



Another brick in the Facebook wall – How personality traits relate to the content of status updates



Stephan Winter^{*}, German Neubaum, Sabrina C. Eimler, Vanessa Gordon, Jenna Theil, Jonathan Herrmann, Judith Meinert, Nicole C. Krämer

University of Duisburg-Essen, Department of Social Psychology: Media and Communication, Forsthausweg 2, 47057 Duisburg, Germany

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ABSTRACT

Status updates represent a new form of one-to-many communication which is widely used among members of social networking sites (SNS). The present study investigated the question of who in particular uses the self-presentational opportunities of this feature and which users engage in riskier self-disclosures than others. Combining questionnaire and content analysis, we related self-reports on users' personality traits (extraversion, narcissism, self-efficacy, need to belong, need for popularity) to the actual use of Facebook status updates. Results showed that higher degrees of narcissism led to deeper self-disclosures and more self-promotional content within these messages. Users with higher need to belong disclosed more intimate information in status updates, while perceived efficacy of self-presentation was negatively related to the mass suitability of postings. Findings extend prior research on personality and SNS usage with regard to dynamic features and content differences in online self-presentation.

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1. Introduction

Facebook, the world's largest social networking site, constantly asks its users one question: "What is on your mind?" And they answer with a multitude of short messages in which they share thoughts, experiences, or emotions with their friends – varying from rather trivial information on the weather or their breakfast to intimate disclosures on love affairs, break-ups or personal crises. These messages offer a novel form of "effortless and fast one-to-many communication" (Deters & Mehl, 2013, p. 580) which has become very popular among users of social networking sites (SNS): 44% of Facebook users update their status at least once a week (Hampton, Goulet, Rainie, & Purcell, 2011). According to estimations, around 400 million Facebook status messages are written every day (Fitzgerald, 2012).

This immense popularity and the fact that many people have integrated Facebook into their daily communicative routine may indicate that the usage of SNS in general and status updates in particular is helpful in fulfilling basic social needs such as staying in contact with acquaintances and for identity construction (e.g., Nadkarni & Hofmann, 2012). However, especially status updates

as (semi-)public messages might also complicate patterns of interpersonal communication or lead to undesired or negative impressions if a member of the audience perceives a specific message as inappropriate (Bazarova, Taft, Choi, & Cosley, 2013). Therefore, decisions about what to disclose in such messages can be regarded as complex processes of impression management, i.e., attempts to shape the perceptions others form about oneself (Leary & Kowalski, 1990), which are influenced by self-presentational goals, perceived audience expectations as well as stable personality traits. In this paper, we focus on the latter aspect and utilize the approach of personality psychology and individual differences in Internet usage (Amichai-Hamburger & Vinitzky, 2010; Ryan & Xenos, 2011) in order to explore the question of who in particular embraces this new form of online self-presentation and which users engage in deeper or riskier self-disclosures than others. By relating users' personality traits and their actual Facebook status updates, we aim to explain the usage of this novel manifestation of one-to-many communication (which differs from the creation of static profiles in early SNS usage) and contribute to the understanding of individual differences in online self-presentation.

While a considerable body of research examined the effects of personality on general SNS usage (e.g., Ross et al., 2009; Ryan & Xenos, 2011; Utz, Tanis, & Vermeulen, 2012), these studies mainly focused on static profile features (e.g., profile text or picture) or the number of friends but not on more recent dynamic features such as status updates. Furthermore, most studies assessed self-presentational behavior via self-reports instead of analyzing the

^{*} Corresponding author. Address: University of Duisburg-Essen, Department of Social Psychology: Media and Communication, Forsthausweg 2, 47057 Duisburg, Germany. Tel.: +49 203 379 2442; fax: +49 203 379 3670.

E-mail address: stephan.winter@uni-due.de (S. Winter).

original content which has been produced in SNS settings (for exceptions see [Mehdizadeh, 2010](#) or [Moore & McElroy, 2012](#)). Against this background, the present study investigated the relationship between personality traits which are theoretically linked to online self-presentation (extraversion, narcissism, self-efficacy, need to belong, and need for popularity) and the number, content, and style of status updates. In order to overcome shortcomings of previous questionnaire studies and gain deeper insights into the texts SNS users write to their network, we collected participants' original status updates for a detailed content analysis. These data were combined with participants' self-reports on personality traits.

2. Status updates in SNS

[Carr, Schrock, and Dauterman \(2012\)](#) describe status updates as a unique form of communication since they "afford an asynchronous, publically viewable message, and yet are directed at a specific audience: the user's network" (p. 180). They are usually short texts but can also include pictures or links to videos or online articles. When a user posts an update, it appears on the profile (wall) of the sender and is shown in the news feeds of her/his Facebook friends (unless the sender restricted visibility). Other users can "like" and share the posting or write a comment below. A linguistic analysis showed that the majority of status updates involves expressive speech acts and rich socio-emotional information ([Carr et al., 2012](#)).

From a self-presentational point of view, the individual user can carefully select what to write in an asynchronous computer-mediated message ([Walther, 2007](#)). Furthermore, the sender reaches a potentially large and relevant audience, which renders status updates as a very promising means of impression management ([Leary & Kowalski, 1990](#)), for instance, by stressing positive aspects of the self (in order to maximize social outcomes or to maintain or enhance self-esteem). Most of these messages are likely to involve forms of self-disclosure, e.g., on personal preferences, attitudes, experiences or emotions, which can primarily be classified with regard to the depth of self-revelation ([Cozby, 1973](#)). Depth as one dimension of self-disclosure refers to how intimate personal information is and has been posited as a prerequisite for developing and maintaining interpersonal relationships ([Altman & Taylor, 1973](#)). [Deters and Mehl \(2013\)](#) showed that the mere act of disclosing information to online friends increases the feeling of connectedness with others and reduces loneliness.

However, in spite of these advantages, status updates are not without pitfalls: other users might comment negatively on them and specific disclosures may appear inappropriate to some readers. The latter problem becomes more likely due to the diversity of SNS contacts: Even if users manage their profile with different access levels for specific groups, there is still a rather broad audience, which limits the possibility of adapting self-presentation to the specific interaction partner ("packaging", see [Leary, 1995](#)), as would be possible in face-to-face settings or private messages ([Krämer & Haferkamp, 2011](#)). One strategy in this context could be to present uncontroversial status updates which are understandable and acceptable for most people (in terms of "mass suitability"), on the other hand, superficial or cautious statements may not be helpful in arousing interest or creating positive impressions. In line with considerations about broad audiences, [Bazarova et al. \(2013\)](#) showed that status updates contain fewer negative emotions than private messages.

The way in which status updates are used as an instrument for communicating self-related aspects can be explained with the impression management model by [Leary and Kowalski \(1990\)](#). For face-to-face situations, the authors describe the values and expectations of the interaction partner, role constraints as well as

the person's self-concept and his/her desired identity images as elements which influence the style and content of self-presentation. Given the difficulties in tailoring messages to specific interaction partners in the Facebook context, it can be assumed that the importance of the target's values when communicating via status updates decreases (compared to communicating with only one person), while the self-concept of the sender and his/her desired identity ([Leary & Kowalski, 1990](#)) emerge as more decisive factors. Therefore, it seems promising to investigate the question of whether the enormous differences in quantity and quality of status updates can be explained by differences in personality traits and which personalities are particularly likely to disclose personal information to their network.

Drawing on the approach of individual differences in Internet behavior ([Amichai-Hamburger & Vinitzky, 2010](#)), the following chapter discusses the potential influence of personality traits which are theoretically linked to self-presentation and self-disclosure and have been shown to be relevant for SNS usage.

3. Individual differences in online self-presentation

3.1. Extraversion

A remarkable amount of early SNS studies has focused on extraversion as a predictor of users' behavior in SNS. In personality research, extraversion has been included as one dimension of the five factor model of personality ([Costa & McCrae, 1992](#)), conceptualized as the individual's tendency to be outgoing and engage in social activities. Following this line, previous works investigating the explanatory value of extraversion for SNS behavior have discussed two arguments: extraverts benefit the most from using SNS since they are able to extend their networks and pursue their communication needs with these technologies (rich-get-richer hypothesis; [Kraut et al., 2002](#)). In contrast, introverts using SNS have been assumed to benefit more since these platforms allow for a compensation of their communicative deficits in the management of interpersonal contacts in a comfortable way (social compensation hypothesis; [Valkenburg & Peter, 2007](#)). Empirically, evidence predominantly was in line with the rich-get-richer assumptions, showing extraversion to be positively associated with the number of SNS friends and frequency of SNS usage ([Correa, Hinsley, & de Zuniga, 2010](#); [Ong et al., 2011](#); [Utz et al., 2012](#); [Wilson, Fornasier, & White, 2010](#)). Even though these results reveal to what extent extraversion influences behavior on SNS, they do not offer insights into how this personality trait is reflected in the specific content and style of users' contributions on SNS. With regard to status updates as a communication feature addressing a larger group of people, it first seems justified to presume that extraverts post more status updates than introverts since the one-to-many communication via status updates offers an ideal venue for establishing and maintaining social contacts. We further assume that their outgoing nature leads them to divulge more intimate information in status updates in the sense of depth of self-disclosure than introverts (as has been shown in a recent study with self-reported assessments of Facebook behavior ([Hollenbaugh & Ferris, 2014](#))). Therefore, we hypothesize:

H1. Extraversion is positively related to (a) the number of posted status updates and (b) to the depth of self-disclosure in status updates.

3.2. Narcissism

Narcissism (in the sense of social and personality psychology, not as a clinic disorder) is characterized by an inflated self-concept

(e.g., overestimation of intelligence and attractiveness) and a strong sense of uniqueness and superiority (Campbell & Foster, 2002). Nevertheless, narcissists' self-concepts are fragile so that they constantly seek attention, admiration, or affirmation of their positive view of themselves (Ames, Rose, & Anderson, 2006; Morf & Rhodewalt, 2001). They are usually not interested in forming strong interpersonal relationships but rather in superficial weak-tie connections (and also skilled at initiating them; Campbell & Foster, 2002). Since SNS offer comfortable ways to achieve these goals, Buffardi and Campbell (2008) argued that they "may be an especially fertile ground for narcissists to self-regulate via social connections" (p. 1304). Empirically, they showed that people with higher degrees of narcissism were more active on SNS and displayed more self-promotional content (as rated by independent coders) on their static profiles (see also Mehdizadeh, 2010). The authors conclude that this personality trait is visibly manifested on SNS profiles and that strangers can achieve somewhat accurate assessments of a person's degree of narcissism by watching her/his profile. With regard to motivational aspects, Kapidzic (2013) found that narcissism was associated with higher motivations to choose profile photos which emphasize attractiveness. Since status updates are extremely capable of fulfilling narcissists' striving for positive feedback (through "likes" or positive comments), it can be expected that narcissists also write more of these messages and engage in considerable self-disclosure and positive self-descriptions in order to arouse attention. Accordingly, a first study with adolescents identified narcissism as a predictor of status update frequency (Ong et al., 2011). Thus, we hypothesize:

H2. Narcissism is (a) positively related to the number of posted status updates. People with higher degrees of narcissism include (b) deeper self-disclosures and (c) more self-promotional content in their status updates.

3.3. Perceived efficacy of self-presentation

As a further predictor of SNS behavior, a person's perceived efficacy of his/her respective self-presentation is likely to influence frequency and style of status updates. Based on the concept of self-efficacy (Bandura, 1977), subjective beliefs in one's own competencies can be seen as prerequisites of subsequent behavior: only individuals who perceive themselves as capable of a specific task are likely to engage therein, while individuals who perceive lower degrees of self-efficacy will try to avoid the specific task. Most relevant to the usage of SNS is the perception of one's own competencies to present oneself successfully in social situations (Mielke, 1990). In this line, Krämer and Winter (2008) showed that people who are convinced to be able to create positive impressions in offline situations are also more active on SNS and that high levels of self-efficacy were related to higher numbers of friends, more detailed information in the profile, a more informal style of profile texts, as well as more experimental profile pictures. Based on these findings and the theoretical connection between subjective beliefs and corresponding behavior, we assume that people with a high efficacy of self-presentation more often post status updates than people with low self-efficacy. Due to their confidence in self-presentational skills, it can also be expected that they do not pursue the cautious strategy of presenting only superficial messages which are widely acceptable.

H3. Perceived efficacy of self-presentation is (a) positively related to the number of posted status updates and (b) negatively related to the mass suitability of status updates.

3.4. Need to belong

Focusing on the individual in social contexts such as SNS also requires considering the human motivational disposition to affiliate with other individuals. In fact, SNS scholars recently investigated whether individuals' need for social contacts and maintaining interpersonal relationships is a critical determinant for explaining users' behaviors on SNS (cf. Nadkarni & Hofmann, 2012; Sheldon, Abad, & Hinsch, 2011). From a psychological point of view, the individual motivation for forming relationships has been referred to as the human need to belong or the need for relatedness (Baumeister & Leary, 1995; Ryan & Deci, 2000). This need has been defined as fundamental in such a way that deprivation can have negative effects on the individuals' psychological and physiological health (Cacioppo & Patrick, 2008). With regard to SNS, Sheldon et al. (2011) showed that the dissatisfaction of this need (i.e., the state of disconnection) drives SNS usage, while the sense of relatedness can be interpreted as a reward of SNS usage. In a further study, users' need to belong was shown to be positively related to general socializing behaviors (such as writing messages or observing others' profiles), strategic self-presentation and a routinized SNS usage (in the sense of using SNS as part of daily life; Utz et al., 2012). These studies, though, do not explicitly refer to the relevance of status updates as a means for addressing one's need to belong. This seems even more crucial since status updates with their rather expressive nature (Carr et al., 2012) can be seen as self-disclosing acts, which may contribute to maintaining interpersonal relationships (Altman & Taylor, 1973). With that said, it seems worthwhile to understand status updates as a means for affiliation and focus on content and style patterns which are related to this need. In this respect, individuals might use status updates to feel as part of the community and be able to maintain a connection with weak ties (who are potential strong ties in the future). However, it has been shown that the higher the users' need to belong, the greater their preference for more intimate communication features on SNS such as private messages (Reich & Vorderer, 2012). Therefore, we assume that status updates are not utilized more frequently by users with higher need to belong but, if they decide to post something, their messages are likely to have a more mainstream-oriented style and also involve deeper self-disclosure which can help to initiate and maintain social contacts (Altman & Taylor, 1973).

H4. Need to belong is positively associated with (a) the degree of mass suitability and (b) the depth of self-disclosure in status updates.

3.5. Need for popularity

With regard to the influence of the personality factors mentioned above, Utz et al. (2012) recently argued that – despite several relations – the connections to SNS behavior (in terms of explained variances) were rather low and posited that a variable reflecting the tendency to strive for appearing as social and popular would be a better predictor. Therefore, they introduced the need for popularity based on research on peer pressure among adolescents (Santor, Messervey, & Kusumakar, 2000). People with a high need for popularity try to present themselves as socially connected and are prone to following trends or groups just in order to avoid exclusion. The motivation to appear popular is described as "chronic, but very specific impression management goal" (Utz et al., 2012, p. 38). While being related to narcissism, need for popularity does not include a feeling of superiority but merely the wish to appear socially accepted. In questionnaire studies,

Utz et al. (2012) showed that need for popularity was a significant predictor of the motivation for strategic self-presentation and general frequency of profile editing. Following their line of argumentation, it can be presumed that people who strive for popularity make use of the self-presentational opportunities of status updates, selectively emphasizing positive aspects of their personality or referring to social activities (as signs of popularity) to create the desired impression.

H5. Need for popularity is positively related to (a) the number of posted status updates and (b) the use of self-promotional content.

4. Method

In order to investigate these hypotheses and compare the relative influence of the personality traits that have been identified as predictors of SNS behavior on the usage of status updates, we set-up an online questionnaire in which personality variables and Facebook use were assessed. Participants were asked to post their last three original status updates. While previous studies (Mehdizadeh, 2010; Moore & McElroy, 2012) only included basic categorizations of postings (such as postings about oneself or others), our goal was to assess the content, tone, and self-presentational style of the collected messages. Using a multi-methodological approach, we combined participants' self-reports on personality traits with a content analysis of their status updates.

4.1. Sample

The URL of the online questionnaire was distributed via Facebook groups and online forums at a large European university. It was filled out by 173 participants – one person, who was younger than 18 years, was excluded from further analyses. The remaining sample had a mean age of 25.95 years ($SD = 5.93$). 102 Participants were female, 70 were male. Most of them (88 participants) were students, 64 participants were employed.

4.2. Independent measures

Extraversion was assessed with the NeoFFI scale (Borkenau & Ostendorf, 1993; Costa & McCrae, 1992). It consists of 12 items measured on a five-point scale such as “I like to have a lot of people around me” which were summed to a unidimensional score (Cronbach's $\alpha = .76$; $M = 3.39$; $SD = 0.52$).

To capture participants' narcissism, we used the NPI-16 scale (Ames et al., 2006) in a translated version. For 16 opposing statements, participants had to decide which applies best to their character (e.g., “I know that I am good because everyone keeps telling me so” vs. “When people compliment me I sometimes get embarrassed”). The number of narcissistic responses was counted (Cronbach's $\alpha = .71$; $M = 4.55$; $SD = 3.02$).

The perceived efficacy of self-presentation, the expectation of being able to create positive impressions in (offline) social situations, was assessed with Mielke's self-efficacy scale (1990). Participants rated 12 statements (e.g., “In many situations I am able to stress positive aspects of my personality”) on a five-point scale (Cronbach's $\alpha = .70$; $M = 3.30$; $SD = 0.45$).

Participations' need to belong, their motivation to affiliate with others, was measured with 10 items (Krämer et al., 2013) such as “It bothers me a great deal when I am not included in other people's plans” which were rated on a five-point scale (Cronbach's $\alpha = .73$; $M = 3.58$; $SD = 0.53$).

The need for popularity was assessed with 7 items (e.g., “I have neglected some friends because of what other people might think”) on a seven-point scale (Santor et al., 2000; Utz et al., 2012). They

showed a high internal consistency (Cronbach's $\alpha = .87$) and were averaged ($M = 2.39$; $SD = 1.10$).

4.3. Dependent quantitative measures

With regard to their usage of Facebook, participants were asked to enter their number of friends and the number of status updates they had posted within the last four weeks. Two participants who entered illogical numbers of status updates had to be excluded from the analysis. On average, the participants had 265.93 friends ($SD = 181.69$) and had posted 6.42 status updates ($SD = 9.74$) in the last four weeks.

4.4. Qualitative analysis

Participants were asked to post their last three status updates (as textual messages) in text fields (for reasons of anonymity, they were instructed to replace names of friends that appear in the messages by “XXX”). For the more detailed analysis of the content and style of the status updates, only participants who had revealed status updates were taken into account. This resulted in a sample of 116 participants (72 female, 44 male, age: $M = 25.20$; $SD = 5.30$). Each status update was categorized by five independent coders according to the following scheme. For status updates including non-analyzable content (e.g., a hyperlink of a website which did not exist anymore), a missing value was assigned.

Depth of self-disclosure. Coders evaluated the depth of self-disclosure in each status update using a Likert scale from 1 to 7. Based on conceptualizations by Altman and Taylor (1973) and Cozby (1973), we defined depth as the degree to which private or intimate information is disclosed, ranging from superficial statements, for instance, on the weather, over a medium level with information or opinions that one would share with loose acquaintances to the core layer with personal beliefs or emotions. One example for a status update with deep self-disclosure in the sample is “A cold and a cystitis – misfortune seldom comes alone”. The assessments of the five coders showed acceptable consistencies (Cronbach's α for status update 1 was .79, for the second status update .71 and for the third status update .70) and were averaged for each posting. For the participants who reported three status updates amenable for the analysis, a score representing the depth of self-disclosure was calculated as the mean of the ratings for each posting, showing that the average depth of self-disclosure remained at a medium level ($M = 2.47$; $SD = 0.58$). In order to capture a sufficiently broad pattern of self-presentational behavior (and to minimize the impact of single updates which may be outliers), mean scores were not calculated for participants with less than three analyzable updates.

Self-promoting content. Based on work by Buffardi and Campbell (2008), we assessed the extent to which a posting intends to present positive traits of the sender. Self-promoting messages would include explicit mentioning of successes or positive characteristics (e.g., “I received great compliments and had a fantastic dance. Now I am tired after a long party night:D”), whereas a medium level would promote oneself implicitly (e.g., by referring to exciting social events without direct reference to positive traits). Ratings of the coders were summed up to a mean score (Cronbach's α for the first status update was .74, for the second status update .71 and for the third status update .71; $M = 3.64$; $SD = 0.73$).

Mass suitability. With regard to mass suitability, it was evaluated to what degree the message appears to be acceptable for a huge audience and for different groups (Bazarova et al., 2013). High mass suitability implies that the statements is understandable for everyone (e.g., “Happy new year to everyone!!!”), whereas messages with medium levels are tailored to a more specific group (for instance, asking friends in the same city what to do in the

evening). At the lower end, messages contain “insider” information or statements which are not understandable for most people. Again, ratings of the coders were averaged (Cronbach's α for the first status update was .76, for the second status update .78 and for the third status update .73; $M = 4.32$; $SD = 0.84$).

Disclosure of emotions. Furthermore, coders assessed the degree to which positive and negative emotions (Bazarova et al., 2013) were included in the status updates. Expression of positive emotions (Cronbach's α for status update 1 was .87, for the second status update .86 and for the third status update .88; $M = 2.64$; $SD = 0.87$ /e.g., “...just had a surprise visit of the most fantastic man on earth!!”) and expression of negative emotions (Cronbach's α for status update 1 was .92, for the second status update .91 and for the third status update .92; $M = 1.50$; $SD = 0.69$ /e.g., “Sick and stuck in bed”) were evaluated separately.

Topic. To assess the topical dimension of status updates, we developed a coding scheme which comprised eight categories. These referred to diverse topics such as social life, entertainment or personal issues (see Table 1 for conceptualization of each category and a sample status update). Each status update could be assigned to only one category, thus, in case an update encompassed two or more topics of our scheme, it was assigned to the most dominant category in it. We calculated the intercoder reliability for all five raters using Krippendorff's α (Hayes & Krippendorff, 2007) which reflected an agreement of $\alpha = .65$. For every participant, the numbers of status updates in the specific categories were summed (based on the assessment of the main coder). Since we analyzed a total of three status updates for each participant, these variables ranged from 0 (no status update on this topic) to 3 (all status updates on this topic).

5. Results

The presentation of results is grouped according to the dependent measures, beginning with the quantitative analysis regarding the number of postings. After this, results of the qualitative analysis of the style of status updates (depth of self-disclosure, self-promotional content, mass suitability) and additional analyses regarding the topics of status updates will be presented.

5.1. Quantitative analysis

Table 2 shows the zero-order correlation coefficients between the personality variables and the quantitative measures of

Facebook use. To examine the question of which traits predict the number of status updates a Facebook user has posted, a hierarchical regression analysis was conducted. In the first step, age and gender (dummy-coded) were entered; in the second step, extraversion, narcissism, efficacy of self-presentation, need to belong, and need for popularity were added. Age emerged as a significant predictor ($\beta = .191$, $p = .013$) in the first step ($F(2, 167) = 3.17$, $p = .045$, $R^2 = .037$), indicating that older participants wrote more status updates, while the effect of gender was not significant. The second step significantly added to the explanation of variance ($F(7, 162) = 3.06$, $p = .005$, $R^2 = .117$): Here, narcissism was a significant predictor ($\beta = .260$, $p = .001$), showing that narcissists particularly made use of the possibility to present themselves via status updates (which supports H2a), while the influence of extraversion, self-efficacy, need for popularity, and need to belong was not significant (against expectations of H1a, H3a, and H5a).

5.2. Qualitative analysis

Style of status updates. In order to examine whether the personality traits are related to the style of status updates (depth of self-disclosure, self-promotional content, mass suitability) and test the corresponding hypotheses, we conducted hierarchical regression analyses in the subsample of participants who had entered the content of their status updates. To control for the effects of age and gender, these variables were included in the first step. In the second step, the personality traits which were hypothesized to influence the specific dimension were entered.

H1b, H2b, and H4b predicted that extraversion, narcissism, and need to belong were positively associated with the depth of self-disclosure. Table 3 summarizes the results of the regression analysis. In the final model ($F(5, 82) = 2.45$, $p = .040$, $R^2 = .130$), narcissism as well as need to belong emerged as significant predictors, indicating that people with higher degrees of narcissism and greater need to belong disclosed more intimate information in their updates, which supports H2b and H4b. The effect of extraversion was not significant so that H1b has to be rejected.

For the degree to which the messages contain self-promoting content, we hypothesized positive effects of narcissism (H2c) and need for popularity (H5b). Indeed, the final model of the regression analysis ($F(4, 85) = 2.35$, $p = .061$, $R^2 = .100$) showed that narcissism was a significant predictor (see Table 3), indicating that updates posted by people with higher degrees of narcissism contained more self-promotional content, supporting H2c. The

Table 1
Coding scheme for topics of status updates.

Category	Description	Sample status update
Leisure time activities	Dealing with non-compulsory activities such as sports, shopping, eating, drinking or travelling which are undertaken in leisure time	“Returning from the Netherlands. The sailing week has passed really fast :-(“
Social life/ interpersonal relationships	Referring to activities or issues dealing with friends or family	“I am going to clean up my Facebook friends list and some people will not find themselves there in January”
Entertainment	Updates talking about music, soaps, movies or games, including YouTube links	“#XboxOne, no used games restrictions, no Orwellian sensor device – my bets are on the #PS4”
Societal issues	Dealing with relevant issues in society such as elections, economy, inequalities or environment	“Can anyone recommend a good information source for the mayor's election?”
Work, school or university	Status messages related to events or experiences in work, school or university	“Tomorrow final exam – wish you all good luck!”
Congratulations	Sending congratulations or thanksgivings to others	“Merry Christmas everyone!”
Personal issues	Updates describing personal states, experiences or thoughts	“I am still alive, but my phone is definitely not”
Miscellaneous	Status messages including insider jokes or other allusions which cannot be assigned to the other categories	“I am just saying N. maxibularis”

Note. Most examples are taken from the sample.

Table 2Zero-order correlation coefficients between personality traits and measures of Facebook use ($N = 170$).

	1	2	3	4	5	6	7
1. Number of Facebook friends	–						
2. Number of status updates	.198*	–					
3. Extraversion	.191*	.088	–				
4. Narcissism	.295**	.255**	.087	–			
5. Self-efficacy	.250**	.116	.383**	.346**	–		
6. Need to belong	.020	.038	.453**	.054	.176*	–	
7. Need for popularity	.151	.046	.170*	.164*	.171*	.374**	–

* $p < .05$.** $p < .01$.**Table 3**

Hierarchical multiple regression analysis with depth of self-disclosure, self-promoting content, and mass suitability as criteria and demographic and personality variables as predictors.

Depth of self-disclosure			Self-promotional content			Mass suitability of status updates		
Predictor	β	p	Predictor	β	p	Predictor	β	p
Step 1			Step 1			Step 1		
Age	.061	.573	Age	–.038	.722	Age	.213	.042
Gender	–.067	.536	Gender	–.032	.767	Gender	–.225	.032
Step 2			Step 2			Step 2		
Extraversion	–.050	.683	Narcissism	.209	.048	Self-efficacy	–.299	.005
Narcissism	.268	.013	Need for popularity	.206	.051	Need to belong	.180	.092
Need to belong	.235	.048						
Final R^2	.130		Final R^2	.100		Final R^2	.184	

effect of need for popularity was in the hypothesized direction (H5b) but was slightly beyond the conventional level of significance.

The degree of mass suitability was assumed to be influenced by users' perceived efficacy of self-presentation (H3b) and users' need to belong (H4a). Regression analysis ($F(4,83) = 4.67$, $p = .002$, $R^2 = .184$) showed that self-efficacy was negatively related to the level of mass suitability (see Table 3), suggesting that messages written by people who feel confident in presenting themselves are less tailored to the mass audience, supporting H3b. Need to belong was a positive predictor of mass suitability on the 10% level of significance; however, since this effect is only marginal, it does not provide solid support for H4a. Additionally, older participants and women wrote updates with high levels of mass suitability.

In order to detect potential relationships of depth of self-disclosure, self-promoting content, and mass suitability with the personality traits which were not included in the specific hypotheses, we computed correlation analyses. However, there were no additional significant correlations.

In summary, extraversion was neither related to the number of status updates nor the depth of self-disclosure (H1a and H1b). Instead, narcissism emerged as a strong predictor of status update usage: The findings that narcissism was related to the number of status updates as well as to the depth of self-disclosure and self-promoting content support H2a, b and c.

Perceived self-efficacy did not influence the number of status updates (contrary to H3a) but was negatively related to the mass suitability of postings (supporting H3b). In line with H4b, the need to belong emerged as a significant predictor of depth of self-disclosure but there was no solid support for a positive effect on the level of mass suitability (H4a). Need for popularity did not affect the number of status updates (against expectations of H5a) – with regard to the degree of self-presentational content (H5b), the effect of this personality trait was in the hypothesized direction but slightly beyond the conventional level of significance.

Topics. As an additional analysis, we examined the topics of the posted status updates. The most frequent topics among the analyzed status updates ($N = 332$) were personal issues (26.81%),

followed by social life/interpersonal relationships (18.98%), entertainment (17.47%), congratulations (12.65%), leisure time activities (9.63%), work, school or university (5.72%), miscellaneous (5.12%) and societal issues (3.61%). On an exploratory level, we computed correlation analyses to identify relationships between personality variables and the topics of status updates. Here, results showed negative correlations between the number of status updates that contained congratulations and narcissism ($r = -.243$, $p = .014$), number of status updates about entertainment and extraversion ($r = -.269$, $p = .006$) as well as need to belong ($r = -.230$, $p = .020$) and a positive relationship between the number of status updates on social life and extraversion at the 10% level of significance ($r = .184$, $p = .064$). For the degree to which users disclosed positive and negative emotions, there were no significant correlations.

Focusing on gender effects, t -tests for unrelated samples revealed significant differences with regard to status updates containing personal issues ($t(100) = 2.82$, $p = .006$, $d = .59$), congratulations ($t(98.75) = 3.45$, $p = .001$, $d = .66$) and entertainment ($t(57.14) = -3.45$, $p = .001$, $d = -.73$). Means showed that females more frequently posted status messages involving personal issues ($M = 0.95$, $SD = 0.83$) and congratulations ($M = 0.51$, $SD = 0.67$) than males (personal issues: $M = 0.51$, $SD = 0.64$; congratulations: $M = 0.15$, $SD = 0.37$). However, males more frequently wrote status updates on entertainment ($M = 0.87$, $SD = 0.92$) than females ($M = 0.30$, $SD = 0.59$).

6. Discussion

With the present study, we sought to analyze the way in which people present themselves in status updates within SNS and aimed to explore the relationship between personality traits and the number and style of these messages. In a multi-methodological approach, we combined survey data with a content analysis of status updates posted on Facebook, which enabled us to investigate original text material.

The opportunity to describe personal opinions, experiences, or emotions in a short message which is visible to the whole contact list offers a comfortable venue for selective self-presentation (Walther, 2007) with a potentially large impact – on the other hand, SNS users cannot always tailor their messages to specific receivers since the audience is relatively broad (Bazarova et al., 2013; Krämer & Haferkamp, 2011). The descriptive analysis of the contents show that status messages deal with a wide variety of topics and most frequently with personal issues and social life, in line with the basic idea that status updates contain rich socio-emotional information (Carr et al., 2012). What has been unclear so far, however, is whether the style of these messages is related to users' personality traits.

In our analysis based on the impression management model (Leary & Kowalski, 1990) and individual differences in Internet usage (Amichai-Hamburger & Vinitzky, 2010), narcissism emerged as the most important predictor of the frequency of status updates. Given that people with high levels of narcissism constantly hope for admiration and use relationships to regulate their self-esteem (Campbell & Foster, 2002), SNS – and status updates in particular – offer a perfect arena for them: Status updates can arouse attention and lead to direct forms of positive feedback in “likes” and comments, which may help to confirm the exaggerated but vulnerable self-concepts of narcissists (Ames et al., 2006). With regard to style, updates written by people with stronger manifestations of narcissism involved deeper self-disclosures, which could be interpreted as a strategy to increase attention or recipients' liking of the sender (Cozby, 1973). Furthermore, their updates contained more self-promoting content. This can be seen as an intentional self-presentational strategy as well, but on the other hand, this may also be a (rather unintentional) manifestation of narcissists' inflated self-concept (Morf & Rhodewalt, 2001). With regard to the latter interpretation, presenting too much self-promoting content may also lead to unfavorable evaluations as “show-off”. Since we assessed self-promoting style on the textual level and did not focus on person perceptions formed by observers (see Walther, Van Der Heide, Hamel, & Shulman, 2009), it is an open question whether there is a threshold beyond which self-promoting content does not achieve the goal of creating a positive impression anymore. However, it appears that narcissists' dynamic striving for constant attention partly leads them to riskier self-presentation and offers telling clues about their inflated self-concepts which they possibly do not intend to convey.

Extraversion, however, did not have predictive value for the usage of status updates, which is surprising given that previous studies portrayed extraversion as a crucial personality factor affecting SNS behavior (e.g., Correa et al., 2010; Hollenbaugh & Ferris, 2014). In our sample, extraversion was only related to the number of friends (in line with findings by Moore and McElroy (2012) and Utz et al. (2012)) but neither to the frequency nor the stylistic dimensions of status updates. Since it can be argued that status updates are a more vivid form of SNS usage than sending or answering friend requests (which also frequently represent offline contacts), this result puts the role of extraversion as a predictor for the use of SNS features into question. An explanation could be that extraverts are less driven to use the self-presentational opportunities of status updates (since their social needs are more likely to be fulfilled in offline contacts) or that tendencies for rich-get-richer effects of extraverts (Kraut et al., 2002) and social compensation effects of introverts (Valkenburg & Peter, 2007) cancel each other out. However, it is possible that user's extraversion could be reflected in other stylistic dimensions which were not considered here, for instance breadth of self-disclosure.

The more specific variable of self-efficacy with regard to self-presentation (Bandura, 1977; Mielke, 1990) showed no effects for the number of status updates either but for the style of these

messages in terms of mass suitability: Those who perceive themselves as capable of presenting themselves in social situations showed lower efforts to produce statements which are understandable and acceptable for everyone (Bazarova et al., 2013). This means that people with a high efficacy of self-presentation are less afraid of being misunderstood and therefore take the risk of presenting ambiguous messages which are tailored to specific groups. However, it is possible that these messages generate negative feedback. In this respect, it might be possible that users change their self-presentational strategies, or that users with high levels of self-efficacy do not care about specific reactions and perceive the mere act of posting status messages as gratifying (Deters & Mehl, 2013).

Since the need to belong (Baumeister & Leary, 1995) reflects the motivation to be socially accepted and included (which can be at least partly fulfilled by SNS contacts), we assumed that users with stronger manifestations of this trait try to address more interaction partners and pursue the opposite strategy of presenting messages with high levels of mass suitability. However, results did not show a clear effect for this variable. Instead, need to belong was positively related to the depth of self-disclosure, which can also be seen as an attempt to initiate and maintain contacts (Altman & Taylor, 1973). However, people with a high need to belong do not seem to particularly embrace the opportunities of posting status updates since there was no relation to the amount of posted messages. Given that the focus of belongingness needs lies on stable and intimate relationships (Baumeister & Leary, 1995), they seem to prefer private messages over public postings (Reich & Vorderer, 2012) and mainly focus on other forms of interpersonal communication.

Although the need for popularity – the motivation to appear as socially connected – was recently shown to influence the frequency of profile editing (Utz et al., 2012), we did not find a relation between this variable and the amount of status updates. In this context, it can be questioned whether this variable, which is based on research on peer pressure (Santor et al., 2000), reflects a clearly distinguishable personality trait or rather a specific motivation which is mainly prevalent among adolescents. Despite the finding that messages by people who strive for popularity tended to be more self-promotional, the current results do not support the interpretation that need for popularity is the decisive construct in explaining SNS behavior of adults since particularly narcissism has emerged as a more central personality variable.

It has to be noted, though, that the present study is limited through a sample which mainly consists of students and is not representative of all Facebook users. Furthermore, participants were asked to post their last three original messages into the questionnaire, which led to a drop-out of participants who did not report their messages or entered non-analyzable content. The copy-paste-procedure may have produced a pre-selection of content. This could be solved by asking for access to participants' original Facebook profiles in future studies (for instance, with the help of specific Facebook applications, see Goel, Mason, & Watts, 2010). Additionally, it may be helpful to include more than three status updates and further linguistic analyses (in combination with “big data” techniques and automated content analyses) in order to capture the diverse nature of SNS status updates.

Despite these limitations, we believe that analyzing status updates as a new form of one-to-many communication and central feature of current SNS helps to understand the usage of Facebook and the mechanisms of online self-presentation in greater detail and extends prior research which mainly focused on static features of SNS and self-reported motivations. To our knowledge, this is the first study relating a content analytic approach to self-report measures with regard to these new popular means of self-disclosure. Results showed that differences in the frequency and style of these

messages can be related to users' personality traits: Besides effects of perceived self-efficacy on the mass suitability of such postings and need to belong on depth of disclosures, this is especially true for narcissism which leads to higher numbers of status updates, deeper self-disclosures, and more self-promotional content. First, this underlines that narcissists are keen to use the self-presentational opportunities of SNS, which supports dynamic views of narcissists' self-regulation needs. Second, this trait appears to be manifested in the style of status updates (in terms of self-promotional content), which also suggests that narcissists' inflated self-concepts may be easily detected within SNS. While this analysis focused on the aspect of producing content (in terms of impression construction; Leary & Kowalski, 1990), one further step would be to investigate consequences and situational antecedents of such behavior. One interpretation (or one fear in this context) could be that positive feedback to status updates with self-promotional content increases narcissistic tendencies, which is also discussed in the context of rising levels of narcissism in younger populations (Rosen, Whaling, Rab, Carrier, & Cheever, 2013; Twenge, Konrath, Foster, Campbell, & Bushman, 2008), while it could also be possible that narcissists' exaggerated self-presentations are not as successful as intended and lead to rather unfavorable evaluations. A further reciprocal pattern could occur if Facebook users see that a lot of their friends post positive updates about successes or social events and thereby tend to do the same (if they perceive such a form of self-presentation as positive and desirable), which could be investigated by examining behavior in existing circles of acquaintances under consideration of the specific relationships. Future research should therefore try to address the dynamic interplay of perceiving others' profiles and messages, constructing one's own self-presentational behavior, and interpreting feedback by other users in order to model the phenomenon of SNS usage in its full complexity.

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