# Trait Disinhibition and Narcissism as Predictors of Perception of Online Violence

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**Abstract:**

Online disinhibition effect designates phenomena where people in general exhibit less controlled behavior in online, than in similar offline situations, which may include toxic behavior such as verbal bullying, hiding identity online, exposing privacy of other people in a humiliating manner, and creating fake accounts, or benign behavior, which may include displaying unusual kindness and generosity. While there are several explanations of this phenomenon, most of which deal with various aspects of deindividuation and anonymity, there is no explanation of individual differences in exhibiting disinhibited behavior online. Present study focuses on determining whether trait disinhibition and narcissism could lead to disinhibited behavior online, by influencing perception of online violent behavior. The results supported our model showing significant effects of trait disinhibition on perception of online violence, making online violent acts seem less violent, which could facilitate manifestation of disinhibited behavior online. No significant effects of narcissism as mediator were found, except a clear pattern of moderator effects of gender on perception of online violence, suggesting that different dispositional mechanisms may reflect the difference in processing of online violent behavior between men and women.

**Key words**: online disinhibition effect, trait disinhibition, narcissism, perception of online violence

## 1. Introduction

Since the beginning of research on behavior on the Internet in the 1990's, there has been an overall, well documented recognition that people generally exhibit less controlled behavior in online than in similar offline situations. Usually, this behavior includes teasing, spreading rumors, humiliating, disclosing secrets, often called by the common term "cyber verbal bullying" (Çetin et al., 2011), but also hiding identity online (Belsey, 2007; Slonje & Smith, 2008), as well as publication of private pictures, broadcasting videos about people in a humiliating manner, and creating fake accounts (Shariff, 2008).When addressing such behavior in the past, researchers usually used the term "flaming" (McKenna & Bargh, 2000), or "trolling" (Donath, 1998), but today this general difference between online and offline behavior is termed as "online disinhibition effect" (Joinson, 2001).

Suler (2004), who coined the term, defines online disinhibition effect as intensive acts of self-disclosure or acting-out behavior, which can be divided in two parts: benign and toxic disinhibition. Benign disinhibition is characterized by sharing personal emotions and desires, as well as displaying unusual kindness and generosity, while toxic disinhibition, refers to all manifestations of cyber verbal bullying, as well as all aspects of so-called "dark side of the Internet": pornography, crime, drugs, and hate-groups. Nevertheless, whether benign or toxic inhibition, the mechanism behind both is the same – lack of personally and socially induced constraints in online communication and behavior, which are usually present in face-to-face communication and social behavior (Joinson, 1998).

### 1.1. Nature of online disinhibition effect

There exists a large number of possible explanations, two of which are widely used to explain this behavior. First is the concept of deindividuation, where self-awareness of the person is reduced on the internet not by usual means of deindividuation (e.g. wearing masks, darkness, uniforms etc.) but by the anonymous nature of computer mediated communication (CMC) (McKenna & Bargh, 2000).

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Second is so-called social identity model of deindividuation phenomena (SIDE), which was built upon critique of deindividuation explanation of online disinhibition effect (Postmes et al., 1998), stating that people exhibit disinhibited behavior in CMC not because they lose their own identity, but rather because they replace individual identity with a group identity (Reicher et al., 1995). Thus, according to the SIDE model, "traditional" causes of deindividuation (e.g. anonymity and lack of cues) are actually reinforcing group salience and making people conform to the group norms more (Postmes et al., 1998).

Since both models failed to give a comprehensive explanation of online disinhibition effect (Lea et al, 1992; Joinson, 2001), several alternative explanations were brought to attention, including intensified feedback loop, or phenomena that higher levels of self-disclosure by each communicator creates a loop of ever rising self-disclosure due to increase in feelings of comfort and obligation to disclose personal information (Walther, 1997), selective self-presentation where disinhibited behavior online is seen as a form of impression management and facilitation of wanted relationships (Walter, 2007), psychoanalytic concepts as dissociative anonymity and solipsistic introjection (Suler, 2004), or recently developed privacy-based approach which includes trust, control and cost/benefit calculations as critical determinants of online disinhibition effect (Joinson & Paine, 2010). Salla Koivu (2015) in his master's thesis summarized all of the above mentioned explanations into three distinctive categories: 1) feelings of alienation and differentiation from real-life identity; 2) more selective and intimate wordings prompted by the lack of cues, asynchronicity of text-based computer-mediated communications; and 3) different behavioral models and moral standards of the Internet culture.

Nevertheless, all of these explanations rely simply on aspects of Internet media and their psychological impact, and cannot fully explain effect of online disinhibition (Joinson, 2001). For instance, there is no explanation of individual differences in exhibiting disinhibited behavior online, meaning why some people more easily engage in disinhibited behavior online, than others do. Present study focuses on determining those factors.

Also, in the present study we will try to provide more precise definition of online disinhibition effect, which is based on perception rather than on behavior, since people manifest disinhibited behavior on the Internet because situational factors (e.g. asynchronicity, anonymity etc.) in the first place affect individuals' perception so that they judge their behavior as less violent than it actually is, which consequently leads to exhibiting less self-control in their behavior (Valkenburg & Peter, 2011; Đuraković et al., 2014). Also, Joinson (2004) pointed out that current behavior-based definitions of online disinhibition effect are vague, in so that behavior that at first looks like product of disinhibition effect can actually be a well calculated strategic choice of the individual.

## 1.2. Disinhibition as a personality trait

The personality trait of disinhibition reflects the tendency to behave in an unconstrained versus constrained manner, and is usually included within the Big-Three conceptualization of personality structure (Watson & Clark, 1993). Behavior of individuals who score high on measures of disinhibition is driven by immediate stimuli under specific momentary environmental characteristics, rather than by anticipation and perception of long-term consequences of their behavior, and is usually associated with externalizing psychopathology and risk-taking behaviors (McGlue et al., 1997; Sher & Trull, 1994; Miller & Lynam, 2003).

Although there is a general agreement regarding the nature of higher order personality traits, there is currently no agreement on the structure and conceptualization of lower order components of which these higher order factors are comprised. (e.g. Clark, 1993; Clark & Watson, 1999; Whiteside & Lynam, 2001). As we stated earlier, the Big-Three factor of disinhibition versus constraint, represents a combination of low conscientiousness and agreeableness (Clark & Watson, 1999), meaning behavior resulting from weak social inhibition. Nevertheless, there is little agreement on what comprises social (dis)inhibition. For example, Clark (1993) identified three specific traits of impulsivity, propriety and workaholism, that are strongly related to the higher order factor of disinhibition, while later developed Disinhibition scale yielded a two-factor solution (Clark & Watson, 1999). Ultimately, Whiteside and Lynam (2001) empirically tested their UPPS model of disinhibition, which includes four factors in the structure of disinhibition – urgency, premeditation, perseverance and sensation seeking.

Summarizing the empirical findings on the structure of disinhibition, Dindo et al. (2009) stated several generalizations, which served as a basis for their Disinhibition Inventory (DIS-I): 1) since disinhibition is clearly related to the Big Five traits of agreeableness and conscientiousness, this distinguishes it from the similar construct of impulsivity which is related to extraversion and neuroticism; 2) there is no general agreement about the exact number and nature of lower order components which comprise disinhibition, although several are consistently linked to disinhibition as a broad domain (e.g. risk taking, aggression etc.); 3) trait disinhibition is composed of diverse and relative distinct content areas; and 4) although trait disinhibition is broad in scope, it clearly has predictive validity in relation to psychopathology and risky behavior.

The development and validation of DIS-I resulted in broad multifaceted model of disinhibition, with five content-distinct, yet correlated factors: high manipulativeness, distractibility, risk taking, and low orderliness and prosociality, which consists of two sub-factors – considerateness and goal orientation, which we adopted in our study.

### 1.3. Proposition of the online disinhibition model

Although, as we stated earlier, mere situational factors like anonymity can influence the perception of one's behavior (Valkenburg & Peter, 2011; Đuraković et al., 2014), we reason that in order to explain the variation in disinhibited behavior on the Internet in more comprehensive way, we need to examine existence of possible dispositional factors underlying difference in perception of online violence, which may reflect individual differences in disinhibited online behavior.

As a starting point we proposed trait disinhibition, especially two factors – prosociality and manipulativeness – as predictors of perception of online violence. According to the proposed model, we expect to find significant negative relations between manipulativeness and perception of online violence, meaning people who score high on manipulativeness tend to perceive acts of online violence as less violent and hostile, and thus be more disposed to act in a disinhibited way online. On the other hand, prosociality as a measure of inhibited behavior, contains two content-specific sub-factors, one related to achievement striving (goal orientation) and one related to kindness towards others (considerateness). We expect only considerateness to be significantly positively related to perception of online violence, meaning people who show more tendency to act with kindness towards others will also tend to perceive the acts of online violence as more violent, and consequently be less inclined to act in disinhibited way online. Thus, we propose a model of a two-factor system influencing perception of online violence on a dispositional level, one facilitating perception of online violence (sensitization), and one inhibiting it (habituation).

Many contemporary studies show a dramatic increase in narcissistic personality tendencies, especially in the young generation (Rosen, 2010), some stating as much as 1 in 4 adolescents satisfying main criteria for narcissistic personality (Twenge & Campbell, 2008). Also, there is a significant connection between narcissistic personality tendencies and internet usage, especially social networking services like Facebook or Twitter, where they often exhibit disinhibited behavior (Buffardi & Campbell, 2008; Ryan & Xenos, 2011). Because of the afore mentioned, we will include narcissistic personality tendencies in our model, where we expect to find significant negative relations between narcissistic personality tendencies and perception of online violence. Notwithstanding, since we detected similarities in operational definitions of narcissistic personality tendencies and manipulativeness as a disinhibition factor (Raskin & Terry, 1988), and considering the evident rise in narcissistic tendencies in young population in recent years, as well as rise in online violent behavior, we can also assume narcissism to be mediator between manipulativeness and perception of online violence (Rosen, 2010).

Finally, there has been much evidence suggesting existence of both age and gender differences in experiencing and committing acts of online violence (Çetin et al., 2011), as well as in general online activity patterns (Sasson & Mesch, 2016) and engagement in risky online behavior (Notten & Nikken, 2014). However, results of these research, especially considering gender differences in online behavior, are mostly inconclusive. For example, while some researchers claimed that females engage in online violence more than males because cyber bullying is considered a relational type of violence, which is more characteristic for women (Keith & Martin, 2005), others showed males more engaging in online violence than females (Đuraković et al., 2014; Baldry et al., 2016).Regarding age, researches generally agree that young people, especially adolescents, use internet and exhibit violent online behavior more frequently than older people (Jhala & Sharma, 2016; Juvonen & Gross, 2008).

Since age and gender differences were also documented regarding narcissism and disinhibition (Ames et al., 2006; Dindo et al., 2009), we expect results of current study reflect those differences also in perception of online violence and shed more light on the nature of those differences.

## 2. Method

### 2.1. Participants and materials

An online sample of 343 participants (174 males and 169 females) age range from 18 to 55 ($M_{age}$ = 22.41; sd = 3.12) completed a set of online questionnaires which were translated into the Croatian language using double-blind procedure. Answers were recorded using LimeSurvey software. Psychology students helped in recruitment of participants in exchange for course records.

## 2.2. Measures

Perception of online violence was measured using items from Cyber victim and bullying scale (Çetin et al., 2011), a reliable and valid scale which determines cyber victimization and bullying behaviors. It contains 22 items that measure cyber verbal bullying (7 items), hiding identity (5 items), and cyber forgery (10 items). For the purpose of current study, the instruction given to participants was adapted so that the scale items were used to measure to what extent participants considered specific online behavior as unpleasant and hostile. Items were answered using 5-point Likert-type scale (1 – not at all unpleasant, 5 – very unpleasant).

Trait disinhibition was measured using two subscales from Disinhibition inventory (DIS-I) (Dindo et al., 2009), first one measuring manipulativeness (16 items), and the second measuring prosociality (16 items). The answer format was 5-point Likert-type scale (1 – completely disagree, 5 – completely agree).

Narcissistic personality tendencies were measured using short 16-item version of Narcissistic personality inventory (NPI-16) (Ames et al., 2006). In original version items were dichotomous, so the answer format was binary choice between two extreme alternatives, one of them indicating narcissistic tendency. In order to enhance discriminant validity of the scale, and prevent possible socially desirable answering, 6-point Likert-type scale was used as answer format, each end pointing to a different extreme.

All questionnaires and scales, except DIS-I, were previously validated and used in Croatian language (e.g. Đuraković et al., 2014).

## 2.3. Analytic plan

Since most of the scales used were adapted for this study, and one of them was used for the first time in Croatian language, a principal component analysis (PCA) with varimax rotation was initially carried out on the data to calculate the factor structure, followed by confirmatory factor analysis (CFA) which was carried out to determine if the model fit the item-factor structures obtained from the PCA.

We tested several structural models of relations between disinhibition factors and narcissistic personality indicators, and perception of online violence using correlation matrices with maximum likelihood (ML) estimates method. In analyses comparing several alternative non-nested models, we used Akaike information criterion (AIC) where the model that better fits the observed data has lower value of the AIC (Akaike, 1987).

In order to test moderation effects of age and gender we conducted multi-group model comparison of the relative fits of constrained and unconstrained models with chi-square difference test of structural models for age and gender (Kline, 1998), where the significant chi-square difference test indicates existence of significant moderation effects. Difference between specific paths in multi-group model comparison was done by difference in slopes t-test (Clogg et al., 1995).

Both age and gender were introduced in the analysis as dummy variables (e.g. male = 0 and female = 1). Cutoff point for age was 21 years, as this is the generally accepted age when most of people enter adulthood (everyone below 21 were designated as "young").

## 3. Results

Before examining the proposed structural model, we explored factor structure of each of the scales through exploratory and confirmatory factor analyses. Detailed descriptive statistics, specific tables of PCA factor loadings for each of the scales, their Cronbach alpha coefficients, correlations between the scales, as well as CFA models can be obtained from the author upon request.

Table 1 displays adequate goodness of fit indices for all measures in the study. We tested only the models of the measures from their validity papers, with several within-factor modifications. Cronbach alpha coefficients were in the range of .81 to .94.

We further tested three theory-driven models: 1) manipulativeness and considerateness as predictors of perception of online violence (Model 1), 2) Model 1, adding narcissistic personality tendencies as predictor (Model 2), and 3) Model 2 with narcissistic personality tendencies as mediator variable (Model 3).

Table 1: Goodness of fit indices for theory-driven models of relations between personality factors and perception of online violence.

| Measures/models | χ² (df) | CN | GFI | NFI | CFI | RMSEA | AIC |
|---|---|---|---|---|---|---|---|
| Perception of online violence (Çetin et al., 2011) | 268.41** (110) | 2.44 | .92 | .93 | .95 | .065 | - |
| Trait disinhibition (Dindo et al., 2009) | 449.75** (241) | 1.87 | .90 | .87 | .94 | .050 | - |
| Narcissism (Ames et al., 2006) | 123.66** (70) | 1.77 | .95 | .90 | .95 | .047 | - |
| Model 1 (disinhibition only) | 1122.23** (541) | 2.07 | .85 | .83 | .90 | .056 | 1300.23 |
| Model 2 (disinhibition + narcissistic personality) | 8967.50** (5480) | 1.64 | .75 | .68 | .85 | .025 | 10257.50 |
| Model 3 (narcissistic personality as mediator) | 8981.48** (5485) | 1.64 | .75 | .69 | .85 | .025 | 10261.48 |

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

Table 1 displays goodness of fit indices for all of the above listed models. Considering the values of goodness of fit indices, we could state than only Model 1 yielded an acceptable fit (with GFI and NFI bordering marginal values), while the remaining models including narcissistic personality tendencies both as a predictor and mediator variable, with most fit indexes' values below criteria, didn't yield an acceptable fit. According to the above results of model testing, continued by an exploratory approach to model characteristics, we can state that narcissistic personality tendencies don't contribute significantly to the explanation of perception of online violence, neither as predictor nor as mediator variable.
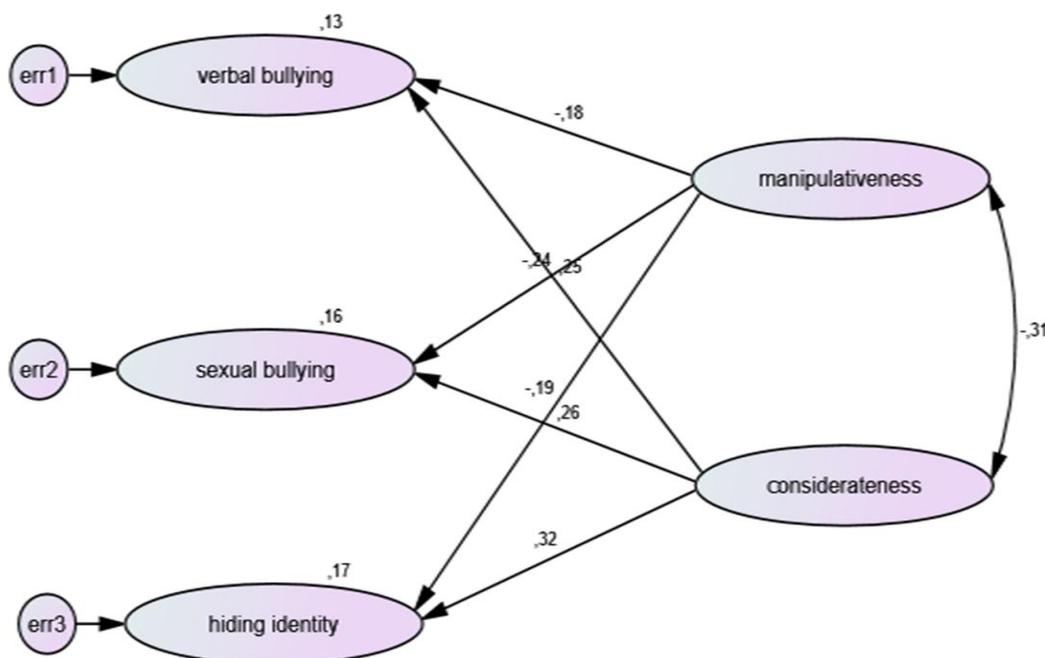


Figure 1: Structural equation model for Model 1 (trait dissinhibition only)

According to the results obtained from general Model 1 (Fig. 1) there is significant effect of manipulativeness and considerateness as disinhibition factors on all aspects of perception of online violence. Although statistically significant ($p < .01$), regression weights obtained by the model are low, ranging between .17 and .32, explaining not more than 17% of variance of criteria.

Results of multi-group model comparison showed that there is significant difference between men and women ($\chi^2 = 8.50$, df = 6, $p < .05$), but not between young and adult participants ($\chi^2 = 3.60$, df = 6, $p > .05$). Results of difference in slopes t-test for each of the specific paths in structural model can be found in Table 2.

Table 2: Results of difference in slopes t-test for each of the specific paths in structural model (Model 1)

| group | predictors | criteria | regression weights (standardized) | | t-test | sig. |
|---|---|---|---|---|---|---|
| | | | group 1 (male, young) | group 2 (female, adult) | | |
| gender | manipulativeness | **verbal** | **-.07** | **-.30\*\*** | **2.290** | **.023** |
| | | sexual | -.18* | -.30** | 1.362 | .174 |
| | | **identity** | **-.07** | **-.33\*\*** | **2.223** | **.027** |
| | considerateness | verbal | .27* | .11 | 1.201 | .230 |
| | | sexual | .25* | .16 | 1.036 | .301 |
| | | **identity** | **.38\*\*** | **.17** | **2.258** | **.025** |
| age | manipulativeness | verbal | -.18* | -.18 | .016 | .987 |
| | | sexual | -.25** | -.24* | .281 | .771 |
| | | identity | -.21** | -.14 | .653 | .514 |
| | considerateness | verbal | .30** | .18 | 1.044 | .297 |
| | | sexual | .27** | .22* | .304 | .761 |
| | | identity | .26** | .40** | .633 | .527 |

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

Although the analysis showed clear moderation effect of gender on relation between trait disinhibition and perception of online violence, where in the male group only considerateness was significantly related with all criteria, and in the female group only manipulativeness, this effect was only bordering significant in relations between manipulativeness and perception of verbal (t = 1.925, p = .055) and sexual cyber bullying (t = 1.952, p = .052), and considerateness and identity hiding (t = 1.956, p = .051), with the rest being non-significant.

**4. Discussion and conclusion**

We had two goals of this study. First, and major aim of the study was to test a theory-driven model of relations between trait disinhibition and perception of online violence, which could explain why certain people more easily and more frequently engage in disinhibited behavior in conditions on the Internet, which facilitate such behavior.

The results obtained from testing structural models supported the theory-driven model showing significant effects of trait disinhibition on perception of online violence, where disinhibition – specifically manipulativeness and (non)considerateness – may have a facilitating role in manifestation of disinhibited behavior online, by affecting individuals' perception of online violence, making online violent acts seem less violent. Although the effects are significant, regression weights are considerably low, in the overall model not exceeding .30 and not accounting for more than 20% of variance of criteria, which was expected according to most research relating personality and behavior (Kenrick & Funder, 1991). Still, as Funder (2001) stated that these weights and correlations although low, they actually allow prediction up to 70% of variance of criteria, taking into consideration effect sizes.

Still, more comprehensive model of online disinhibition effect, relating perception of online violence with disinhibited behavior in conditions of online environment is yet to be developed. It may be shown that the online disinhibition effect is mostly the result of specific situational conditions existing in the online environment which facilitate disinhibited behavior. Besides that, correlations between factors of perception of online violence (both in the original paper, as well as in our research were between .50 and .70), which in our model represent latent endogenous variables,

Indicate possibility of existing exogenous latent variables which were not included in the model, although Çetin et al. (2011) state that it may be due to lack of discriminant validity between different measures of online violence. Nevertheless, proposed disinhibition model offers plausible insight into why certain people are more inclined to engage in disinhibited behavior online.

The second aim of the study was to investigate whether narcissistic personality tendencies could mediate and age and gender moderate these relations between trait disinhibition and perception of online violence.

The results showed no significant effects of narcissism as mediator, as well as age and gender as moderator variables on perception of online violence. Nevertheless, there is a clear pattern of moderator effects of gender on perception of online violence, where in the group of male participants only considerateness was significantly related with all criteria, while in the female group only manipulativeness showed this effect, suggesting that these effects may be significant on different, more valid operationalizations of the measures used in the study. Notwithstanding these assumptions, results suggest that different dispositional mechanisms may reflect the difference in processing of online violent behavior between men and women. It also raises questions regarding the nature of trait disinhibition, suggesting it being at least two-dimensional rather than unidimensional inhibition-disinhibition construct, especially considering manipulativeness as a measure of disinhibition and considerateness as a measure of inhibition. Finally, the above results may reflect culturally imposed gender roles and behaviors prevalent in Croatian culture, with men traditionally tending to be more aggressive and opportunistic in order to gain social acceptance and higher self-esteem among other men, and women being more self-conscious and more empathic.

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