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## Personality Factors Predicting Disinhibited and Risky Online Behaviors

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# Personality Factors Predicting Disinhibited and Risky Online Behaviors

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**Abstract:** The current study examined how individual differences relate to one's tendency to feel disinhibited in the online space. We conducted an online study for which we developed two short measures to assess online disinhibition and risky online behaviors. Specifically, we examined the relationship between feelings of anonymity and invisibility in the online environment and personality. Moreover, we hypothesized that feelings of disinhibition in the online realm would be strongly related to engaging in risky behaviors. We examined the relationship between our two measures and the HEXACO six-factor model of personality and three additional individual differences. Results indicated that lower Honesty-Humility, higher Emotionality, and higher stimulating risk-taking are predictors of both online disinhibition and risky online behaviors. Additionally, lower eXtraversion and lower Conscientiousness are predictors of online disinhibition, but not risky online behaviors. Implications for these findings are discussed.

**Keywords:** online disinhibition effect, risky online behaviors, personality, individual differences

Forming interpersonal relationships online can be associated with positive outcomes (e.g., finding a romantic partner); however, cyber-communities can also be a breeding ground for deviant behaviors, attitudes, and beliefs (Ducol, Bouchard, Davies, Ouellet, & Neudecker, 2016). In 2018, Canadians reportedly lost \$25 million to romance scammers (Johnson, 2019), and reports from 2014 indicate that 17% of youth (15–29 years) report being cyberbullied or cyberstalked within the past 5 years (Hango, 2016). The protection that anonymity affords individuals within the online context may account for some of these behaviors such that in cyberspace individuals may behave in ways they would not normally – such an effect has been termed the *online disinhibition effect* (Suler, 2004).

Suler (2004) was the first to conceptualize online disinhibition as being the outcome of six factors that come into play when people interact with others, or with information, on the Internet. First, *dissociative anonymity* refers to a perceived decrease in vulnerability associated with self-disclosure because one's online behavior cannot be tied back to them, thus, they do not have to be accountable for their actions. Second, *invisibility* allows for individuals to be physically invisible (e.g., non-verbal cues of self and others are unavailable) as well as to navigate online without anyone knowing they are doing so. Third, *asynchronicity* refers to delays in feedback (e.g., emails) which can increase disinhibition and reduce the timely social norm

feedback that occurs face-to-face. Fourth, *solipsistic introjection* is the assimilation and internalization of others' psychological presence or influence leading to feelings that the voice of others is felt as their own, encouraging disinhibition because it feels as if the individual is speaking to them. Fifth, *dissociative imagination* involves the creation of imaginary or alternative versions of oneself that only exist in the online space, thus increasing disinhibition to reduce feelings of responsibility for one's actions. Finally, the *minimization of status and authority* means that the fear of disapproval or punishment is minimized in the online space.

Research provides some support for the online disinhibition effect. For instance, early research suggests that individuals display more aggression when interacting anonymously on a computer versus face-to-face (Siegel, Dubrovsky, Kiesler, & McGuire, 1986). Moreover, comments on forums are more civil when anonymity is eliminated (Rowe, 2015; Santana, 2014; Zimmerman & Ybarra, 2016). Additionally, cyberbullying often leverages anonymity to amplify aggression and prevent identification (e.g., Aboujaoude, Savage, Starcevic, & Salame, 2015; Srivastava, 2012).

Moreover, research suggests that online behaviors that arise from feelings of disinhibition may, in part, be associated with people's personality and individual differences. For instance, research on social media use indicates that

high openness and agreeableness, and low conscientiousness and neuroticism are associated with forming strong online relationships and social networks (Huang, Cheng, Huang, & Teng, 2018). Similarly, social networking site usage motivated by a desire to socialize is positively related to openness and negatively related to conscientiousness (Hughes, Rowe, Batey, & Lee, 2012). Extraversion is considered to be the strongest predictor of social networking site use, and meta-analytic work implicates openness as a predictor (Liu & Campbell, 2017).

Apart from personality factors that appear to be associated with online behavior, other individual differences have also been implicated. Loneliness has been identified as an individual difference related to a reliance on online relationships compared to face-to-face relationships (e.g., Nowland, Necka, & Cacioppo, 2018). Nowland and colleagues (2018) propose a bidirectional model suggesting that when online relationships disrupt offline relationships, loneliness increases. However, when the Internet is used to facilitate the development of new relationships and strengthen existing relationships, loneliness can be reduced, assuming there is adequate online/offline social interaction overlap (Nowland et al., 2018). Similarly, increased social media use is associated with real-life social isolation (Whaite, Shensa, Sidani, Colditz, & Primack, 2018). Meta-analytic work indicates that individuals higher in social anxiety report greater levels of comfort associated with the internet as a communication tool (Prizant-Passal, Shechner, & Aderka, 2016). This relationship is explained in part by the diminished presence of non-verbal cues, feelings of anonymity, and reduced concerns surrounding the display of physiological indicators of anxiety (Prizant-Passal et al., 2016). Additionally, pathological Internet use (e.g., difficulty regulating time spent online and withdrawal-related symptoms when internet is not accessible) and social anxiety are positively related, perhaps as a result of individuals developing a reliance and preference for online as opposed to face-to-face interactions (Prizant-Passal et al., 2016). Finally, risk-taking behaviors or tendencies are associated with greater vulnerability to falling victim to social engineering tactics such as grooming (Whittle, Hamilton-Giachritsis, Beech, & Collings, 2013) and phishing (Moody, Galletta, & Dunn, 2017). Taken together, there are several individual differences that may contribute to online behaviors.

Although much research has examined the relationship between online behavior and personality, research remains limited in power and scope (Liu & Campbell, 2017), and findings in the literature are inconsistent or the magnitude of these relationships is weak (e.g., Chua & Chua, 2017; Hughes et al., 2012; Stanton, Ellickson-Larew, & Watson, 2016). Moreover, research aimed at measuring the online disinhibition effect and personality is limited. For instance,

research suggests that two dark personality traits (i.e., narcissism and sadism) positively predict online disinhibition in adolescents (Kurek, Jose, & Stuart, 2019). However, to our knowledge, there is only one valid measure to assess the online disinhibition effect (Udris, 2014), but, it focuses on toxic (e.g., exploring dark themes involving pornography and/or crime that individuals normally would not explore) versus benign (e.g., revealing personal information, helping others) disinhibition. By contrast, we were specifically interested in being able to understand and examine online disinhibition in terms of the six factors outlined in Suler's (2004) framework. It is worth noting, that we located one paper describing in-progress research on developing a measure, but we have not found peer-reviewed reports regarding its validation (Cheung, Wong, & Chan, 2016).

## Current Research

Our first goal was to develop a measure of online disinhibition by measuring the extent to which it predicts the frequency with which people engage in risky online behavior. Suler (2004) posited that when individuals feel disinhibited online, they experience a reduced sense of responsibility for their behaviors and fear surrounding disapproval or consequences. Hence, we expected that one way in which online disinhibition will affect online behaviors is by increasing one's willingness to engage in risky behaviors. We also assessed the relationship between online disinhibition and personality factors that may be associated with it. Although most research uses the five-factor model of personality, in an effort to expand upon the current literature, we employed the six-factor model. More specifically, we use Honesty-Humility to examine how darker traits might influence online behaviors, leveraging recent findings indicating a near-perfect correlation between the Dark Triad traits and Honesty-Humility (Hodson et al., 2018). Although research indicates a relationship between some of the big-five traits and forming social relationships online and social networks (e.g., Huang et al., 2018; Hughes et al., 2012; Liu & Campbell, 2017), to our knowledge research does not exist on how the traits relate to feelings of disinhibition when one is online. Our initial hypothesis was that online disinhibition would be related primarily to two traits: Honesty-Humility and Conscientiousness, however, we outline our predictions for all six traits.

### Honesty-Humility

Aligned with the results reported by Kurek et al. (2019) on dark personality traits, we expected to find people with low Honesty-Humility to score highly on our measures of online disinhibition and risky online behaviors.

### Emotionality

We predicted a positive relationship between Emotionality and online disinhibition; however, we expected a negative relationship between Emotionality and risky online behaviors, given individuals higher on this trait typically experience higher levels of fearfulness (Lee & Ashton, 2004).

### eXtraversion

While extraverts are reported to seek out social engagement online (e.g., Gosling, Augustine, Vazire, Holtzman, & Gaddis, 2011), we expected to observe introverts exhibiting heightened online disinhibition (cf. Shatz, 2005). Specifically, introverted people may feel disinhibited online where interactions are devoid of body language and facial cues that may provide feedback about how well, or badly, a social interaction is progressing.

### Agreeableness

Low Agreeableness is associated with experiencing social challenges when interacting with others because individuals low on the trait tend to be argumentative, unforgiving, and judgmental (Lee & Ashton, 2004). Again, in the absence of non-verbal cues that shape how people behave when interacting face-to-face, low scorers, who already have a predilection to engage in interactions that may be adversarial in nature, may feel an enhanced sense of disinhibition in the online space, but it was less clear how the trait could relate to risky online behavior.

### Conscientiousness

Persons low in Conscientiousness tend to make impulsive decisions, take a haphazard approach to tasks, and pay less attention to detail compared to high scorers (Lee & Ashton, 2004) – qualities consistent with disinhibited and risky behavior. We therefore hypothesized that people low in Conscientiousness would experience both higher online disinhibition and risky online behavior.

### Openness

We did not have a hypothesis with respect to the relationship between Openness and online disinhibition or risky online behavior. Given the nature of Openness as being related to one's appreciation for art and nature (Lee & Ashton, 2004), it was not obvious to us how it might be related to either dependent variable.

### Other Individual Differences

First, we expected loneliness to relate to online disinhibition. Higher amounts of social media use have been linked to greater feelings of real-life isolation (Whaite et al., 2018). When interacting with others on social media, people who feel lonely in the “real world” may be freed from factors contributing to those feelings, such as, self-consciousness that hinder the formation of in-person relationships.

Interacting with others on social media, might contribute to a reduction of behavioral inhibition that they may experience in their day-to-day interactions. This pattern would appear in the data as a positive relationship between loneliness and online disinhibition. We also expected social anxiety to be related to online disinhibition. Social anxiety in “real world” relationships is linked to an elevated level of comfort interacting with others in online fora and the associated feelings of anonymity that they engender (Prizant-Passal et al., 2016) – feelings that are a hallmark feature of online disinhibition. Finally, we expected risk-taking to be related to our measure of risky online behaviors. Specifically, while online disinhibition is hypothesized to be associated with risky online behavior, individuals who possess a general tendency to engage in risky behaviors offline should also be willing to engage in risky behaviors in the online environment (e.g., Whittle et al., 2013).

## Method

### Participants

Participants were a sample ( $N = 213$ ) of Canadian and American adults. Participants were eligible to participate if they were over the age of 18 years and fluent in English. Participants had a mean age of 49.71 years ( $SD = 15.60$ ) (Table 1). Informed consent was obtained by all participants and the research was approved by Defence Research and Development Canada's Human Research Ethics Committee.

### Measures

#### Online Disinhibition

We developed a short 20-item measure to assess Suler's (2004) online disinhibition effect and included items to assess its six factors. Additionally, we included a seventh factor that assesses endorsing beliefs or feelings that relationship formation happens rapidly online (see Electronic Supplemental Material, ESM 1, for the full scale). The measure uses a 5-point rating scale, ranging from 1 (= *strongly disagree*) to 5 (= *strongly agree*). The scale indicated good internal consistency (Cronbach's  $\alpha = .91$ ).

#### Risky Online Behaviors

We developed a 22-item measure to assess the frequency with which individuals engage in risky online behaviors such as divulging private information, meeting up in person with people that they have met online, and, falling victim to social engineering tactics (see ESM 1 for full scale). The measure employed a 5-point rating scale ranging from 0 (= *never*) to 4 (= *more than 5 times*).

**Table 1.** Participant demographic information ( $N = 213$ )

Variable	% of sample
Gender	
Male	35.7
Female	64.3
Educational attainment	
Less than post-secondary	28.6
Post-secondary	71.4
Employment status	
Full-time	31.5
Part-time	14.6
Unemployed	52.1
Student	1.9

The measure indicated good internal consistency (Cronbach's  $\alpha = .89$ ).

### HEXACO

To assess the six-factor model of personality, we used the 100-item HEXACO Personality Inventory – Revised (HEXACO-PI-R; Ashton & Lee, 2008; Lee & Ashton, 2004, 2006) which assesses Honesty-Humility, Emotionality, eXtraversion, Agreeableness, Conscientiousness, and Openness. The subscales indicated adequate internal consistency (Cronbach's  $\alpha = .80-.86$ ).

### UCLA Loneliness Scale

The UCLA Loneliness Scale (Russell, 1996), a 20-item measure, assesses how often individuals experience situations or feelings associated with loneliness. The scale demonstrated good internal consistency (Cronbach's  $\alpha = .93$ ).

### Liebowitz Social Anxiety Scale

The Liebowitz Social Anxiety Scale (Heimberg et al., 1999) is a 24-item measure and was used to measure social phobia. Respondents are asked to complete the measure twice, once to indicate the extent to which each item is associated with fear or anxiety and once to indicate the extent to which they avoid situations pertaining to each item. Two subscales are calculated for each assessment: performance and social interaction. Due to missing data, we only report on the results associated with anxiety or fear. Additionally, because the two subscales were so highly correlated ( $r = .92$ ), we calculated and reported on one mean score for social anxiety. The scale indicated good internal consistency (Cronbach's  $\alpha = .96$ ).

### Stimulating Instrumental Risk Inventory

The 17-item Stimulating Instrumental Risk Inventory (Zaleskiewicz, 2001) was included to assess risk-taking propensity. The scale measures stimulating (e.g., impulsive decision-making, sensation seeking motive) as well as

instrumental (e.g., reflective decision-making, analysis of outcomes) risk-taking. Internal consistency was low and adequate for the Stimulating and Instrumental Risk-Taking subscales, respectively (Cronbach's  $\alpha = .67$  and  $.79$ ).

## Procedure

The study was conducted online using the survey platform Qualtrics (Provo, UT, USA) and participants were recruited using Online Panels – a service Qualtrics offers to assist with data collection. Participants were randomly assigned to first complete the HEXACO followed by the Online Disinhibition and Risky Online Behaviors measures, or vice versa (i.e., the HEXACO was presented second). All participants then completed the UCLA Loneliness Scale, the Liebowitz Social Anxiety Scale, and the Stimulating Instrumental Risk Inventory presented in a randomized order.

## Results

Our descriptive statistics are reported in Table 2. We first conducted bivariate correlation analyses to assess the extent to which online disinhibition relates to risky online behavior. Additionally, we measured how correlated our measures were to the six-factor model of personality, loneliness, social anxiety, and risk-taking (see Table 2). As expected, online disinhibition was positively related to risky online behaviors. Additionally, as expected, it was negatively associated with Honesty-Humility, eXtraversion, Agreeableness, and Conscientiousness. Contrary to our predictions, online disinhibition was not significantly correlated to Emotionality but had a significant, albeit weak, negative correlation with Openness. As expected, online disinhibition was positively correlated with loneliness, social anxiety, and risk-taking. Our risky online behaviors measure was negatively related to three of the HEXACO factors (Honesty-Humility, Agreeableness, and Conscientiousness) and positively related to Emotionality (contrary to our prediction). Finally, our measure of risky online behaviors was significantly and positively related to both social anxiety and risk-taking.

Next, we conducted two multiple regression analyses. In the first analysis, we entered the six HEXACO factors, loneliness, social anxiety, and the two subscales of risk-taking as predictors and online disinhibition as the criterion. The linear combination was significant,  $R^2 = .459$ ,  $F(10, 201) = 17.02$ ,  $p < .001$ . Respondents with lower Honesty-Humility,  $\beta = -.45$ ,  $t(201) = -6.72$ ,  $p < .001$ , higher Emotionality,  $\beta = .15$ ,  $t(201) = 2.34$ ,  $p = 0.021$ , lower eXtraversion,  $\beta = -.18$ ,  $t(201) = -2.08$ ,  $p = .039$ , and lower Conscientiousness,  $\beta = -.16$ ,  $t(201) = -2.40$ ,  $p = .017$ ,

**Table 2.** Correlation analysis of study measures ( $N = 212$ )

	<i>M (SD)</i>	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
1. OD	2.24 (0.66)											
2. ROB	0.52 (0.55)	.57**										
3. Honesty-Humility	3.69 (0.55)	-.59**	-.40**									
4. Emotionality	3.27 (0.53)	.11	.16*	.11								
5. Extraversion	3.12 (0.61)	-.34**	-.09	.22**	-.25**							
6. Agreeableness	3.00 (0.51)	-.23*	-.21**	.26**	-.27**	.45**						
7. Conscientiousness	3.57 (0.50)	-.47**	-.26**	.44**	-.08	.46**	.36**					
8. Openness	3.34 (0.57)	-.18*	-.08	.20**	.07	.20**	.15*	.31**				
9. Loneliness	2.36 (0.57)	.33**	.13	-.38**	.07	-.66**	-.32**	-.32**	-.09			
10. Social Anxiety	1.06 (0.72)	.29**	.24**	-.20**	.38**	-.50**	-.11	-.28**	-.15*	.45**		
11. Risk-Taking (S)	1.94 (0.46)	.36**	.34**	-.39**	-.16*	-.01	-.05	-.30**	-.13	.05	.09	
12. Risk-Taking (I)	2.31 (0.61)	.15*	.22**	-.22**	-.11	.19**	-.04	.05	-.15*	.02	-.01	.39**

Note. OD = Online Disinhibition; ROB = Risky Online Behaviors; measures 3–8 are the HEXACO subscales; Risk-Taking (S) = Stimulating Risk-Taking subscale; Risk-Taking (I) = Instrumental Risk-Taking subscale. \* $p < .05$ ; \*\* $p < .01$ .

tended to report higher online disinhibition. Agreeableness and Openness were not significantly related, neither were loneliness, social anxiety, and instrumental risk-taking. However, higher stimulating risk-taking was related to online disinhibition,  $\beta = .14$ ,  $t(201) = 2.17$ ,  $p = 0.031$ .

In the second analysis, we entered the six HEXACO factors, loneliness, social anxiety, and the two subscales of risk-taking as predictors and risky online behaviors as the criterion. The linear combination was significant,  $R^2 = .280$ ,  $F(10, 201) = 7.82$ ,  $p < .001$ . Respondents with lower Honesty-Humility,  $\beta = -.28$ ,  $t(201) = -3.66$ ,  $p < 0.001$ , and higher Emotionality,  $\beta = .17$ ,  $t(201) = 2.34$ ,  $p = .020$ , tended to report higher risky online behaviors. The remaining four factors of the HEXACO (eXtraversion, Agreeableness, Conscientiousness, and Openness) were unrelated. Loneliness, social anxiety, and instrumental risk-taking were also unrelated, however, higher stimulating risk-taking was related to risky online behaviors,  $\beta = .20$ ,  $t(201) = 2.68$ ,  $p = .008$ .

## Discussion

The current research provides support for the notion that there are personality factors that relate to feelings of online disinhibition. Our findings also suggest a subset of the traits also predict engagement in risky online behaviors. We found support for most of the hypotheses regarding the HEXACO's relationship with online disinhibition. We did not expect Openness to be related to online disinhibition; however, the negative relationship, albeit somewhat weak, was significant. Also as expected, our measure of risky online behaviors was significantly associated with higher Emotionality, and lower values of Honesty-Humility, Agreeableness, and Conscientiousness. Our findings

implicate Honesty-Humility as a predictor of both online disinhibition and risky online behaviors. Individuals lower on Honesty-Humility are considered to be insincere and manipulative in their social interactions, willing to take advantage of others for their own personal gain (even by cheating or stealing), and consider themselves to be superior to others (Lee & Ashton, 2004). Those with low Honesty-Humility, like the Dark Triad traits (Hodson et al., 2018), are predisposed to behave in a fashion that disregards the feelings and needs of those with whom they interact – behaviors that, our results suggest, may extend to the online context. With this pattern in mind, it may be useful for future research to examine if these individuals are more susceptible to feelings of toxic, as opposed to benign, disinhibition.

Persons with high Emotionality had a heightened tendency toward both online disinhibition and risky online behaviors. They also tended to be more socially anxious. We suspect that the need for the emotional support of others that typifies persons high on Emotionality (Lee & Ashton, 2004) promotes feelings of disinhibition and risky online behaviors whereby they may choose to obtain it from strangers. Further, the physical separation between parties and/or the lack of visual cues may help create a feeling of safety that encourages them to reach out to others online, which may be less anxiety-provoking than face-to-face interactions (e.g., Prizant-Passal et al., 2016).

Both lower eXtraversion and Conscientiousness predicted online disinhibition, but interestingly, neither predicted risky online behaviors. Similarly, our correlational analyses indicated a negative relationship between loneliness and online disinhibition, but not risky online behaviors. That is, while individuals who are introverted, lonely and/or tend to act impulsively feel greater online disinhibition, they are not necessarily prone to engage in

risky behaviors. However, Conscientiousness was negatively related to dispositional risk-taking, which was a significant predictor of risky online behaviors, which may suggest that personality factors drive one's feelings of disinhibition when online, but it may be that sensation-seeking is related to the decision to act on them.

Although Agreeableness did not emerge as a significant predictor in our regression, its correlation with both online disinhibition and risky online behaviors was significant. An examination of the pattern of correlations in Table 2 may shed some light as to why. Our participants with low Agreeableness also tended to be lonely and/or introverted (eXtraversion was a significant predictor). The results are consistent with the notion that the unforgiving, judgmental nature of people with low Agreeableness impedes their ability to interact effectively with others in their day-to-day dealings, which may enhance their loneliness. That the Agreeableness trait did not emerge as a significant predictor then, is likely due in part to the fact that, at least in our sample, it shares variance with the somewhat stronger predictor, eXtraversion. Finally, although Openness was negatively correlated to online disinhibition, the relationship was weak, and it was not a significant predictor in our regression models, suggesting it may not be the primary predictor of online disinhibition or risky online behaviors.

## Limitations and Future Directions

Our study provides insight into the different personality traits and individual differences that predict and relate to online disinhibition and risky online behaviors; however, it is not without its limitations. First, our study is correlational and cross-sectional in nature, thus we cannot speak to causality. Future research should employ experimental or longitudinal designs to assess the relationship between personality and online behaviors. Second, although we were able to compare our measure of risky online behaviors to an established measure of risk-taking, our newly created measures would benefit from future further validation. Third, we had participants report on risky online behaviors they have engaged in; however, future research should use experimental methods to explore how personality predicts online behavior. Although, we understand that common method variance can be an issue when similar instruments are used to measure multiple factors, our reliance on self-report measures was appropriate given the private and personal nature of the constructs we measured (e.g., Conway & Lance, 2010). Fourth, we had a restricted range of scores in our risky online behaviors measure suggesting future validation work of the scale should include or identify participants suspected to belong to groups who may have an enhanced likelihood of engaging in risky online behaviors. Finally, as a consequence of our

recruitment method, a large proportion of our sample was unemployed. Future research on the topic should employ more sophisticated sampling methods to improve the representativeness of community samples.

## Conclusions

Our results may shed some light on some of the factors at play to make internet users, especially people who frequently meet and interact with new people online, vulnerable to the nefarious influence of those who attain emotional or financial reward from grooming and exploiting others. Our correlations, suggest a profile in which those who are dishonest, immodest, lonely, in need of the support of others, prone to carelessness, thrill-seekers, and socially anxious might benefit from early interventions to explain the nature of online interactions and the consequences of engaging in risky behavior. In a complementary fashion, the results may inform future work to examine the psychological and personality make-up of those who may be willing to actively engage in influencing others. Specifically, the dishonest, manipulative, selfish, and conceited nature of persons with low Honesty-Humility, coupled with a tendency for thrill-seeking, may portray the profile of someone willing to leverage their online disinhibition to satisfy their own selfish needs. Taken together, our results represent a system of factors to explain harmful online behaviors that may, in most circumstances, be unlikely in face-to-face interactions.

## Electronic Supplementary Material

The electronic supplementary material is available with the online version of the article at <https://doi.org/10.1027/1614-0001/a000321>

**ESM 1.** The file contains the full scales of the online disinhibition measure and the risky online behaviors measure.

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