

## *Summary*

# The Development of Online Disinhibition Scale: Reliability and Validity Study

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Online communication allows individuals to communicate and build relationships in a different way compared to traditional face-to-face communication (Amichai-Hamburger & Hayat, 2013; Kraut, Mukopadhyay, Szceypula, Kiesler, & Scherlis, 1998). Researchers who study Internet communication argue that individuals discover different aspects of themselves in online contexts (Turkle, 1995), and the context offers them a chance to experiment with their identities (Caspi & Forsky, 2006). There is a handful of research showing that individuals behave differently in online and face-to-face contexts (Amichai-Hamburger, Wainapel, & Fox, 2002; Joinson, 2007; Suler, 2005). According to the Social Identity Model of Deindividuation (SIDE), reduced social cues and anonymity creates a shift between personal and social identity. Under these circumstances, an individual's social identity becomes more salient than personal identity. In other words, an individual's tendency to perceive themselves as individual decreases and they tend to behave as if they are anonymous. Therefore, when the social identity is more salient, individuals are more likely to feel comfortable taking actions that are not in line with social norms. This apparent decrease in individual's concern over how they are perceived by others is called the disinhibition effect (Joinson, 1998). The construct of the disinhibition effect has its roots in Gustav Le Bon's (1895) theory of crowd psychology which explains how an individual's behavior becomes less restricted when they feel indistinguishable from others in the crowd. The definition of disinhibition, which is usually used for the explanation of group behavior, can be easily adapted to the explanation of human behavior in online contexts. In fact, many recent studies used the SIDE model to explain online behavior (e.g., Alvidrez, Pineiro-Naval, Marcos-Ramos, & Rojas-Solis, 2015; Christie & Dill, 2016; Guegan, Moliner, & Milland 2016). According to the SIDE model, the online disinhibition effect refers to a psychological state in which internal control mecha-

nisms are reduced (Spears & Lea, 1994; Suler, 2004).

The online disinhibition effect is not by definition positive or negative; instead, it is associated with either positive or negative consequences (Suler, 2004). Increased negative comments on online platforms (Santana, 2014), cyberbullying (Lowry, Zhang, Wang, & Siponen, 2017; Udris, 2014), and problematic Internet use (Spada, 2014) are some examples of negative consequences associated with the online disinhibition effect. Positive consequences can be exemplified as increased communication and self-disclosure of individuals characterized as high in shyness (Amichai-Hamburger, 2007; Saunders & Chester, 2008), introversion dimension of personality (Amichai-Hamburger et al., 2002), and loneliness (Whitty & McLaughlin, 2007).

In various research studying online behavior, the online disinhibition effect has been conceptualized as either an Internet attribute (Cheung, Wong, & Chan, 2016; Görzig & Olafsson 2013; Hollenbaugh & Everett, 2013; Suler, 2004), a behavior (Cheung et al., 2016; Lapidot-Lefler & Barak, 2012; Udris, 2014) or a psychological state (Casale, Lecchi, & Fioravanti, 2015; Cheung et al., 2016; Schouten, Valkenburg, & Peter, 2007). In this study, it is conceptualized as a psychological state in which individuals feel less inhibited to perform particular behaviors and express certain feelings or thoughts in online interactions compared to face-to-face interactions (Casale et al., 2015; Schouten et al., 2007).

Studies involving adaptation or construction of an online disinhibition measurement tool are limited in number, and each study conceptualizes online disinhibition in a different way (Schouten, Valkenburg, & Peter, 2007; Suler, 2004; Udris, 2004). After a detailed examination of existing scales, it can be concluded that there is a need for a comprehensive tool that conceptualizes online disinhibition as a psychological state in the Turkish language. Although the scale of Schouten, Valkenburg, and Peter (2007) did conceptualize online disin-

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hibition as a psychological state, the scale consists of 3 items and focused on instant messaging. Overall, the aim of the present study is to develop an instrument based on the SIDE model that measures the level of online disinhibition effect as a psychological state and assess its reliability and validity on university students.

## Method

### Pilot Study

A total of 130 university students (88 female, 42 male) with an average age of 25.48 ( $SD = 6.13$ ) voluntarily participated in the pilot study. The scale development process was conducted in line with the steps suggested in Güngör (2016). An initial item pool of 22 items was generated based on the literature and SIDE theory. For the content validation purposes, items were revised by researchers in the field of measurement and psychology followed by a cognitive interview procedure (Dillman, 2011) carried out with a university student. The remaining 15 items were measured on a 5 point Likert scale ranged between "1: Strongly disagree" to "5: Strongly agree". The scale was applied to the pilot sample along with Turkish versions of the Revised Cheek and Buss Shyness Scale (Koydemir, 2006) and Five-Factor Personality Scale (Sümer & Sümer, 2005). Results of Exploratory Factor Analysis (EFA) revealed that the first factor (facilitated communication) accounted for 35.47% of the variance, whereas the second factor (reduced responsibility of negative consequences) accounted for 12.08% of the variance. Reliability analysis revealed an alpha coefficient of .85 for facilitated communication factor and .75 for reduced responsibility of negative consequences, .86 for the total scale, which indicates satisfactory reliability (Nunnally, 1978). In advance of the main study, several changes have been made to the items depending on the results of EFA. Firstly, item number 13 was removed due to the fact that it did not load on any factor. Secondly, following another consultation with two researchers from the field of measurement and psychology, the 8<sup>th</sup> item was removed based on the notion the content overlapped with the 2<sup>nd</sup> item. Finally, in order to balance the item numbers in each factor, another item was added to the second factor.

### Participants and Procedure

A total of 517 university students (266 Female, 250 Male, 1 unspecified) aged between 18 and 30 ( $M = 21.18$ ,  $SD = 2.47$ ) was participated in the study. Alongside the online disinhibition scale developed by researchers, the Communication Skills Inventory (Korkut-Owen & Bugay, 2014) and the Turkish version of the Ten Item Personality Inventory (Atak, 2013) were also applied.

Data were collected from the voluntary participating students during class hours.

## Results

A confirmatory factor analysis (CFA) was conducted to test the construct validity of the 14 item inventory. Results from the CFA suggested that the three-factor structure fit well to the sample data after several modifications have been done based on the modification indices which have been carried out considering the theoretical structure of the model. All of the fit indices are displayed in Table 2, and the final form of the model is available in Figure 2. Analysis of internal consistency reliabilities suggested Cronbach alpha coefficients of .83 for the reduced responsibility of negative consequences factor and .80 for the facilitated communication factor.

For further validation, the correlation between the factors of communication and personality scales and factors of the online disinhibition scale was examined. Results reveal that the "facilitated communication" factor displayed a negative correlation with "expression of self," "willingness to communicate and active listening," and "nonverbal communication" factors and displayed no significant correlation with the "communication principles and basic skills" factor. The "reduced responsibility of negative consequences" factor, on the other hand, had a significant negative correlation with all of the communication skill factors (see Table 3). For the personality dimension, the "facilitated communication" factor has a significant negative correlation with the "Introversion" factor of the ten-item personality scale ( $r = -.20$ ). There was no significant correlation between "reduced responsibility of negative consequences" and "introversion."

Finally, a Multivariate Analysis of Variance (MANOVA) was conducted in order to examine the role of gender on factors of the online disinhibition scale. Results indicated a significant gender difference in both factors (Wilk's  $\lambda = 959$ ,  $F(2, 513) = 11.05$ ,  $p < .05$ ). Women scored higher compared to men in the "facilitated communication" factor ( $F(1, 514) = 4.51$ ,  $p < .03$ ), whereas men scored higher compared to women in the "reduced responsibility of negative consequences" factor ( $F(1, 514) = 5.44$ ,  $p < .03$ ).

## Discussion

The present study aimed to develop an Online Disinhibition Scale as a result of an extensive literature review, consultation with experts, cognitive interview with a university student, a pilot study followed by the main study. Results of the exploratory and confirmatory factor analyses supported sufficient evidence for a 14 items

model consisting of a 2-factor structure. The first factor, "*facilitated communication*" (items 1, 2, 3, 4, 7, 8, 9, 12), refers to individuals feeling more comfortable in online communication compared to face-to-face communication, therefore, engaging in more self-disclosure and a better sense of self-expression. The second factor, "*reduced responsibility of negative consequences*" (items 5, 6, 10, 11, 13, 14), refers to the decreased feeling of responsibility of the negative behaviors or attitudes in the online context that are mostly inhibited due to social norms in the face-to-face communication. Further examinations of validity evidences indicate that women have scored higher in facilitated communication factors, whereas men have scored higher on reduced responsibility of negative behavior factors. This can be seen as an indicator of how gender is a significant predictor of how individuals experience the online disinhibition effect.

Although the scale provides valid and reliable scores with a sample of university students, considering that it is a newly developed instrument, it should be evaluated within its limitations and further reliability and validity studies need to be carried out. One of the limitations of the present study is that the use of convenience sampling. Further studies conducted with a random sampling method will provide an important contribution to the generalizability of the results. Besides, in order to examine how the online disinhibition effect is associated with personality dimensions, more comprehensive scales of personality could strengthen the results. The main aim of this scale is to help understand the experiences of individuals when they communicate in online environments. The scale can be useful for research that has a focus on areas of online communication, online relationships, cyberbullying, problematic Internet use. Moreover, it is suggested that another validity and reliability study for the instrument can be conducted with a sample of adolescents since online communication and the use of technology is much more common among them. Presky (2001) has used the term "digital natives" for the generation which grew up within the technological era. Therefore, in order to understand the experiences of digital natives, understanding online behavior and communication is of great importance (Gallo, Rausch, Smith, & Wood, 2016) which makes the use of such scales significant.