion

The aim of the current study was to explore the utility of gender and the Dark Tetrad traits of narcissism, psychopathy, Machiavellianism, and sadism predicting perpetrating of antisocial behaviours on Tinder. Results partially supported the hypothesis that men and higher levels of dark traits would predict higher perpetration of these behaviours. Results for antisocial use of Tinder: General, esteem, and sexual will

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[3] Narcissism and antisocial-esteem were not significantly correlated; as such, narcissism was not included in the regression model

Table 2
Internal consistency, descriptives, and bivariate correlations for predictors of gender, narcissism, Machiavellianism, psychopathy, and sadism, and criterions of antisocial-general, antisocial-esteem, and antisocial-sexual.

	α	M (SD)	1.	2.	3.	4.	5.	6.	7.
1. Gender									
2. Narcissism	0.69	24.38 (5.05)	−0.12*						
3. Machiavellianism	0.74	26.15 (5.52)	−0.20***	0.27***					
4. Psychopathy	0.73	20.15 (5.42)	−0.19***	0.33***	0.48***				
5. Sadism	0.86	15.22 (5.77)	−0.24***	0.13*	0.40***	0.51***			
6. Antisocial-general	0.85	9.07 (3.10)	−0.15***	0.21***	0.33***	0.42***	0.42***		
7. Antisocial-esteem	0.89	11.46 (4.57)	0.05	0.12*	0.23***	0.17***	0.12*	0.28***	
8. Antisocial-sexual	0.67	5.43 (2.47)	−0.22***	0.20***	0.35***	0.49***	0.36***	0.55***	0.38***

Gender: men = 1, women = 2.
* $p < .01$.
*** $p < .001$.

Table 3
Multiple Regression Analyses with Predictors of Gender, Narcissism, Machiavellianism, Psychopathy, and Sadism, and the Criterions of: Antisocial-General, Antisocial-Esteem, and Antisocial-Sexual.

	B	SE	β	t	F	df	adj. R²%
Criterion: antisocial-general					34.35**	5, 517	24.20%
Gender	−0.16	0.31	−0.02	−0.52			
Narcissism	0.05	0.03	0.08	2.00*			
Machiavellianism	0.05	0.03	0.09	2.00*			
Psychopathy	0.12	0.03	0.21	4.35**			
Sadism	0.14	0.03	0.26	5.69**			
Criterion: antisocial-esteem					9.89**	4, 518	6.40%
Gender	1.29	0.51	0.11	2.54*			
Machiavellianism	0.18	0.04	0.21	4.22**			
Psychopathy	0.05	0.05	0.06	1.05			
Sadism	0.03	0.04	0.03	0.61			
Criterion: antisocial-sexual					39.37**	1, 517	27.00%
Gender	−0.61	0.24	−0.10	−2.53*			
Narcissism	0.02	0.02	0.03	0.76			
Machiavellianism	0.05	0.02	0.11	2.38*			
Psychopathy	0.16	0.02	0.36	7.47**			
Sadism	0.04	0.02	0.10	2.26*			

Gender: men = 1, women = 2.
* $p < .05$.
** $p < .001$.

now be discussed individually.

7.1. Predicting antisocial uses of Tinder: general, esteem, and sexual

7.1.1. Antisocial-general

Gender was not a significant predictor of antisocial use of Tinder; a result inconsistent with (albeit limited) previous research indicating men, compared to women, are more likely to perpetrate antisocial behaviours when online dating (Guadagno et al., 2012). However, this result does support March et al. (2017) who found no gender difference in perpetrating trolling behaviours on Tinder. Results of the current study support the suggestion of March et al. (2017) that women's online antisocial behaviours may be context-dependent. Further, this lack of gender difference in perpetrating general antisocial behaviours aligns with previous research that has found no sex differences in online aggressors (see Ybarra and Mitchell, 2004).

Trait narcissism, Machiavellianism, psychopathy, and sadism were significant, positive predictors of antisocial-general use of Tinder, corroborating previous research that has found these traits to predict antisocial online behaviours such as dishonest self-promotion and aggression (Abell and Brewer, 2014) online trolling (Craker and March, 2016; Sest and March, 2017), and cyberstalking (Smoker and March, 2017). Individuals with high levels of these dark traits may be attracted to Tinder for a number of reasons. Those with high trait narcissism may use the anonymity of Tinder in order to exploit potential romantic partners, purely to meet their own narcissistic needs (Jonason et al.,

2012). Individuals with high trait Machiavellianism may use the app to artificially enhance their reputations and manipulate social relationships (e.g., Abell and Brewer, 2014). Individuals with high trait psychopathy could use Tinder to satisfy their desire for short-term, impulsive and aggressive relationships (Furnham et al., 2013), and individuals with high trait sadism might be attracted to Tinder as a mechanism to facilitate sadistic, sexual interactions, such as sending unsolicited sexual images (see March and Wagstaff, 2017).

7.1.2. Antisocial-esteem

For antisocial-esteem behaviour, results showed gender (specifically, women) and higher levels of trait Machiavellianism were significant predictors. This result corroborates previous research finding women, compared to men, are more likely to use online platforms for esteem purposes (Ferenczi et al., 2017). Previous research has also shown a relationship between problematic Tinder use and attempts to enhance self-esteem (Orosz et al., 2018).

These results also corroborate previous research that found individuals with higher trait Machiavellianism were more likely to strategically use social media to self-monitor and self-promote (Abell and Brewer, 2014). Given the significance of trait Machiavellianism to predict using Tinder for esteem purposes, individuals with higher levels of trait Machiavellianism may be more inclined to strategically use Tinder in an effort to increase their ego and self-worth.

7.1.3. Antisocial-sexual

Finally, for antisocial-sexual behaviour, gender (specifically, men) and higher levels of trait Machiavellianism, psychopathy, and sadism were significant predictors. Compared to women, men may be more likely to use Tinder for more sexual and coercive purposes, corroborating previous research that has found men are more likely than women to use Tinder for casual sex (Sumter, Vandenbosch, and Ligtenberg, 2017). As Tinder offers the potential for deceptive dating tactics to enhance sexual activities, this may appeal to individuals with higher levels of trait Machiavellianism (see Dussault, Hojjat, and Boone, 2013). Tinder may appeal to the individual with high trait psychopathy, as the app offers the opportunity for anonymous sexual coercion and predatory sexual behaviour. Finally, it is not particularly surprising individuals with higher levels of trait sadism would use Tinder for antisocial-sexual purposes, as trait sadism has been found to be predictive of sexual assault and violence (Russell and King, 2016).

Taken together, these results indicate different explanatory variables for different antisocial behaviours on Tinder. Importantly, these results suggest that antisocial online behaviour is not unidimensional, and an individual differences approach to understanding online behaviours is an appropriate one.

7.2. Limitations and future directions

It should be noted that the Antisocial Uses of Tinder® Scale was employed for the first time in the current study, and as such has not undergone rigorous validation procedures. Despite the scale yielding excellent internal consistency and establishing convergent validity, future research should seek to further establish psychometric properties of this scale.

Given an aim of the current study was to explore gender differences in antisocial Tinder behaviours, future research on antisocial Tinder behaviour should seek to recruit a more equal gender ratio, as there was significant disparity in the current study (21% men, 79% women). Future research exploring antisocial online dating behaviour may also wish to employ an alternative, multidimensional measure of gender.

In the current study, we assessed Tinder use by adopting the method of Timmermans and De Caluwé (2017b) who asked participants to indicate their Tinder use: Current or never. Future research could extend exploration of antisocial behaviour on Tinder by assessing active and non-active users,[4] and if individuals who use Tinder more frequently (i.e., intensely) perpetrate more antisocial behaviours. This could be assessed by adopting measurement of Sumter et al. (2017), who asked participants to indicate how often they used the app on a scale (1 = once or twice, 2 = monthly, 3 = 1 to 3 times a week, 4 = 4 to 5 times a week, and to 5 = every day). Such exploration of Tinder use and cessation could yield a more comprehensive exploration of current and previous Tinder users, and why previous users stopped using the app.

7.3. Conclusion

The current study explored, for the first time, the utility of gender and the Dark Tetrad traits of narcissism, Machiavellianism, psychopathy, and sadism in predicting perpetration of antisocial behaviours on Tinder. Results can inform policy makers and moderators of Tinder; one possibility is the inclusion of an initial personality screening measure to predict an individual's likelihood of perpetrating certain antisocial behaviours. Results of the current study can be used to mitigate dangers and risks that may arise when using Tinder, so that all users and hopeful romance seekers may have safe and enjoyable experience.

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[4] Thank you to an anonymous reviewer for this suggestion

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