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ABSTRACT

The recent and rapid growth of user engagement on online and social media platforms has attracted increasing attention from communication scholars. Troublingly, little is known about the relationship between "dark" personalities and online communication behavior. There is a distinct need for communication scholars to investigate the impact of anti-social personality traits on computer- mediated communication behavior. To address this, we conducted a survey (N = 147) among undergraduate students living in the US to identify the association between the three Dark Triad personality traits (narcissism, Machiavellianism, and psychopathy) and six computer-mediated communication outcomes (e.g., compulsive Internet behavior, opinion leadership, perceived anonymity, media trust, social media self-presentation, and psychological reactance). We also examine gender as a potential moderator. These findings show a distinct relationship between Dark Triad personality traits and computer-mediated communication outcomes, highlighting the importance of considering these psychological individual differences in future research in this area.

KEYWORDS

Dark Triad; Anti-social communication; Online communication

Introduction

Social media has benefited our lives in myriad ways. Nevertheless, it also facilitates a preponderance of hostile interactions. As examples, people believe that social media discussions on politics are less respectful compared to other political discussion venues (Pew Research Center, 2016). 41% of Americans report being personally exposed to online harassment, and 66% of Americans indicated that they have observed others being harassed (Pew Research Center, 2017). These observations lead to important questions: what personality traits do these online aggressors exhibit, and how does this impact online communication? Also, what role does gender play in this scenario? We address these questions through survey research investigating the three anti-social social

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personality traits of the Dark Triad (narcissism, Machiavellianism, and psychopathy) and six relevant online communication behavior constructs (compulsive Internet behavior, opinion leadership, perceived anonymity, media trust, social media self-presentation, and psychological reactance).

The six communication constructs were chosen based on the following rationale: Compulsive Internet use has been identified in previous literature as a detrimental component in online communication behavior, which could eventually lead to addiction, as well as psychological and social dysfunction (Davidson & Walley, 1984). This observation on compulsive Internet use reflects several dimension of psychopathy, such as anti-social behavior and impulsivity, therefore making it a worthwile object of research in the context of this study. Opinion leadership and online social self-presentation have been found to be important indicators in regards to how individuals portray and "construct" themselves online and on social media (e.g., Jones & Paulhus, 2014; McCain & Campbell, 2018). This correlates with the trait of narcissism, which displays similar patterns such authority, feelings of grandiosity or superiority, as well as Machiavellianism which reflects dimension such as deception and strategic manipulation. Consequentially, both of these traits could inform indiviuduals' online communication behavior in regards to opinion leadership and self-presentation. Psychological reactance - the tendency to feel threatened if individual freedom and choices are perceived as limited - reflects the polarized climate in our modern social media landscape (Gruzd & Roy, 2014, and in turn mirrors relevant aspects of psychopathy such as anti-social communication behavior. Anonymity has been identified in previous research as a critical factor in terms of its effect on individuals' level of hostility and online aggression (Moore, Nakano, Enomoto, & Suda, 2012), reflecting the aforementioned dimensions of psychopathy. Lastly, trust toward media has significantly decreased over the last decades (Ardèvol-Abreu & Gil De Zúñiga, 2017), therefore raising the importance of studying this phenomenon in an online context. All of the three Dark Triad traits have been shown to score low on agreeableness (Jones & Paulhus, 2014), which in turn creates legimitacy to study more closely the association between media (dis) trust and the Dark Triad. Understanding the impact of these communication constructs in relationship to the Dark Triad traits could help strengthen theoretical perspectives on how negative personality traits affect online communication as well as provide researchers and social media advocates with practical contributions in terms of addressing the underlying mechanisms of negative online behavior.

The purpose of this investigation is to examine the association between Dark Triad personality traits and computer-mediated communication (CMC) constructs in an effort to demonstrate their growing relevance to the CMC literature and provide preliminary evidence and justification for their inclusion in future empirical investigations.

Literature review

In their seminal paper, Paulhus and Williams (2002) highlighted three anti-social personality traits that can be found in the general population, commonly referred to as the "Dark Triad": (1) Machiavellianism, which is characteristic of cold, strategically oriented, and manipulative behavior; (2) narcissism, which is indicative of feelings of superiority, entitlement, and grandiosity; and (3) psychopathy, which reflects high impulsivity and thrill-seeking combined with low anxiety and empathy. Existing research has shown that individuals high in Machiavellianism were more likely to take part in emotional manipulation (Austin, Farrelly, Black, & Moore, 2007), and engage in externally and strategically oriented thinking (Jonason & Krause, 2013; Jones & Paulhus, 2014). Narcissists were found to have negative emotionality (e.g., specifically vulnerable narcissists, see Miller et al., 2010), and to frequently engage in ego-promoting behavior (Jones & Paulhus, 2011). Psychopaths have been shown to demonstrate limited affective empathy (Jonason & Krause, 2013), as well as high dysfunctional impulsivity (Jones & Paulhus, 2014).

While research on the properties, functions, and impact of the Dark Triad personality traits has garnered significant attention in the domains of social and evolutionary psychology, little research has explored how the Dark Triad relates to the context of computer-mediated communication. This is a distinct oversight, as nascent research in this area suggests that psychopathy is associated with high levels of online trolling (March, Grieve, Marrington, & Jonason, 2017), narcissism is positively correlated with self-objectification on social networking sites (Fox & Rooney, 2015), and psychopathy and Machiavellianism are indicative of increased cyber-aggression (Pabian, De Backer, & Vandebosch, 2015).

We intend to expand the theoretical understanding of anti-social personality traits and how they are related to online users' communication behavior in online media and social media networks. Therefore, in this investigation we test the associations between the Dark Triad traits and six relevant constructs in the context of CMC (e.g., compulsive Internet behavior, opinion leadership, perceived anonymity, media trust, psychological reactance, social media self-presentation behavior). In previous research, compulsive Internet use (e.g., deviant online behavior) has been associated with sensitivity to reward and increased levels of impulsivity (e.g., Meerkerk, van den Eijnden, Franken, & Garretsen, 2009), as well increased levels of exploitative and manipulative behavior (Rogers, Smoak, & Liu, 2006). As such, we would expect that compulsive Internet usage is positively associated with psychopathy. Distrust in media has been associated with attitude extremity (Gunther, 1988), leading to the assumption that narcissism and psychopathy might be positively associated with distrust in media. Perceived opinion leadership and self-presentation behavior on social media have been linked to high degree of extraversion and

openness to experience (Song, Cho, & Kim, 2017), suggesting that narcissism might be positively correlated with these constructs. Psychological reactance (i.e., the degree to which someone perceives something as a threat to their personal freedom) has been associated with high aggression and low agreeableness (Seemann, Buboltz, Thomas, Soper, & Wilkinson, 2005), which are also important predictors in relation to the Dark Triad.

Previous research has also indicated that males consistently receive higher Dark Triad scores than their female counterparts (Furnham & Trickey, 2011; Paulhus & Williams, 2002). Jonason et al. (2009) maintained that this gender difference frequently functions as a moderator in interpersonal relation outcomes (i.e., men are more likely to engage in short-term mating strategies in comparison to women). Given that in previous research males have been more hostile (Tang & Fox, 2016) participants than females, we were interested in finding out whether a similar pattern could be observed in the realm of computer-mediated communication and therefore aimed to investigate the role of gender as a potential moderator between Dark Triad personalities and online communication behavior.

Research questions and hypotheses

Based on the previous argumentation we propose the following hypotheses:

H1: Psychopathy will be positively associated with compulsive Internet use.

H2: Narcissism and psychopathy will be positively associated with distrust in media.

H3: Narcissism will be positively associated with perceived opinion leadership.

H4: Narcissism will be positively associated with online self-presentation behavior.

H5: Psychopathy and Machiavellianism will be positively associated with psychological reactance.

In addition, the following research question is postulated:

RQ: Does gender moderate the relationship between Dark Triad personalities and online communication behavior?

Study procedure

The survey questionnaire was created online via Qualtrics and administered to undergraduate students in communication and advertising classes at a mid-size Southern university. Students received extra credit as reward for participating in the study. The final sample consisted of a total of 147 undergraduate students, of which 20% (n = 29) were male and 80% (n = 118) were female (e.g., see Table 1 for more information on sample characteristics). In terms of ethnicity, the majority of participants identified themselves as Non-Hispanic Caucasian (n = 69), followed by Hispanic (n = 30), Asian (n = 22), other (n = 17), and African American (n = 13).

Measures

Machiavellianism (M = 3.16; SD =.67; α = .72), narcissism (M = 3.18; SD = .63; α = .62), and psychopathy (M = 2.17; SD = .65; α = .74) were measured with the 27-item Short Dark Triad scale (Jones & Paulhus, 2014). Compulsive Internet behavior (α = .91) was assessed through the 14-item Compulsive Internet Use scale (Meerkerk, Van den Eijnden, Vermulst, & Garretsen, 2009). Psychological reactance (α = .83) was assessed through the 11-item Hong and Faedda (1996) measurement scale. Feelings of perceived online anonymity (α = .85) were measured through a 5-item scale (Hite, Voelker, & Robertson, 2014). Opinion leadership (α = .90) was assessed with a 6-item scale (Flynn, Goldsmith, & Eastman, 1994). Media trust (α = .90) was measured with a 15-item scale (Prochazka & Schweiger, 2019). Finally, self-presentation behavior (α = .80) was assessed on a 4 item measurement scale (Lee-Won, Shim, Joo, & Park, 2014).

Results

Correlation analyses were conducted to examine the relationship among the three Dark Triad traits and the six CMC constructs (See table 1). Results indicate that there was a positive relationship between Machiavellianism and compulsive Internet behavior (r = .24, p < .01), and psychological reactance

Table 1. Pearson correlation coefficients between Dark Triad variables and online communication variables (N = 147).

Variable	Machiavellianism	Narcissism	Psychopathy
Compulsive Internet behavior	.24**	.004	.19*
Opinion leadership	-.026	.20	-.06
Perceived anonymity	-.08	-.24**	.006
Media trust	.05	.04	-.08
Psychological reactance	.23**	.10	.35**
Social media self-presentation	-.08	.02	.24**

**p<.01, *p<.05.

Table 2. Summary of multiple regression with dark triad personalities and gender as independent variables (N = 147).

DV: Self-presentation behavior on social media				
Variable	*b*	*SE*	*t*	*p*
GenderXMachiavellianism	.33	.40	.83	.447
GenderXNarcissism	-.87	.39	-2.21	**.03***
GenderXPsychopathy	.04	.35	.80	.424
DV: Perceived anonymity				
Variable	*b*	*SE*	*t*	*p*
GenderXMachiavellianism	-.67	.37	-1.82	.07
GenderXNarcissism	.76	.36	2.14	**.03***
GenderXPsychopathy	.48	.32	1.47	.14
DV: Media trust				
Variable	*b*	*SE*	*t*	*p*
GenderXMachiavellianism	-.76	.29	-2.60	**.01****
GenderXNarcissism	.17	.29	.60	.56
GenderXPsychopathy	.07	.26	.25	.81

**$p<.01$, *$p<.05$.

(r = .23, p < .01). Psychopathy was positively associated with compulsive Internet behavior (r = .19, p < .05), and psychological reactance (r = .35, p < .001). However, psychopathy was negatively correlated with self-presentation behavior on social media (r = −.24, p < .01). Finally, the results showed a positive relationship between narcissism and opinion leadership (r = .20, p < .05), and a negative relationship between narcissism and perceived anonymity (r = −.24, p < .01).

Secondly, we ran a series of multiple regression with Dark Triad traits and gender as predictor variables, and with the six CMC constructs as dependent variables in order to test the interaction effect between Dark Triad personalities and gender on the outcome variables (see Table 2). The results indicate that gender moderates the relationship between narcissism and social media self-presentation (b = −.87, p < .05). Specifically, for females, there was a positive relationship between narcissism and self-presentation. For males, there was a negative relationship between narcissism and self-presentation. In addition, gender moderated the relationship between narcissism and perceived anonymity (b = .76, p < .05). For females, there was a negative relationship between narcissism and perceive anonymity. For males, there was a positive relationship between narcissism and perceived anonymity.

Discussion

Research on Dark Triad personality traits is a growing area of interest in psychology but has seen comparatively little attention in the CMC literature, despite its clear relevance. While there is extant empirical evidence in psychology research regarding differences and similiarititres between the three antisocial personality traits (Machiavellianism, narcissism, and psychopathy), few CMC studies have examined the potential theoretical and practical

ramifications of the Dark Triad in the context of anti-social online communication behavior. Broader statistical analyses such as correlation compuations are thus needed to provide a more comprehensive outview on the aforementioned relationships. To address this, we conducted a preliminary study in order to investigate how the three anti-social personality traits are related to online users' communication behavior. The results of the correlation analysis provide interesting and compelling preliminary insights in how these variables can be applied in CMC investigations. Specifically, three main findings emerged out of our empirical investigation, suggesting relevant contributions to existing theories in communication research.

First, the correlation analysis revealed a positive association between compulsive Internet behavior and both Machiavellianism and psychopathy. This finding is in line with previous research, which has documented that individuals who are high in psychopathy and Machiavellianism tend to engage in anti-social behavior and exhibit poor impulse control (Jones & Paulhus, 2014; Stead, Fekken, Kay, & McDermott, 2012). Mapping this correlational relationship onto existing cyberbullying models could aid in advancing theoretical understanding on the communicative and psychological mechanisms underlying this anti-normative online behavior. As an example, the Barlett and Gentile cyberbullying model (BGCM; Barlett & Gentile, 2012) offers theoretical propositions on the effect of anonymity and strength differential (e.g., the perceived difference in strength between bully and bullied) on cyberbullying frequency. The model predicts that anonymity and large gaps in strength differential lead to increases in cyberbullying frequency. We argue that the inclusion of Machiavellianism and psychopathy as well as the component of compulsive Internet use could provide more context, clarity and explanatory power to the theoretical arguments presented within the framework of the BGCM. Future research should incorporate Machiavellianism and psychopathy in their theoretical examinations of cyberbullying and help elucidate the effect of these anti-social personality traits on compulsive Internet use and subsequent cyberbullying behavior.

Second, our correlation analysis showed that narcissism was positively correlated with perceived opinion leadership and social media self-presentation behavior, which is in agreement with previous research that has shown that narcissistic individuals tend to frequently update their status and pictures on social media (McCain & Campbell, 2018) and engage in ego-promoting behavior (Jones & Paulhus, 2014). Mehdizadeh (2010) found that low self-esteem moderated the relationship between narcissism and self-promotional activities. These findings suggest that narcissism is a driving force behind online communication behavior. As such, more theoretical approaches are needed to understand the specific circumstances and motivations behind narcissitic individuals' need to to express their voice and ego-promoting behavior. In addition, more

scholarly attention should be focused on whether and how different types of social media platforms are associated with narcissitic communication behavior. Social media platforms such as Facebook, Instagram, Twitter, TikTok, or Reddit vary greatly in terms of how users are able to communicate and express themselves online. As such, some platforms might be more conducive for the expression of ego-promoting behavior and therefore more suitable for narcissistc expression than others. Future research should further look into how these modes of narcisstic expression vary on different social media platforms and what specific circumstances or functionalities encourage or discourage narcissistic communication behavior.

Third, our results suggest that psychological reactance was positively associated with Machiavellianism and psychopathy. This finding could be of great relevance for future research regarding negative and aggressive behavior on social media and online communication platforms, as previous studies have shown that flaming (e.g., "the hostile expression of strong emotions and feelings", see Lea, O'Shea, Fung, & Spears, 1992, p. 89) is an ubiquitous occurrence on online and social media platforms (Hutchens, Cicchirillo, & Hmielowski, 2015; Massanari, 2017). In addition, several theoretical constructs in online communication could benefit from adopting anti-social individual differences such as psychopathy, Machiavellianism, and psychological reactance as predictors for aggressive online communication behavior. For instance, the main premise of the hostile media effect maintains that some individuals evaluate mass media coverage as unfavorable and untrustworthy if it contradicts their own point of view (Gunter and Schmitt, 2004). Very little is known about the psychological mechanisms underlying this theoretical framework and future research investigations should examine the role of these anti-normative individual traits pertaining to negatively evaluating media content.

Lastly, our regression analyses revealed that gender moderates the relationship between narcissism and self-presentation on social media as well as the relationship between narcissism and perceived anonymity. More specifically, our analysis results suggest that women who are high on narcissism will be more likely to present themselves favorably and perceive themselves to be less anonymous when interacting on social media. While this finding gives important indications, more research is needed to disentangle the role of gender in computer-mediated communication and provide a more coherent picture in terms of distinguishing between the communication behavior of male and female online users. In this context, previous studies have shown that users in male-centric social networks such as Reddit, 4Chen, and Twitter engage in harmful and destructive online conversation (Massanari, 2017; Santana, 2014), and that female online users exhibit more tendencies to engage to positive circumstances and avoid commenting on negative or conflicting information (Chang, 2016).

Limitations

Several limitations should be addressed. First, our study sample (n = 147) included an uneven gender distribution that was composed largely of female participants (n = 118). Consequentially, the results regarding the moderating influence of gender on the relationship between Dark Triad personalities and online communication variables should be interpreted with caution. Future research should utilize more balanced sample distributions in terms of gender in order to further discuss and empirically evaluate the results presented in this study.

Second, the reported significant correlations between the Dark Triad variables and communication variables were rather modest in effect size. As such, the effect size results of this study should be viewed being of exploratory nature and interpreted with caution.

Third, the sample data consisted of a small set of undergraduate college students. As such, inferences from the study sample to the the population should be interpreted with caution. Future research should recruit a bigger and demographically more diverse sample in order to address this concern.

Conclusion

In light of the recent proliferation of negative and anti-social online environments, more theoretical perspectives on how online communication behavior is affected by "dark" motives, behavior, and communication strategies, are needed. These theoretical advancements could elucidate our understanding on how the expression of the three Dark Triad traits on social media is either magnified or mitigated based on the communication context of social media platforms. In other words, different social media platforms present diverging modes of expression or communication profiles to online users, thereby causing the expression of Dark Triad traits to be more or less pronounced.

Continued and informed theory-buidling on the effect of the Dark Triad on online communication behavior also presents added value from a practical standpoint. A deeper and more nuanced understanding of the aforementioned mechanisms could be helpful in creating detection tools that provide online users in advance with information about some potential source of negative, hostile, or toxic communication environement. In addition, concise theory-buidling on the differential impact of Dark Traid traits in regard to online communication behavior could further inform media literacy training and development, thereby helping online users to more readily identify "toxic" personalities and harmful online content such as fake news or conspiracy networks such as QAnon. This study generates important preliminary findings and offers

an invitation for communication scholars to further explore anti-social communication behavior and theoretical perspectives in the context of computer-mediated communication.

Disclosure statement

No potential conflict of interest was reported by the authors.

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