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Self-expression in contemporary digital culture

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CHAPTER THREE

Predictors of Emotional Expressivity on Social Media: The Role of Personality Traits and Social Norms

The purpose of this study was to assess the relationships between frequency of public online emotion expression and individual differences in personality traits (i.e., need for popularity, impulsivity, social anxiety, self-monitoring, narcissism), as well as the potentially mediating role of social norms in this relationship. Using survey data ($N = 1,145$) from social media users ranging in age from 15 to 25 years ($M = 19.2$; 51.2% female), we first found norms to be an important predictor. Furthermore, the results revealed that frequent expressions of positive emotion and negative emotion are predicted by different sets of individual differences. Notably, differences in social anxiety, need for popularity, self-monitoring, and narcissism variably predict how often positive emotions are expressed when mediated by norms. In terms of frequent negative emotion expressions, social anxiety and narcissism were predictive when mediated by norms, while impulsivity and self-monitoring were found to directly predict the likelihood of frequent negative emotion expressions. The findings suggest the importance of the interaction between personality traits and social norms in further understanding self-expressive behaviors on social media.

Given the pervasiveness of individuals sharing their personal thoughts, feelings and experiences online, the expression of emotion on social media has gained attention among scholars (e.g., Derks, Fischer, & Bos, 2008). To attain a better understanding of differences in online expression more generally, scholars have begun to focus on individual differences. A common individual difference that has been considered in the literature on online expressions is that of personality. A majority of empirical research has focused on the personality dimensions of the Big Five in relation to online expressions, yet this has largely generated inconclusive findings (e.g., Utz, Tanis, & Vermeulen, 2012). Scholars have recently argued that these inconsistencies may be due to a lack of specificity in the predictors and online expressions studied. Three issues have been identified. First, much research has focused on predicting rather broad online social behaviors such as general self-disclosure, which may be less suitable given the differential uses that social media allow for (e.g., Hughes, Rowe, Batey, & Lee, 2012). Second, the dimensions of the Big Five have been argued to be too broad in scope to be informative in predicting online social behaviors (e.g., Ross et al., 2009). Third, scholars have noted the potential explanatory role of social norms for disclosure on expressive behaviors online (e.g., Choi & Toma, 2014), which has yet to be empirically tested in relation to the expression of emotions on social media.

The current study aims to address these three issues. The first goal of the study is to gain a more nuanced understanding of expressive behaviors online by focusing on the specific expression of positive and negative emotions on public social media platforms (i.e., Facebook, Twitter, and Instagram). The second goal is to examine specific individual differences that are predictive of different emotion expressions online. For this reason, the study incorporates individuals' need for popularity, social anxiety, impulsivity, self-monitoring, and narcissism. The third goal is to investigate the role of perceived injunctive norms (i.e., the perception of what is deemed appropriate or inappropriate by others in terms of expressing emotions) in mediating the relationship between individual differences and emotion expression online.

Emotion Expression Online and Individual Differences

Typically, individuals express themselves more positively than negatively in both offline and online settings (Howell & Conway, 1990; Reinecke & Trepte, 2014). This

positivity bias on social media has been reasoned to result from prevailing positivity or politeness norms in online settings (e.g., Reinecke & Trepte, 2014; Spottswood & Hancock, 2016). More generally, and as outlined in the hyperpersonal model (Walther, 1996, 2007), the positivity bias may be due to the opportunities to enhance or embellish one's self-portrayals more so than in face-to-face settings as a result of the heightened perceived control over one's communication. At the same time, communication has been argued to be more intimate and personal due to the reduction in nonverbal cues. That is, users do not rely as much on physical appearance and focus more on linguistically conveying one's intentions and affect. This logic may extend to online emotion expression. The reduced 'physical' visibility and heightened control within online settings are argued to create a 'safer' space for emotion expression (Derks et al., 2008). However, the reduction in nonverbal cues may also encourage disinhibition, with the result that people may reveal more personal information than they would normally do (Schouten, Valkenburg, & Peter, 2007; Suler, 2004).

In line with such theoretical considerations, we recently found that on Facebook, Twitter, and Instagram expressions of positive emotions were perceived as significantly more appropriate than expressions of negative emotions (Waterloo, Baumgartner, Peter, & Valkenburg, 2017). Expressions of negative emotions, which in the study included sad, angry, disappointment and worried expressions, were however not necessarily considered inappropriate. Other studies have suggested that positive expressions can have beneficial outcomes, such as greater social attractiveness (Antheunis, Valkenburg, & Peter, 2010; Bazarova, 2012) and positive feedback, while negative expressions more likely leads to negative feedback (e.g., Forest & Wood, 2012). Such outcomes reinforce the perception that positive emotion expressions are more appropriate and appreciated, while the expressions of negative emotion might more likely be socially sanctioned. Nevertheless, instances of overly negative, intimate, or antinormative expressions on social media are not uncommon (McLaughlin & Vitak, 2012).

Within the context of online self-expression more broadly, scholars have noted the value of considering personality differences. Specifically, one's disposition may reinforce specific behavioral tendencies, and thereby result in different behavioral patterns online (e.g., Nguyen, Bin, & Campbell, 2012). To date, however, little research has addressed personality differences in expressing emotions on social media. The

act of expressing personal information is inherently tied to impression management, defined as the strategies with which an individual controls the way they are perceived by others (Leary & Kowalski, 1990). In the context of social media in particular, impression management strategies includes expressions of self-relevant information, such as sharing emotional experiences (Chou & Edge, 2012; Lin, Tov, & Qiu, 2014; Qiu, Lin, Leung, & Tov, 2012). Notably, strategically managing what to express and what not to express (i.e., selective self-presentation) allows individuals to maximize the social rewards versus the risks that are of particular importance to them (Leary & Kowalski, 1990).

As mentioned, social media allow users to calculate their self-presentation more deliberately than offline. Simultaneously, especially for public social media platforms such as Facebook, Twitter, and Instagram, the need to weigh decisions regarding one's self-expressions is heightened due to the archived nature of online content. From a strategic point of view, positive expressions may leave a good impression on others while negative expression may lead to negative judgment (e.g., Gross, Richards, & John, 2006). Recent research has found that the more social benefits an individual expects, the more personal information he or she will post on Facebook (Dienlin & Metzger, 2016). Some individuals may however not care as much about these potential social risks or rewards, or may be less motivated to employ strategies in managing others' impressions of them, while others might be highly aware of the evaluation of others. Given this socially motivated nature of emotion expression, it is informative to examine traits that differentiate individuals in the extent to which they are perceptive of their social surroundings or value the social outcomes (i.e., risks or rewards) of their impression management-related behaviors. The current study focuses on five personality tendencies that relate to such social motivations, which include one's need for popularity, impulsivity, social anxiety, self-monitoring, and narcissism.

Need for Popularity

The need for popularity is a personality trait recently introduced in the literature on social media use and self-presentation, and refers to the tendency to behave in ways that maximize one's popularity with others (e.g., Utz et al., 2012). This disposition is especially relevant for understanding younger individuals' expressive behaviors online, as belonging to a peer group is an essential part of adolescent

development (Santor, Messervey, & Kusumakar, 2000). Research has shown that need for popularity is an important predictor of online self-disclosure and self-presentation (e.g., Christofides, Muise, & Desmarais, 2009; Utz et al., 2012). More specifically, those high in need for popularity are more likely to engage in strategic self-presentation, profile enhancement, and the disclosure of feelings in such a way that they will appear more popular to others (Utz et al., 2012). In relation to emotion expression, we consequently expected:

H1: Higher need for popularity will predict more frequent expressions of positive emotions (H1a) and less frequent expressions of negative emotions (H1b) on public social media platforms

Impulsivity

Impulsivity describes a dispositional tendency to display actions that are not well-thought through and often unnecessarily risky or inappropriate. In addition, impulsive individuals typically exhibit impatience, carelessness, and an inability to assess consequences (e.g., Chamberlain & Sahakian, 2007). To date, impulsivity has often been associated with excessive social media use (Cao, Su, Liu, & Gao, 2007), but has not yet been examined in relation to specific behaviors online such as emotional self-expression. Given that impression management revolves around the control over one's expressions to strategically influence the perceptions others may form of them (Leary & Kowalski, 1990), impulsivity is a relevant trait to consider. While people have greater control over what they post online than offline (e.g., Valkenburg & Peter, 2011), those with a higher disposition of impulsivity may just as likely blurt out their feelings and opinions, similar to their behavior in offline settings (Archer, 1979). Added to this, posting status updates online is often done spontaneously, made possible by mobile technologies and the instantaneousness that typifies most social media platforms (Manovich, 2009; Wang et al., 2014). As a result, impulsive individuals may likely frequently express both positive and negative emotions on social media platforms. Therefore, we hypothesized:

H2: Higher levels of impulsivity will predict more frequent expressions of positive emotions (H2a) and more frequent expressions of negative emotions (H2b) on public social media platforms

Social Anxiety

Social anxiety is a disposition often related to self-protective behaviors and concerns for disapproval from others (Meleshko & Alden, 1993). Those high in social anxiety are more likely to experience stress in social situations because of the expectation to be evaluated by others and, therefore, are typically more inhibited and withdrawn (High & Caplan, 2009; Schlenker & Leary, 1982). Some researchers have argued that individuals characterized by social anxiety are likely to be drawn to computer-mediated communication because of the sense of control over self-presentations it affords, as well as the relatively safe environment it provides for self-expressions due to its reduced cues (e.g., High & Caplan, 2009). In contrast, studies have found that socially anxious individuals are less likely to use the internet for social interactions compared to less socially anxious individuals (e.g., Valkenburg & Peter, 2007). In terms of self-presentation, however, socially anxious individuals are highly motivated to portray themselves in a positive manner (Caplan, 2007; High & Caplan, 2009). Hence, we expected:

H3: Higher levels of social anxiety will predict more frequent expressions of positive emotions (H3a) and less frequent expressions of negative emotions (H3b) on public social media platforms

Self-Monitoring

Self-monitoring is broadly defined as the disposition to be concerned with social appropriateness (e.g., Snyder, 1974). Typically, those high in self-monitoring engage in monitoring others' expressions and self-presentations to assess how to manage their own. Public social media platforms in particular allow for the monitoring of others' expressive behaviors. In terms of expressiveness, some researchers have found that high self-monitors are verbally assertive in their communication with others (Dabbs, Evans, Hopper, & Purvis, 1980). Due to the focus on social appropriateness, high self-monitors likely present themselves in a social desirable way, especially in a public situation where accountability is perceived as high (Turnley & Bolino, 2001). In an online context, Rosenberg and Egbert (2011) found that self-monitoring is not necessarily related to self-promoting strategies in self-presentation. However, research on variables related to self-monitoring, such as public self-consciousness, has found that social media users report more positive

than negative experiences online (Lee-Won, Shim, Joo, & Park, 2014). For this reason, we hypothesized:

H4: Higher levels of self-monitoring will predict more frequent expressions of positive emotions (H4a) and less frequent expressions of negative emotions (H4b) on public social media platforms

Narcissism

Narcissism has often been associated with different types of social media use. Narcissistic individuals typically have an exaggerated and overly positive self-concept, inflated sense of self-importance and a constant need for admiration from others (e.g., Buffardi & Campbell, 2008; Panek, Nardis, & Konrath, 2013). In terms of online self-presentation, studies have consistently found that narcissistic individuals primarily engage in self-promotion online as a way to gain this admiration from others, which simultaneously reflects their tendency to boast (e.g., Buffardi & Campbell, 2008; Marshall, Lefringhausen, & Ferenczi, 2015; Mehdizadeh, 2010). This ties in with the main motivations of narcissists in using public social media platforms, such as appearing cool to others (Sheldon & Bryant, 2016). Some scholars have also argued that narcissists have a tendency to engage in anti-social behavior in online settings due to their sense of entitlement. For instance, a study by Carpenter (2012) found that those high in narcissism (i.e., specifically the dimensions of entitlement and grandiose exhibitionism) demand social support whenever they are in need of this, while they do not feel the need to reciprocate. In accordance, a study by Leung (2013) found that those scoring high on grandiose exhibitionism were more likely to use social media to vent negative feelings compared to individuals that scored low on this measure. We therefore expected:

H5: Higher levels of narcissism will predict more frequent expressions of positive emotions (H5a) and more frequent expressions of negative emotions (H5b) on public social media platforms

Perceived Injunctive Norms as a Mediator

Although there are good reasons to assume that the five aforementioned personality traits relate to emotion expression online, it is currently unclear why these traits

may predict this particular behavior. One explanation may lie in the social norms that guide online behavior. The social identity model of deindividuation effects for example posits that, in online settings, individuals strongly rely on prevailing social norms in expressing themselves due to the reduction in social cues (Postmes, Spears, & Lea, 2000). More specifically, scholars have noted that social norms of disclosure may be an important predictor of online social behaviors in particular when it comes to the disclosure of personal information in public settings (Amichai-Hamburger & Vinitzky, 2010; Choi & Toma, 2014). Injunctive norms specifically, referring to the perception of what other people deem appropriate (Lapinski & Rimal, 2005), guide social behavior based on the perceived potential social consequences (Cialdini & Trost, 1998). Given this guiding nature of perceived injunctive norms, a higher frequency of positive (or negative) emotion expression may be based on a higher perceived appropriateness of positive (or negative) emotion expression.

Injunctive norms are constructed based on one's own individual judgement (e.g., Lapinski & Rimal, 2005). Accordingly, research has suggested that perceptions of social norms, and of injunctive norms in particular, may differ among individuals (e.g., Lapinski & Rimal, 2005; Schlenker & Leary, 1982). Scholars in the domain of social psychology have put forth that some people are under more normative control than others (e.g., Trafimow & Finlay, 1996, 2001). Specifically, individuals who have a stronger collective self, relative to their private self, have been argued to more likely adjust their behavior to those around them (Triandis, 1994). Based on differences in personality tendencies, individuals may thus come to perceive the degree of appropriateness of expressing certain emotions online in different ways, and will act accordingly. It is therefore of interest to examine whether perceived injunctive norms of emotions expression act as a mediating psychological mechanism between personality traits and the frequency of emotion expression online. In doing so, we gain a more nuanced perspective on the predictive associations with emotion expression online.

Based on the characterization of traits within the literature, one could expect those high in need for popularity, self-monitoring and social anxiety to be especially concerned with the perceived approval of others, and hence perceive appropriateness of expressing emotions more conservatively. In contrast, those high in narcissism may consider their own online emotion expression as more appropriate due to their higher sense of entitlement. Similarly, those high in

impulsivity might not be as attentive to what others may or may not deem appropriate and therefore perceive most expressions of emotions as appropriate. Thus far, research remains limited on the associations between personality and norms, making it difficult to assert specific expectations. For this reason we formulated the following research question:

RQ1: To what extent are the relationships between personality (i.e., need for popularity, impulsivity, social anxiety, self-monitoring and narcissism) and frequency of emotion expression (i.e., positive and negative) mediated by perceived injunctive norms of emotion expression?

Method

Sample and Procedure

An online survey was administered in March 2016 through a professional research company. Institutional ethical approval was granted prior to data collection. The data that were collected were part of a larger project on different conceptual domains related to online emotion expression. A sample of 1,201 young individuals was surveyed. Half of the sample indicated to be between the ages of 15 and 18 ($n = 591$), and half between the ages of 19 and 25 ($n = 610$). In terms of gender, 48.8% of the full sample was male, and 51.2% was female. After actively granting consent, which for participants under the age of 18 years included parental consent, individuals completed the larger survey on social media use and personality (approximately 20 minutes in duration). The research company provided participants with monetary compensation after successful completion of the survey.

First, participants were presented with a list of 21 platforms, and asked to indicate which social media platforms they had used from this list at least once in the month prior to the survey. This question served as a filter question for further questions that, for the purpose of this study, specifically focused on three platforms (Facebook, $n = 1060$; Twitter, $n = 416$; and Instagram, $n = 655$). The platform WhatsApp was also included in the survey but is not part of this study because it is considered a private social medium, which does not fit in with the current focus on public expression of emotions. Therefore, the final sample used in this study amounts

to 1,145 participants. The order in which these platform-specific questions were presented to participants was randomized as a means to avoid order-effects. The final questions of the survey included items that measured the personality traits that were of interest to this study, for which purposely short item measures were included to avoid fatigue effects.

Measures

Norms of emotion expression

Participants were asked to indicate to what extent they agreed with statements regarding their perception on the appropriateness of expressing specific positive and negative emotions for each platform. We operationalized positive emotion expression with those of joy and pride, and negative emotion expression with sadness, anger, disappointment, and worry, selected based on their likelihood of being expressed on social media. An example for the positive emotion expression of joy includes: "The people who are important to me would be okay with me posting about something that made me joyous". Similarly worded items also measured pride (positive emotion expression), as well as sadness, anger, disappointment, and worry (negative emotion expression), amounting to six items per platform. These items are based on the operationalization of personal injunctive norms typically used in empirical research on norms (e.g., Park and Smith, 2007). Responses were measured using a five-point Likert-type scale (1 = completely disagree, 5 = completely agree). As the focus in this study is on public social media settings, the items were collapsed across all three platforms to compute one score for norms on negative emotion expression, comprising 12 items in total, and one for positive emotion expression comprising 6 items. For the norm items of negative emotion expression, internal consistency was high with a Cronbach's alpha of .94 (12 items, $M = 3.11$, $SD = 0.85$, $n = 1,145$). For positive emotion expression, Cronbach's alpha was .85 (6 items, $M = 3.84$, $SD = 0.78$, $n = 1,145$).

Frequency of emotion expression

Similar to the measures of perceived injunctive norms, participants were asked to indicate how often they expressed specific emotions for each social media platform under study. The items were worded as follows: "Something that makes me ...[sad]". Again, participants were presented with six items, reflecting the

six emotions including joy, pride, sadness, anger, disappointment, and worry. Responses were measured on a scale from 1 (never) to 5 (very often). Similar to the norms of emotion expression as outlined above, the items were collapsed across all three platforms to compute one score for frequency of negative emotion expression, comprising 12 items in total, and one for positive emotion expression comprising 6 items. For the frequency of negative emotion expression for all three platforms combined, Cronbach's alpha was .94 (12 items, $M = 1.93$, $SD = 0.83$, $n = 1,145$). For positive emotion expression, Cronbach's alpha was .82 (6 items, $M = 3.07$, $SD = 0.94$, $n = 1,145$).

Need for popularity

To measure one's need for popularity, we selected 5 items based on high factor loadings from the Popularity subscale developed by Santor et al. (2000). Items included "I've been friends with some people, just because others liked them" and "At times, I've changed the way I dress in order to be more popular". Participants could indicate their responses on a 5-point Likert-type scale ranging from 1 (completely disagree) to 5 (completely agree). The items revealed a Cronbach's alpha of .90 ($M = 2.26$, $SD = 0.88$).

Impulsivity

Six items were used to understand the extent to which participants typically display impulsive behavior. The items were based on the impulsivity dimension adapted from the DSM-5 checklist for ADHD (American Psychiatric Association, 2013). The scale consisted of statements such as "I have difficulty awaiting my turn" and "I blurt out an answer before a question has been completed", for which participants could indicate the frequency of occurrence within the past 6 months. Answer options ranged from 1 (never) to 5 (very often). Cronbach's alpha was .82 ($M = 2.46$, $SD = 0.68$).

Social anxiety

Four items were included from the Social Anxiety Scale for Adolescents scale developed by La Greca and Lopez (1998), which measured the extent to which individuals experience social anxiety. The selected four items have been successfully used in previous research among young participants (e.g., Valkenburg

& Peter, 2008). Participants were presented with statements such as “I feel nervous when I’m around certain people”, which they were asked to rate on the frequency of their occurrence within the past 6 months on a scale from 1 (never) to 5 (very often). The items formed a reliable scale as reflected in a Cronbach’s alpha of .85 ($M = 2.74$, $SD = 0.82$).

Self-monitoring

To assess the trait of self-monitoring, 8 items were selected based on highest factor loadings from the Adolescent Self-Monitoring Scale that measure two dimensions of self-monitoring: ‘Ability to modify self-presentation’, and ‘sensitivity to expressive behavior of others’ (Pledger, 1992). Example items include “When I’m with a group of people, I can change the way I act if I think I should”, and “I can usually tell how someone feels without him/her telling me”. Participants could rate each statement on a 5-point Likert-type scale (1 = completely disagree, 5 = completely agree). All items together showed a Cronbach’s alpha of .85 ($M = 3.34$, $SD = 0.62$).

Narcissism

Four items were selected from the short 16-item Narcissistic Personality Inventory (Ames, Rose, & Anderson, 2006) to understand the extent to which participants displayed narcissistic tendencies. This selection was based on high factor loadings as well as measurement of distinct dimensions. Statements were presented, such as “I like to be the center of attention”, for which participants could rate whether they agreed or disagreed on a 5-point Likert-type scale ranging from 1 (completely disagree) to 5 (completely agree). The items together provided a Cronbach’s alpha of .83 ($M = 2.75$, $SD = 0.77$).

Analyses

To test the proposed hypotheses and research question, we tested two models in which the relation between individual differences and emotion expression online is mediated by injunctive social norms: One for positive emotion expression and one for negative emotion expression (see Figure 1). The models were tested using structural equation modeling in Amos 23. A recommended two-step approach was employed (e.g., Anderson & Gerbing, 1988): First a measurement model (CFA) was tested to confirm the factor structure of the variables included, before proceeding to

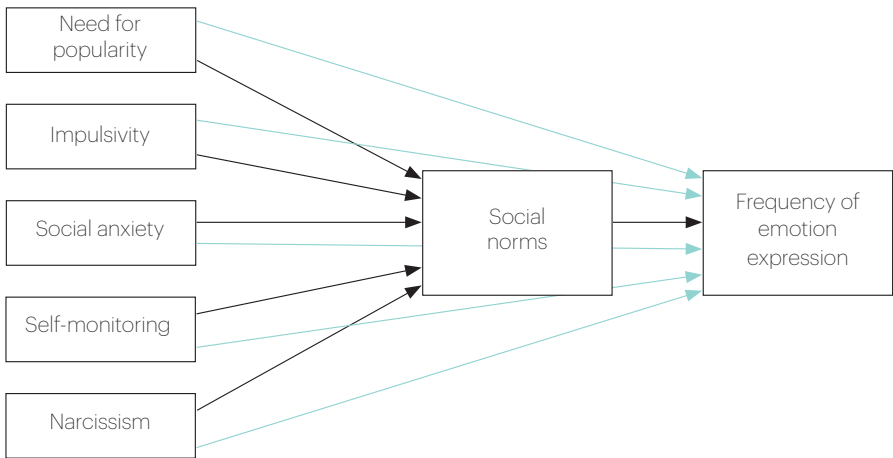
the structural models. All personality variables were tested in the structural models as latent variables, while the perceived injunctive norm and emotion expression variables were included as manifest variables based on their mean (separately for positive and negative emotions). Full Information Maximum Likelihood estimation was employed, which allows for casewise likelihood estimation using all available observed data (Enders & Bandalos, 2001; Peters & Enders, 2002). Since none of the variables showed issues in terms of skewness or kurtosis, and assumptions of multivariate normality were met, this can be considered a valid estimation method. To assess model fit, we focused on the following fit statistics: Chi-square test, Comparative Fit Index (CFI) and the Root Mean Square Error of Approximation (RMSEA).

We take account of the chi-square statistics along with its significance at the .05 level, yet several scholars note that with larger sample sizes (i.e., > 300) the model will most likely fail the exact-fit test (e.g., Kline, 2011). For this reason, we chose to additionally look at other fit statistics to more accurately determine the model fit. The CFI is a relative fit index, which indicates the fit of the model compared to a statistical baseline model and should preferably be above .90 to conclude improvement in model adequacy (Hooper, Coughlan, & Mullen, 2008; Kline, 2011). The RMSEA is an absolute fit index, which concerns the proportion of sample covariances that the model explains (Kline, 2011). To assess acceptable model fit, the RMSEA should preferably be below .08 for mediocre to acceptable fit and below .05 for close fit (along with confidence intervals scoring below .05 for the low interval and below .10 for the high interval), (Kline, 2011; MacCallum, Browne, & Sugawara, 1996). The p-close that accompanies the RMSEA further informs on the test of close fit, which should display non-significance. The CFI and RMSEA have been found to be the least sensitive to sample size (e.g., Fan, Thompson, & Wang, 1999) and are therefore proper indices in the current study given the larger sample size.

To understand the mediating role of perceived injunctive norms in the relationship between personality and frequency of emotion expression, the partial posterior and the Monte Carlo likelihood-based confidence interval were computed for each indirect relationship. The partial posterior calculates a p-value while accounting for nuisance parameters. It is considered a well-suited inference method when dealing with incomplete data as it maintains Type 1 error rates while maximizing power

(Biesanz, Falk, & Savalei, 2010). The Monte Carlo likelihood-based confidence interval method inverts a likelihood-ratio comparing a ML estimated model with an alternative model using fixed-value parameters (Falk & Biesanz, 2015; Preacher & Selig, 2012). These two approaches to testing the statistical significance of indirect effects have been argued to have more power than the traditionally used Sobel test, and have recently been verified as most appropriate when testing latent variable mediation models (e.g., Falk & Biesanz, 2015).

Figure 1. Conceptual model of tested relations between variables under study



Note. Two separate models were tested based on this model; one for positive emotion expression frequency with norms of positive emotion expression included, and one for negative emotion expression frequency with norms of negative emotion expression included.

Results

Measurement Model Evaluations

A Confirmatory Factor Analysis (CFA) including all personality traits was first conducted, which is an analysis used to specify how well the observed variables are represented by the constructs included in the model. The initial measurement model revealed an unacceptable model fit ($\chi^2 = 2456.06$, $df = 314$, $p < .001$; CFI = .86; RMSEA = .075 [.073, .078], p -close < .001). Using the respecification approach employed by Byrne (2010), the modification indices were reviewed to assess potential issues. These firstly suggested residual correlations for four out of eight items on the self-monitoring factor. While self-monitoring is generally considered to be one factor in the literature, its measurement taps into two different aspects of the self-monitor trait. These include the ability to modify self-presentation and the sensitivity to expressive behavior of others (Lennox & Wolfe, 1984). Provided that the modification indices overlap with these theoretically distinct aspects of self-monitoring, this indicates that it would be better to statistically treat them as two separate factors, which is also advised by some scholars who have previously critiqued the self-monitoring construct (e.g., Wolf, Spinath, Riemann, & Angleitner, 2009). Doing so produced a better model fit and confirmed the value of this alteration, $\chi^2 = 1565.24$, $df = 309$, $p < .001$; CFI = .92; RMSEA = .058 [.055, .061], p -close < .001.

In a step-by-step respecification approach, two other residual correlations were suggested that pointed towards redundancy due to content overlap. Specifically, for narcissism the items “I know that I am good because everybody keeps telling me so” and “People always seem to recognize my authority” show great similarity due to the focus on self-ascribed authority. Similarly, for impulsivity a residual correlation was added between the items “I have difficulty awaiting my turn” and “I blurt out an answer before a question has been completed”. While adding correlations between item residuals should be conservatively considered, scholars have noted that this is preferred above removal of items when item similarity is high (e.g., Byrne, 2010). The final corrected CFA measurement model revealed an improved and acceptable fit to the data ($\chi^2 = 1335.14$, $df = 307$, $p < .001$; CFI = .93; RMSEA = .053 [.050, .056], p -close = .054), from which we could proceed to the structural model. The single-order correlations are presented in Table 1.

Table 1. Single-order correlations (Pearson's r): individual differences, norms, and frequency of emotion expression

	1	2	3	4	5	6	7	8
1. Need for popularity								
2. Impulsivity	.50***							
3. Social anxiety	.21***	.24***						
4. Self-monitoring	.00	.07*	-.03					
5. Narcissism	.37***	.35***	-.19***	.34***				
6. Norms (positive)	-.09**	-.04	.01	.26***	.06*			
7. Norms (negative)	.02	.09**	.07*	.13***	.11***	.38***		
8. Frequency (positive)	.16***	.11***	.05	.15***	.19***	.40***	.17***	
9. Frequency (negative)	.35***	.37***	.14***	-.06*	.18***	-.11***	.32***	.37***

Note. * $p < .05$, ** $p < .01$, *** $p < .001$ (two-tailed).

Online Expression of Positive Emotions

Based on the corrected measurement model, a structural model was tested including latent variables for the personality traits and manifest variables to represent the perceived norms of emotion expression and frequency of expressing emotions. A full mediation model was tested with direct paths from the personality traits to perceived injunctive norms of positive emotion expression and one direct path from norms to frequency of positive emotion expression, which resulted in a model fit of $\chi^2 = 1514.05$, $df = 355$, $p < .001$; CFI = .93; RMSEA = .052 [.049, .055], p -close = .093. To test whether full or partial mediation best fits the data, a partial mediation model was tested including direct paths from personality traits to frequency of positive emotion expression as well as indirect paths through perceived injunctive norms of positive emotion expression. This yielded an acceptable model fit of $\chi^2 = 1442.18$, $df = 349$, $p < .001$; CFI = .93; RMSEA = .051 [.048, .054], p -close = .252. Partial mediation revealed a significant better model fit compared to the full mediation model as evidenced by a chi-square difference test ($\chi^2 = 71.87$, $df = 6$, $p < .001$).

The partial mediation estimated structural model for the expression of positive

emotions (e.g. pride and joy) explained 22% of the variance in the frequency of expressing positive emotions on public social media platforms. The relationship between norms of positive emotion expression and the frequency of positive emotion expression appeared to be positive and significant ($b^* = .40$, $t = 14.25$, $p < .001$). The traits of narcissism ($b^* = .11$, $t = 2.25$, $p = .025$), social anxiety ($b^* = .12$, $t = 3.19$, $p = .001$), and both self-monitoring aspects (sensitivity to others' expressive behavior, $b^* = .13$, $t = 3.12$, $p = .002$; ability to modify self-presentation, $b^* = .13$, $t = 3.04$, $p = .002$) showed significant and positive relationships with perceived norms of positive emotion expression. Need for popularity showed a significant negative relationship with perceived norms of positive emotion expression ($b^* = -.11$, $t = -2.45$, $p = .014$). Impulsivity did not show a significant relationship with perceived norms of positive emotion expression ($b^* = -.09$, $t = -1.89$, $p = .059$).

In terms of direct relationships between the traits and frequency of positive emotion expression, need for popularity ($b^* = .13$, $t = 3.24$, $p = .001$), narcissism ($b^* = .17$, $t = 3.72$, $p < .001$), and social anxiety ($b^* = .07$, $t = 2.03$, $p = .042$) showed positive and significant results. Impulsivity ($b^* = -.03$, $t = -0.75$, $p = .451$), and both aspects of self-monitoring (sensitivity to others' expressive behavior, $b^* = -.02$, $t = -0.51$, $p = .614$; ability to modify self-presentation, $b^* = .01$, $t = 0.18$, $p = .861$) appeared to be not significantly associated with the outcome variable directly. In light of these results, H1a, H3a and H5a seem supported while H2a and H4a do not seem to be supported. Based on the partial posterior and the likelihood-based confidence interval using a Monte Carlo approach (results presented in Table 2), it can be concluded that both self-monitoring factors are mediated by the perceived injunctive norms of positive emotion expression. Based on the indirect coefficient, the ability to modify self-presentation showed a positive indirect effect ($b^* = .05$, $b = 0.08$, $p = .002$), as did the factor representing sensitivity to others' expressive behaviors ($b^* = .05$, $b = 0.07$, $p = .002$). Need for popularity ($b^* = -.04$, $b = -0.06$, $p = .014$), social anxiety ($b^* = .05$, $b = 0.06$, $p = .001$) and narcissism ($b^* = .04$, $b = 0.08$, $p = .024$) appear to be partially mediated by perceived injunctive norms of positive emotion expression. This means that for these traits both direct and indirect effects were found in predicting frequency of positive emotion expression online.

Online Expression of Negative Emotions

The model for negative emotion expression was tested in a similar manner to the model for positive emotion expression. For the expression of negative emotions, the

full mediation model resulted in a model fit of $\chi^2 = 1732.95$, $df = 355$, $p < .001$; CFI = .91; RMSEA = .057 [.054, .060], p -close < .001. The partial mediation model yielded an adequate model fit of $\chi^2 = 1485.75$, $df = 349$, $p < .001$; CFI = .93; RMSEA = .052 [.049, .055], p -close = .101, which was again a significant better model fit compared to the full mediation model as evidenced by a chi-square difference test ($\chi^2 = 247.20$, $df = 6$, $p < .001$).

In total, the model explained 30% of the variance in the frequency of expressing negative emotions on public social media platforms. Similar to the expression of positive emotions, the relationship between norms of negative emotion expression and the frequency of negative emotion expression was positive and significant ($b^* = .31$, $t = 11.88$, $p < .001$). The traits of narcissism ($b^* = .12$, $t = 2.29$, $p = .022$) and social anxiety ($b^* = .11$, $t = 2.76$, $p = .006$) showed significant and positive relationships with perceived norms of negative emotion expression. Need for popularity showed a weak significant negative relationship with perceived norms of negative emotion expression ($b^* = -.09$, $t = -2.06$, $p = .039$). Impulsivity ($b^* = .07$, $t = 1.48$, $p = .138$) and both aspects of self-monitoring (sensitivity to others' expressive behavior, $b^* = .02$, $t = 0.37$, $p = .711$; ability to modify self-presentation, $b^* = .08$, $t = 1.72$, $p = .085$) did not show significant relationships with perceived norms of negative emotion expression.

In terms of direct relationships between the traits and frequency of negative emotion expression, need for popularity ($b^* = .21$, $t = 5.33$, $p < .001$) and impulsivity ($b^* = .30$, $t = 7.16$, $p < .001$) showed positive and significant results. The ability to modify self-presentation aspect of self-monitoring ($b^* = -.10$, $t = -2.53$, $p = .012$) showed a negative significant result. The traits of narcissism ($b^* = -.03$, $t = -0.73$, $p = .464$), social anxiety ($b^* = -.05$, $t = -1.47$, $p = .142$) and the sensitivity to others' expressive behavior aspect of self-monitoring ($b^* = -.02$, $t = -0.48$, $p = .628$) showed no significant associations. These findings are in support of H2b and partially H4b, while this appears not to be the case for H1b, H3b and H5b. Based on the partial posterior and Monte Carlo likelihood-based confidence interval (results presented in Table 2), it can be concluded that social anxiety and narcissism are mediated by perceived injunctive norms of negative emotion expression. Based on the indirect coefficient, both social anxiety ($b^* = .03$, $b = 0.04$, $p = .006$) and narcissism ($b^* = .04$, $b = 0.06$, $p = .021$) show positive indirect effects. The need for popularity ($b^* = -.03$, $b = -0.03$, $p = .038$) appears to be partially mediated by the perceived norms of negative emotion expression, revealing both a direct as well as an indirect effect on frequency of negative emotion expression.

Table 2. Direct and indirect results of personality traits on social norms and frequency of emotion expression

	Positive Emotion Expression						Negative Emotion Expression													
	Norms			Frequency			Indirect			Norms			Frequency			Indirect				
	<i>b</i>	<i>SE</i>	PP	<i>b</i>	<i>SE</i>	PP	<i>b</i>	<i>SE</i>	95% CI	<i>b</i>	<i>SE</i>	PP	<i>b</i>	<i>SE</i>	PP	<i>b</i>	<i>SE</i>	95% CI	PP	
Norms				.47	.03															
Need for popularity	-.12	.05		.17	.05	.014	-.06	-.10	-.01	.014			-.11	.05		-.03	-.07	-.00	.038	
Impulsivity				-.11	.06		-.05	-.10	.00	.058			.09	.06		.03	-.01	.06	.135	
Social anxiety				.12	.04	.001	.06	.02	.09	.001			.12	.04		.04	.01	.06	.006	
Self-monitoring 1				.14	.04		-.03	.05		.002			.02	.05		.01	-.02	.03	.709	
Self-monitoring 2				.17	.06		.01	.06		.002			.11	.06		.03	-.01	.07	.082	
Narcissism				.17	.08		.32	.09		.024			.19	.08		.06	.01	.11	.021	

Note. Significant results are marked in bold. PP = *p*-value based on the partial posterior, 95% CI = likelihood based confidence interval using Monte Carlo approach. Indirect refers to mediation of traits through perceived injunctive norms on frequency of emotion expression. Self-Monitoring 1 refers to the dimension that measures *one's sensitivity to others' expressive behaviors*. Self-monitoring 2 refers to the dimension that measures *one's ability to modify self-presentation*.

Discussion

The prime aim of this study was to shed light on the individual differences that distinctively contribute to the behavior of emotion expression within the public setting of current social media platforms (i.e., Facebook, Twitter, and Instagram). While social media mainly serve social ends, they also provide an indispensable platform for impression management in the current media environment. For this reason, the current study examined the predictive value of several individual differences relevant to the social motivations and perceptiveness that underlie impression management tactics: need for popularity, social anxiety, impulsivity, self-monitoring, narcissism, and perceived injunctive norms.

Overall, the findings highlight that the expression of positive emotions and the expression of negative emotions are predicted by different individual differences. Specifically, the personality traits of need for popularity, social anxiety, and narcissism positively predict the frequency of sharing positive emotional experiences in public social media settings. Notably, the results indicate partial mediation for these traits, as indirect effects through injunctive norms of positive emotion expression surfaced aside from direct effects. For self-monitoring, which was characterized by two distinct aspects, only indirect effects were found through norms. That is, the higher individuals scored on the sensitivity to others' expressive behaviors, the more they perceived the expression of positive emotions to be appropriate, and in turn the more frequently they reported to engage in doing so. The same mechanism was found for the self-monitoring aspect described in the literature as the ability to modify one's self-presentation. Given the focus of self-monitoring individuals on concerns with social appropriateness (Snyder, 1974), one can expect norms to play an important role in their decisions around public self-expressions. Taken together, perceptions on what is deemed appropriate by others thus appears to be an important mechanism to consider in understanding positive emotion expression.

Interestingly, self-monitoring did not appear to be mediated by norms in predicting the expression of negative emotion online. While one would expect norms to be highly relevant for self-monitors in the context of negative emotion expression, only one's perceived ability to modify self-presentations negatively

predicted the frequency with which one shares negative emotional experiences online – in a direct, rather than indirect manner. One’s sensitivity to others’ expressive behavior, as an aspect of self-monitoring, was not predictive of negative emotion expression. Impulsivity appeared to be the strongest direct predictor: Individuals scoring higher on impulsivity were more inclined to frequently express negative emotions on their public social media platforms. This finding is in line with expectations, as the literature has indicated that impulsive individuals more often blurt out their feelings and opinions in public settings (Archer, 1979).

For narcissism and social anxiety, norms again appeared to be an important mediating mechanism. However, those scoring high on social anxiety, unexpectedly, perceived negative emotion expression as appropriate, and in turn more frequently reported to do so. While not significant, the direct path from social anxiety to frequency of negative emotion expression was negative, and is thereby in line with the tendency of socially anxious individuals to be concerned with disapproval from others (Meleshko & Alden, 1993). One explanation for our finding could be that socially anxious individuals more typically maintain smaller networks and more intimate connections on their social media, and therefore feel their online connections would not deem such expressions inappropriate. In addition, there might have been some individuals in our data that are generally more inhibited and withdrawn or that have a larger following of friends, which would explain the contrasting negative direct effect. This group may have been too small to reach significance, and thereby indicates that most socially anxious individuals do consider negative emotion expression to be appropriate. Given that for both social anxiety and narcissism partial mediation was found for positive emotion expression, other mediating mechanisms may be of importance. It would therefore be fruitful to account for network size as well as privacy settings in future research in understanding their self-expressive tendencies online.

The findings for need for popularity, in terms of both positive and negative emotion expressions, were somewhat contradictory. While a higher need for popularity predicted more frequent expressions of positive and negative emotions, it also predicted lower perceived appropriateness of expressing positive and negative emotions. One could argue that those with a higher need for popularity have gathered larger and more diverse social networks across their most frequently used social media platforms. Consequently, they may deal with more complicated

social contexts, and may consider their emotional expressions to not be suitable for every individual within their online networks. They may nevertheless engage in frequent emotion expression, both positive and negative, to gain popularity among those that are well-known in their networks. The literature has so far however suggested that individuals with a higher need for popularity are driven to create more popular, hence positive, impressions (Utz et al., 2012). Given the partial mediation through norms for both positive and negative emotion expression, other mediating mechanisms may be at play. As a construct recently introduced in the literature on online self-expression, clearly more research is needed to fully understand what drives those with a higher need for popularity when it comes to emotion expressions.

Finally, perceived injunctive norms appear to be important in predicting online emotion expression. As expected, norms generally acted as a reinforcing factor in predicting frequency of emotion expression. In other words, if one perceives the expression in question as appropriate, one will more frequently do so. Given that norms also act as a mediator for most personality traits considered in this study, it suggests that these normative perceptions guide behaviors of expression for a number of individuals. In relation to negative emotion expression, norms appear to be somewhat less of a factor of influence compared to positive emotion expression. In the context of mean scores, however, individuals overall appear to steer clear from expressing negative emotions frequently online and primarily share positive experiences instead. To date, the role of social norms has received scant attention within social media research and the social behaviors found across them. Based on this study, social norms appear to be an important mechanism to consider, especially in light of public self-expressions and the decisions therein.

Contributions and Implications

Emotion expression is inherently human, yet the way it is shared depends on the individual and is restrained by perceptions of the social environment (Rimé, 2009). It is therefore informative to account for individual differences that predict this type of behavior. The current study extended research on self-disclosure and self-presentation by focusing on a variety of individual differences that have not yet collectively been considered in previous works. The findings of the current study provide insights into the predictive values of specific individual differences, and

suggest that people consider the social risks and rewards that come with sharing emotions as illustrated through the predictive value of norms. These potential risks and rewards may be perceived differently across individuals. This is in part due to differences in personality tendencies and normative perceptions, as shown through the current findings, but possibly also through differences in the perceived social (online) environment. Previous research already established the influence of network size, density, and diversity on disclosure behaviors in online settings (e.g., Lin et al., 2014; Vitak, 2012). While the current study focused on public social media platforms, such specific audience factors could be further examined together with relevant individual differences to better understand the antecedents of emotion expression behaviors online.

The insights on negative emotion expression are particularly informative for the positivity bias that is thought to prevail online (e.g., Reinecke & Trepte, 2014). The current findings suggest that some individuals are more likely to frequently post negative content on public social media platforms such as Facebook, Twitter, and Instagram, which were the platform considered in this study. Accordingly, the positivity bias may not apply to everyone. Based on the individual differences that predict more frequent expressions of negative emotions, one might argue that those less perceptive to their social surroundings are less likely to optimize the way they present themselves online. For one, impulsive individuals appear to more frequently express negative emotions online. As impulsivity is marked by an inability to assess consequences and unnecessarily risky behavior (Chamberlain & Sahakian, 2007), impulsive individuals may have difficulties in judging social consequences. Narcissistic individuals also more frequently express negative emotions. Their commonly heightened sense of entitlement (High & Caplan, 2009) may indicate a lack in social perceptiveness. Finally, socially anxious individuals were found more frequently to express negative emotions, which contradict their typically inhibited and socially perceptive tendencies (Carpenter, 2012). The reduced-cue nature of social media, however, may make it more difficult for them to gauge others' reactions to their online expressions. While negative emotion expression is not necessarily inappropriate, frequently doing so might be (e.g., McLaughlin & Vitak, 2012). This could subsequently put individuals with tendencies to post about negative emotions at risk for negative feedback and the potential consequences thereof (Koutamanis, Vossen, & Valkenburg, 2015), and merits further research.

Going forward, research could complement the current findings with actual emotion expression data (e.g., log data), which would assure more accurate representations of these expressive behaviors and their main predictors. Moreover, we cannot infer from our measures of norms which social risks or rewards are perceived to be associated with these normative perceptions. Future research may therefore more explicitly examine these risks and rewards to gain a more comprehensive understanding of perceived norms within different social media contexts. Lastly, the information on social media platforms and the behaviors found across them is a snapshot of a quickly changing environment. Social media and the opportunities for expression they provide are highly dynamic and continuously evolving, evident in newly introduced expressive features such as ‘Stories’ and the implementation of newer technologies such as virtual and augmented reality. Public expressions about the self will remain a popular aspect of social media in the near future, albeit in different formats, and deserve our continued research attention.

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