The function of self-disclosure on social network sites: not only intimate, but also positive and entertaining self-disclosures increase the feeling of connection

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Abstract

How can social network sites (SNS) foster relationships when most status updates on SNS are mainly entertaining and not very intimate? This finding cannot be explained by classical social psychological theories such as social penetration theory which regard disclosure intimacy as the main driver of relational outcomes. By building on literature on the role of capitalization and humor in relationship formation and maintenance, this paper suggests two alternative paths from public self-disclosure to relational outcomes. Respondents judged the content and relational effects of own and friends’ status updates as well as private conversations. In general, all types of messages were mainly positive and entertaining. The more intimate communication took place in private conversations; here, the classical link between disclosure intimacy and feeling connected still held. However, positive and entertaining self-disclosures also increased the feeling of connection, especially when reading friends’ updates. Interestingly, interaction partners’ responsiveness did not play a significant role, indicating that results from dyadic face-to-face interactions do not hold for public communication on social media. The study contributes to the development of a more differentiated model on the role of self-disclosure on SNS.

Keywords: self-disclosure, intimacy, relationship, entertainment, capitalization, social network sites
1. Introduction

When you log in to Facebook, what type of posts do you usually encounter? Probably updates from friends enjoying meals or drinks, having fun at parties, being on holiday, being proud of their sporty achievements (runners) or sharing funny cartoons and YouTube clips. Several studies showed that users post mainly entertaining and positive status updates (Barash, Duchenaut, Isaacs, & Bellotti, 2010; Utz, 2011). On the other hand, numerous studies found that relationship maintenance is the main motivation for using social network sites (SNS) and that SNS use results in stronger bonds with friends and especially acquaintances (e.g., Ellison, Steinfield, & Lampe, 2007; Valenzuela, Park, & Kee, 2009). Traditionally, disclosure intimacy has been considered as the main driver of relational outcomes (Altman & Taylor, 1973; Collins & Miller, 1994). However, most status updates on SNS are not very intimate (Barash et al., 2010; Utz, 2011). This leaves us with the question of whether social penetration theory also holds for (semi-)public communication on social media and which other theories can help to explain the relational effects of self-disclosure on social media.

The present paper aims to answer these questions by examining not only public self-disclosures, but also self-disclosure in private conversations. Prior SNS research focused almost exclusively on public disclosures (see Bazarova & Choi, 2014; Bazarova, Taft, Choi & Cosley, 2012, for an exception). The present paper provides a comprehensive framework of how private and public messages on SNS can result in positive relational outcomes and simultaneously tests three alternative explanations derived from classic social psychological theories and recent work on the role of humor in relationship maintenance. The first explanation is based on social penetration theory (Altman & Taylor, 1973), but it is argued that this theory mainly holds for private communication, thereby introducing a boundary condition for the effect of intimate self-disclosure. Two additional processes are proposed that can also explain the relational consequences of (semi-)public status updates. Based on research on capitalization effects (Gable & Reis, 2010), it is hypothesized that sharing positive events also increases the feeling of connection. Third, based on recent literature on role of humor in relationship formation and maintenance (Hall, 2013; Treger, Sprecher, & Erber, 2013), it is assumed that entertaining messages also increase the feeling of connection. Additionally, the role of interaction
partner’s responsiveness is examined. Prior studies have focused on only one of the three proposed mechanisms and the latter two have not received attention by social media researchers yet; a major contribution of this paper is that it brings these lines of research together and compares the different mechanisms across different types of messages.

2. Theoretical background

2.1. Self-disclosure: definition and traditional theories

Self-disclosure is defined as the revealing of personal information to another person (Derlega & Chaikin, 1977). Although some researchers treat every form of verbal or nonverbal disclosure as self-disclosure, most scholars consider only the intentional revealing of personal information as self-disclosure (Dindia, 2000; Fisher, 1984). Self-disclosure can vary in breadth and depth. Breadth describes the number of areas that are disclosed (e.g. work, family, political orientation) whereas depth refers to the superficial-personal dimension.

Although self-disclosure is related to well-being, identity and self-worth (Pennebaker & Chung, 2007; Tanis, 2008), its function in relationship building has been the main focus of studies over the past 40 years. According to social penetration theory (Altman & Taylor, 1973), self-disclosure plays an important role in building and maintaining intimate relationships. At the beginning of a relationship, people usually only talk about one or two areas of their life and the conversation remains rather superficial. As a relationship develops further, the breadth and depth of self-disclosure grows. When a relationship deteriorates, levels of self-disclosure usually decrease again. Because self-disclosure signals intimacy and a special bond between two people, it is also highest in dyads and drops rapidly with increasing group size (Solano & Dunnam, 1985).

There is ample evidence for the link between disclosure intimacy and various relational outcomes. According to the meta-analysis by Collins and Miller (1994), (1) we like people more who disclose more, (2) we disclose more to the ones we like and (3) when we disclose more, we like the others to whom we have disclosed more afterwards. Self-disclosure also correlates with trust, intimacy, and interpersonal solidarity (Cozby, 1972; Larzelere & Huston, 1980; Wheeless, 1976).

The effect of disclosure intimacy on relational outcomes has been repeatedly shown in computer-mediated communication (CMC; e.g., Jiang, Bazarova, & Hancock, 2011; Joinson, 2001;
Self-disclosure on SNS. However, these studies have examined dyadic conversations between strangers in a laboratory setting, focusing on anonymous or at best pseudonymous text-based communication. Nowadays, SNS are the predominant communication form for many adolescents and young adults. In the next section, the specific characteristics of SNS and the literature on content and function of self-disclosure on SNS will be reviewed.

2.2. Self-disclosure on SNS

Communication on SNS is different from dyadic interactions between strangers in a laboratory experiment; thus, motivations for and functions of self-disclosure might be different as well. First, communication on SNS is not anonymous but rather “nonymous” (Zhao, Grasmuck, & Martin, 2008). Users have profiles that typically include their profile picture and other pictures, in addition to identifying information such as birth date, place of living, education, occupation and relationship status. Second, SNS are mainly used to stay in touch with friends and family rather than to get in contact with strangers (Ellison, Steinfield, & Lampe, 2011). “Friends” however are broadly defined on SNS and include acquaintances, (former) classmates, colleagues, teachers, celebrities and even strangers (Utz & Schmidt, 2012). Consequently, social contexts that used to be separate are collapsed on social media (Marwick & boyd, 2011). Third, the default communication on SNS is one-to-many, or, as (O’ Sullivan, 2005) calls it, masspersonal communication. When SNS were first introduced, messages were by default visible to every member of the SNS or sometimes even non-members. Meanwhile, status updates by default are shared with all SNS-friends, and even if more fine-grained privacy settings are utilized, updates are still usually shared with a group of people. Next to these public and persistent ways of communicating with larger groups of people, SNS also offer the possibility to engage in private conversations (mail or chat) with other users. This paper compares the content and effects of public and private messages on SNS and examines whether feeling connected is explained by different processes for public vs. private messages.

The first studies on self-disclosure on SNS reported that individuals often disclosed a high amount of public information in their profile fields (e.g., Gross & Acquisti, 2005; Thelwall, 2008; Utz, 2008). However, other research showed that a majority of users had restricted their privacy settings such that profiles were only visible to friends (Utz & Krämer, 2009). Meanwhile, the attention of
researchers has shifted from the rather static profile information to the more dynamic self-disclosure in status updates.

Utz (2011) found that Dutch students reported posting almost exclusively about positive experiences (e.g. holidays, accomplishments), less often about products and political opinions and least often about intimate topics such as feelings. Barash et al. (2010) developed a Facebook app that allowed participants to judge their own and friends’ status updates on various dimensions. Entertaining-boring was the dimension most relevant for the evaluation of friends’ updates, followed by uncool-cool. In general, people perceived the updates by others as positive, i.e. rather entertaining than boring, rather cool than uncool. Bazarova et al. (2013) used automatic content analysis to analyze the linguistic style of status updates, wall posts and private messages and found that the undirected status updates contained less negative emotions than directed messages (private messages and wall-posts). Thus, there is converging evidence from self-reports (Utz, 2011), judgments of others’ status updates (Barash et al., 2010) as well as automated linguistic analyses (Bazarova et al., 2013) that support the notion that users post mainly positive and entertaining, but not very intimate status updates.

On the other hand, virtually every study on the motives for SNS use revealed that maintaining social relationships is the main motivation for SNS use (e.g., Barker, 2009; Ellison et al., 2011; Pempek, Yermolayeva, & Calvert, 2009; Ross et al., 2009). If self-disclosure plays a central role in relationship maintenance (Collins & Miller, 1994), one should expect a higher level of intimate updates. The predictions of social penetration theory seem not to hold in these masspersonal communication environments (O’Sullivan, 2005), thus other mechanisms must play a role. In the next sections, three possible answers to the question of how private and public self-disclosure on SNS can foster relational outcomes are provided. The focus of this paper is on the feeling of connection as a relational outcome because several studies have shown that a more general feeling of connection is a relational outcome reported by many SNS users (Grieve, Indian, Witteveen, Anne Tolan, & Marrington, 2013; Köbler, Riedl, Vetter, Leimeister, & Krcmar, 2010). Such a general measure is also more appropriate for social media because it applies equally to individuals as well as groups, depending on the audience of the message. The first explanation builds on social penetration theory
and assumes that the classic link between disclosure intimacy and relational outcomes still holds on SNS, but has moved to private communication channels, whereas the other two explanations propose different routes to relational outcomes and explain how public status updates can also foster the feeling of connection.

2.3. The social penetration and privacy management explanation

The first explanation argues that social penetration theory still holds. Bearing in mind that disclosure intimacy is much lower in small groups than in dyads (Solano & Dunnam, 1985), it is not surprising that public status updates on Facebook are not very intimate. However, this cannot fully explain why SNS users report higher bonding and maintained capital (Ellison et al., 2007). According to social penetration theory, without intimate communication, there should not be positive relational outcomes. Taking a broader look at private messages and privacy management can help to solve this puzzle. It is argued that there is intimate conversation on SNS, but that the more intimate conversation has moved to private channels. There is evidence that intimate public communication is perceived as less appropriate than intimate private communication, which would help to explain why intimate disclosures would occur more frequently in private (Bazarova, 2012). Moreover, Bazarova and Choi (2014) found higher disclosure intimacy in private messages than in public wall posts in an American sample. As a first step, it was expected to replicate this effect for German Facebook users:

H1: Private messages are more intimate than status updates.

More important, it is argued that the shift of intimate communication into private conversations is a strategic decision, based on privacy concerns and motivations. If moving the intimate communication into private conversations and leaving only relatively superficial and positive content for the status updates reflects a privacy management strategy, it should be driven by privacy concerns. Even if the relationships between privacy concerns and actual behavior are often not very strong (Utz & Krämer, 2009), at least a small to moderate negative correlation between privacy concerns and posting public status updates is expected.

H2: Individuals with higher privacy concerns post less status updates.

On a general level, it has been shown that motives drive the amount, breadth and type of self-disclosure on SNS (Al-Saggaf & Nielsen, 2014; Hollenbaugh & Ferris, 2014). This should also be true
Therefore, different motives should be reported for writing private messages than for writing status updates. Bazarova and Choi (2014) found that relationship maintenance was a main goal for disclosing intimate content in private messages. In their functional model of self-disclosure on SNS (Bazarova & Choi, 2014) they argue that the features of public and private communication channels on SNS trigger certain goals. However, most social psychological theories argue that this process happens in the opposite direction; that motives/goals drive behavior, in this case, the choice of a communication channel on SNS. In line with this reasoning, Smock et al. (2011) found that the motive of having social interaction drove the usage of private messages and chats, whereas the motive of expressive information sharing drove status update posting. Entertaining others (Barash et al., 2010) and strategic self-presentation (Bazarova et al., 2013) have been reported as other important motives for posting status updates, but relationship maintenance never emerged as a main motivation for posting public status updates. The main focus of this paper is not the direction of the relationship between motives/goals and the choice of communication channels, but the relative importance of the relationship maintenance motive in private and public conversations. Based on the reported findings, the following pattern is expected:

**H3:** Relationship maintenance is a more important motive for engaging in private conversations than the motives of sharing, entertainment and self-presentation.

**H4:** Sharing, entertainment and self-presentation are more important motives for writing status updates than relationship maintenance motives.

The publicness of communication is regarded as a boundary condition of social penetration theory. For private messages, the well-established link between disclosure intimacy and relational outcomes should hold. Communication in private messages is mostly directed to one person or a small group, so both processes described in the meta-analysis by Collins and Miller (1994) – disclosing more to the ones we like and liking the ones to whom we have disclosed more – should be highly interwoven. For own status updates, a weaker effect might occur. The intended audience people have in mind when posting on Facebook consists mainly of close friends (Utz & Schmidt, 2012) and disclosing to this group should make people feel more connected to this group. However, privacy
concerns might discourage users from posting very intimate updates, so the effect of intimacy on feeling connected may be attenuated. For public messages written by Facebook friends, only a weak effect of disclosure intimacy is expected because the empirical audience of an update is usually larger and more diverse than the intended audience (Utz & Schmidt, 2012). Thus, an individual might sometimes be in the intended audience of an intimate update and might thus feel connected. However, sometimes the recipient might not have been in the intended audience and thus may consider the intimate update as inappropriate, resulting in decreased liking (Bazarova, 2012).

H5: Intimacy of messages is positively related to feeling connected, but more so for private messages.

2.4. The capitalization explanation

The first explanation assumed that the relationship maintenance processes occur in hidden private messages. However, the seemingly superficial and mostly positive public status updates might also have a relationship maintenance function. Capitalization theory (Gable, Reis, Impett, & Asher, 2004; Langston, 1994) is used as second major theoretical framework in this paper to explain how the public sharing of positive information can increase the feeling of connection. According to the capitalization approach (Gable, Reis, Impett, & Asher, 2004; Langston, 1994), the majority of people share positive events with close others and derive positive relational outcomes from this above and beyond the positive effects caused by the event itself. Gable and Reis (2010) report that positive events in people’s life occur five times more frequently than negative events. The positivity bias in status updates (Reinecke & Trepte, 2014; Utz, 2011) might thus simply reflect this difference in the likelihood of experiencing positive vs. negative events. Whereas the coping and social support literature has mainly focused on the positive effects of sharing negative experiences, capitalization research focuses on the positive effects of sharing positive experiences (Gable & Reis, 2010). Positive experiences of course have direct effects on positive affect and well-being. The basic assumption of capitalization research is that there are additional positive effects of sharing positive experiences. Sharing positive experiences not only increases the positive affect associated with the positive event, but also strengthens the relationship with the interaction partner (see Gable & Reis, 2010, for a
comprehensive overview). As will be discussed below, the responsiveness of the partner also plays an important role.

Although the effects of capitalization have mainly been studied in private dyadic interactions, it could be argued that sharing positive events on one’s Facebook timeline also has positive effects. Steijn and Schouten (2013) found that SNS use more often led to increased liking and trust (as opposed to decreased liking and trust), especially for weaker ties. More important, users attributed these changes mainly to the public status updates of their SNS friends, and less so to private messages. Positivity of the status updates was not measured in this study, but building on the finding that most status updates are positive (Barash et al., 2010; Bazarova et al., 2013; Utz, 2011) it can be assumed that the majority of these updates were positive as well. Moreover, Park, Jin, and Annie Jin (2011) found that disclosure positivity on Facebook increased intimacy. Thus, there is preliminary evidence suggesting that the positivity of public self-disclosure on SNS might also increase the feeling of connection, although this link has been assessed on a general level in prior research and not on the message-level as usually the case in capitalization research. Thus, the next hypothesis is:

H6: Positivity of messages is positively related to feeling connected.

2.5. The humor explanation

The third explanation builds on recent research on the role of humor in relationship formation (Treger et al., 2013). Interaction partners who used humor were liked more, and participants used more humor when they liked their interaction partner. Enjoyment and reciprocal liking mediated the effect. Similar findings are reported by Hall (2013) for the effect of humor on relationship satisfaction in long-term relationships. This effect has only been demonstrated for dyadic relationships so far, but similar processes could explain why people feel more connected to their Facebook friends who post entertaining status updates. If friends make us laugh, we might assume that they care about us, and this might further foster the connection. Feeling entertained by the same jokes, cartoons or movies indicates a shared sense of humor which might increase perceived similarity, a central predictor of interpersonal attraction (Byrne, 1969).

H7: Entertainment value of messages is positively related to feeling connected.

2.6. The role of partner responsiveness
Until now, this paper has focused on the content of self-disclosure (intimacy, positivity and entertainment value) but neglected the reactions of the interaction partner(s). However, partner responsiveness plays a major role in several psychological models. When it comes to the effects of intimate self-disclosure, Reis and Shaver (1988) assume in their interpersonal process model of intimacy that the development of intimate relationships is a dynamic process. First, an individual discloses intimate information, then receives reactions from the interaction partner and, most important, interprets these reactions as understanding and caring. This model has received empirical support, for example from Laurenceau, Barrett, and Pietromonaco (1998) who demonstrated that perceived partner responsiveness mediates the effects of self-disclosure and partner disclosure on intimacy. Partner responsiveness is also regarded as an important factor in the domain of capitalization studies (see Gable & Reis, 2010, for a review). Capitalization attempts alone are not the only factor leading to positive relational outcomes, for instance, the perception of enthusiastic and constructive reactions from the interaction partner also matter (Gable et al., 2004).

There is initial evidence that responsiveness also matters on SNS. Forest and Wood (2012) reported that people with low self-esteem profit less from SNS use than people with high self-esteem because they post more negative updates and consequently receive fewer positive reactions. With regard to the effects of SNS use on self-esteem and well-being, Valkenburg, Peter, and Schouten (2006) demonstrated that the received (positive) feedback on SNS plays a mediating role. Lee, Noh, and Koo (2013) also found that self-disclosure on SNS resulted in higher levels of social support that in turn increased well-being. Greitemeyer, Mügge, and Bollermann (2014) argued that having responsive Facebook friends as opposed to the number of Facebook friends affects psychological outcomes. According to this line of research, the effects of public self-disclosure on feeling connected are mediated by the received likes and comments, indicating that partner and (SNS) friends’ responsiveness plays an important role also on SNS.

However, there is also research indicating direct effects of SNS self-disclosure on relational outcomes, independent from the number of received likes or comments. Große Deters and Mehl (2013) asked one group of participants to post more status updates than usually do for one week. Loneliness was assessed before and after the experiment. Participants who increased their posting
behavior (as compared to those in a control condition) reported significantly lower loneliness after the experiment. However, this effect was not influenced by the number of comments and likes received. Liu and Brown (2014) conducted a study on Renren, a Chinese SNS, and report direct effects of self-disclosure on bridging capital (e.g., the weaker ties with acquaintances) and indirect effects of self-disclosure, mediated by positive feedback, on bonding capital (e.g., close ties with friends).

Another reason for these mixed findings might be that prior research often did not examine more complex types of reactions, especially when larger audiences were involved. Studies on the interpersonal process model of intimacy (Reis & Shaver, 1988) and the effects of capitalization (Gable & Reis, 2010) were usually conducted in dyadic settings, focusing on the reaction of one interaction partner. On SNS, the audience is larger and more diverse and can be distinguished in the potential (all people who can see an update), the intended and the empirical audience (Utz & Schmidt, 2012). The empirical audience is formed by the people that have actually read the post. Two types of mismatch are possible: When members of the intended audience are not members of the empirical audience (not enough attention) and when members of the empirical audience are not members of the intended audience (too much attention). Utz and Schmidt (2012) found that both types of mismatch occurred. They did not assess the consequences of this mismatch, but it could be that unexpected likes and comments have negative effects. However, it could also be that people are positively surprised when a weak tie reacts unexpectedly to a post. Because prior research is inclusive about the exact effects and looked only at the total number of likes and comments, the present research will differentiate between expected and unexpected likes and comments and poses an exploratory research question:

RQ: How are expected and unexpected likes and comments related to the feeling of connection?

3. Method

3.1. Respondents, design and research site

One hundred fifty-one students from a German university partially completed a rather lengthy online survey (mean completion time 57 minutes) on their Facebook use; 60 (35 females, 21 males, 4 did not disclose; mean age = 22 years) fully completed the questionnaire. Type of message (own status
Self-disclosure on SNS

updates; private conversations; friends’ status updates) was a within-subjects factor. Participants were recruited from the participant pool and received an Amazon voucher of 15,- EUR when they completed the survey. The study was conducted in July 2013. Because Facebook regularly changes its features and rolls them out country by country, it is important to describe the features at the time of the study. In July 2013, the timeline was already established in Germany. The formerly separate features of asynchronous private messages and synchronous chat were merged and displayed in the “messages” section of the profile. The graph search was being rolled out at the time of study, but it was only available for German users who used English language settings.

3.2. Procedure

Respondents received the link to the online study via email. After the informed consent, they answered some general questions on their Facebook use and then judged various Facebook messages (see below). At the end, personality variables, age and gender were assessed.

Participants were asked to go back one day in their timeline and messages tab, respectively, and to rate their own seven most recent status updates (self-posted), their seven most recent private messages and the seven most recent status updates written by their Facebook friends. Respondents were asked to start with an update/message from the day before (or older if they hadn’t written an update/private message the day before) because the number of likes and comments received (for status updates) was also assessed, and more recent updates might continue to receive likes and comments.

To ensure participants’ privacy, they were not required to paste the actual updates/messages into the survey. However, if they wanted, they could do so. For the private messages, they had the opportunity to enter a keyword characterizing the conversation if it helped them to judge the private conversation.

3.3. Measures

Facebook use. Duration of Facebook membership, number of Facebook friends, motivations for Facebook use and feature use were assessed. Three factors emerged from the twelve motivation items which were partly based on (Smock, Ellison, Lampe, & Wohn, 2011). Respondents used Facebook predominantly for social purposes (e.g. “to stay in touch with family and friends”, α = .76, M = 6.03, SD = 0.82; 7-point scales, ranging from “does not apply at all” to “does fully apply”).
followed by habitual use (e.g., “because everybody does”, $\alpha = .76$, $M = 3.37$, $SD = 1.14$), and information exchange (e.g., “to share information about me and my interests”, $\alpha = .74$, $M = 3.19$, $SD = 1.37$). The feature use items were also slightly adapted from Smock et al. (2011). The Facebook groups feature was excluded and using the like button was added as an item. Thus, respondents indicated how often they read the newsfeed, wrote status updates, engaged in private conversation, used the like button and wrote comments. The scale ranged from 1 = “several times a day” to 6 = “less than once a month”. Items were later recoded so that higher values indicate higher feature use.

**Privacy concerns.** Privacy concerns were measured with ten items, based on Utz and Krämer (2009) and supplemented by some new items covering the misuse of data by companies. An exploratory factor analyses revealed two scales. The first covered the intention to control information on the internet (e.g., “I like to have control over who can see my Facebook posts”, $\alpha = .86$, $M = 5.32$, $SD = 1.40$), the second factor covered fear of misuse (e.g., “Compared to others, I worry more about how companies handle my data”, $\alpha = .86$, $M = 4.17$, $SD = 1.48$).

**Content of the messages.** Respondents judged each update on 5-point semantic differentials. The items were partly taken from Barash et al. (2010) and supplemented by items covering positivity and intimacy. Positivity of the posts was measured by the two items “negative-positive” and “sad-happy” ($\alpha = .77$, $M = 3.97$, $SD = 0.93$); intimacy was measured by “general-personal” and “superficial-intimate” ($\alpha = .72$, $M = 3.17$, $SD = 1.05$), and entertainment was measured by the two items “boring-entertaining” and “uncool-cool” ($\alpha = .77$, $M = 3.61$, $SD = 0.91$).

**Motives.** For each of the 21 Facebook messagesUpdates, respondents rated their own motives (for own updates and private messages) or their perceptions of the senders’ motives (for friends’ updates), respectively. Sharing (“sharing events from my life” for own updates), relationship maintenance (“maintain friendships”), entertainment (“entertain others”) and self-presentation (“present myself”) were measured with one item each. Answers were given on 7-point scales, ranging from “does not apply at all” to “does fully apply”.

**Feedback.** For own status updates, respondents were asked to indicate the number of received likes ($M = 9.25$, $SD = 12.79$) and comments ($M = 3.89$, $SD = 9.95$). In case of own status updates, respondents further indicated how many out of these likes they had expected ($M = 6.32$, $SD = 9.65$),
how many were unexpected, but surprised them positively (M = 2.44, SD = 4.72) and how many were unexpected, but surprised them negatively (M = 0.49, SD = 2.10). Additionally, they should indicate from how many people they had expected but not received a like (M = 3.19, SD = 17.83). The same questions were asked for the comments (M = 2.75, SD = 7.35 for received and expected comment, M = 0.85, SD = 2.46, for unexpected positive comments, M = 0.28, SD = 2.69, for unexpected negative comments and M = 2.32, SD = 17.70). In case of friends’ status updates, respondents indicated the number of likes (M = 26.34, SD = 106.77) and comments (M = 5.92, SD = 21.63) the update had received and whether they themselves had liked the update or written a comment. The latter two measures are a proxy for prior closeness because SNS users are more likely to react to close friends than acquaintances (Utz, 2011).

**Feeling of connection.** Respondents indicated for each message whether they felt connected with their conversation partners. The question was prompted with the words “How would you describe the effect of…” to make sure that the focus is on the effects of the message and not the pre-existing closeness with the conversation partner. Answers were given on 5-point scales ranging from “does not apply at all” to “does fully apply”.

**Additional measures.** The survey also contained some personality scales not relevant to the hypotheses and questions of the present paper.

### 4. Results

#### 4.1. Preliminary analyses

Due to the long completion time and the repetitive nature of the survey, many participants dropped out. To be able to calculate within-subject comparisons across the three types of message, only data from the 60 respondents who completed the whole questionnaire were used for the hypotheses tests. However, to check for systematic drop-outs, the means of feature use and general motivations for Facebook use (assessed in the beginning of the survey) and the ratings of the first three status updates were compared. Although the people who completed the survey scored slightly higher on all items, there were no significant multivariate effects for the five feature use items, $F(5,145) = 1.81, ns$, the three motivations, $F(3,144) = 1.09, ns$, or the first three status updates, $F < 1$.

**Descriptive results**
As found repeatedly in other studies, relationship maintenance was the primary motive for using SNS ($M = 6.03, SD = 0.82$), followed by habitual use ($M = 3.37, SD = 1.14$), and information exchange ($M = 3.19, SD = 1.37$). $F(2,118) = 131.01, \eta_p^2 = .83, p < .001$. In general, writing private messages and reading the newsfeed (daily/several times a day) were the most popular activities, followed by clicking the like button (several times a week). Writing comments was significantly less popular (1-2 times per week) and posting status updates was the least frequent activity (several times a month). This is a first piece of evidence suggesting that public status updates are not the main driver of relational outcomes on SNS; much of the communication on Facebook is actually hidden and takes place in private conversations.

4.2. Hypotheses tests

**Content.** To test the hypothesis that private messages are more intimate than status updates (H1), a 3 (type of message: own update, private conversation, friends’ updates) x 3 (content: intimate, positive, entertaining) x 7 (item) analysis of variance with repeated measurements on all three factors was conducted. This analysis revealed a significant main effect of type of message, $F(2,118) = 5.78, p < .01, \eta_p^2 = .16$, and a main effect of content, $F(2,118) = 80.04, p < .001, \eta_p^2 = .58$ that were qualified by a significant interaction effect between type of message and content, $F(4,236) = 8.40, p < .001, \eta_p^2 = .13$. The main effect of content indicated that all messages were evaluated as significantly more positive ($M = 3.94$) than entertaining ($M = 3.59$) and intimate ($M = 3.18$), $p < .001$, Bonferroni corrected (used for all other pairwise comparisons in the paper). As can be seen in Table 1, row 1, private conversations were rated as more intimate than own and friends’ status updates, $p < .05$. A theoretically less interesting interaction between content x item, $F(12,708) = 2.12, p < .05, \eta_p^2 = .02$ showed that the basic pattern was somewhat less pronounced for the last message. No other effects were significant, all $Fs < 1.08$.

**Privacy concerns.** In line with H2, privacy concerns correlated negatively with the frequency of posting status updates, $r(60) = -.35, p < .01$, for the control subscale, and $r(60) = -.25, p < .10$, for the fear of misuse subscale.

**Motives.** A 3 (type of message: own update, private conversation, friends’ updates) x 4 (motive: sharing, relationship maintenance, entertainment, self-presentation) x 7 (item) analysis of
variance with repeated measurements on all three factors revealed a significant main effect of type of message, $F(2, 118) = 14.33, p < .001, \eta_p^2 = .20$, a main effect of motive, $F(3, 177) = 14.97, p < .001, \eta_p^2 = .20$, and a significant interaction effect between type of message and motive, $F(6, 354) = 36.76, p < .001, \eta_p^2 = .38$. No effect involving item was significant, all $Fs < 1.35$. Table 2 displays the interaction effect between message and motive. For private messages, as predicted by H3, relationship maintenance was by far the most important motivation, followed by sharing, entertainment and self-presentation. For own and friends’ status updates, the differences between the motivations were somewhat less pronounced. However, in line with H4, relationship maintenance (for status updates) was the least important motive. Instead, sharing and entertainment turned out as most important motives. There was also a self-serving bias for the self-presentation motive: Respondents assumed that their friends aimed to present themselves in a favorable way when posting status updates but claimed that they themselves would not engage in these impression management tactics.

**Underlying processes.** Hierarchical linear modeling (software package MPlus) was used to control for potential nonindependence of residuals stemming from multiple ratings per participant. The messages and their evaluations served as the central level of analysis ($n = 1260$ in total, 420 of each type). The null models for feeling of connection revealed intraclass correlations of .37, .14, and .49 for own updates, private messages and friends’ updates, respectively, indicating that hierarchical modeling is indeed the more appropriate strategy of analysis.

First, the random intercept model with the three content dimensions of intimacy, entertainment and positivity as predictors (group-centered) and feeling of connection as the outcome variable was calculated for each of the three types of messages (Exploratory tests with a random slopes model showed that the slope coefficients were not significant). In the next step, analyses controlling for interaction partner responsiveness will be presented.

Predicting feeling connected by the intimacy of messages showed a consistent effect of disclosure intimacy. As can be seen in Table 3, second row, the effect of intimacy was strongest in case of private messages. An increase of 1 unit of the intimacy of the private conversations increased the feeling of connection by .38 ($p < .001$), but only by .26 ($p < .001$) in the case of own status updates. Reading intimate status updates by others resulted only in a small increase of the feeling of
connectedness (.11, p < .05). H5 is therefore supported: Intimacy of updates is related to the feeling of connectedness, and this effect is strongest in case of private messages.

H6 predicted an effect of disclosure positivity. As can be seen in Table 3, third row, effects of disclosure positivity were found for private conversations (.19, p < .05) and friends’ updates (.17, p < .01), but not for own updates (.05, ns). H6 is thus only partially supported.

In line with H7, entertaining self-disclosures were related to a higher feeling of connection in case of own updates (.14, p < .05), but even more so private messages (.21, p < .05) and friends’ updates (.22, p < .01; Table 3, row 4).

**Role of partner responsiveness.** For own status updates, the fine-grained categorization of different types of likes and comments were included as predictors. As can be seen in Table 4, the effects of the likes and comments were rather small and at best marginally significant. The number of expected, but not received likes slightly decreased the feelings of connection, whereas both expected and received and expected and not received comments increased the feeling of connection. The effect of intimacy decreased to .18, but was still significant, whereas the effect of entertaining updates (.14) became marginally significant. However, this model did not have a better fit as indicated by the larger BIC value (first model, sample adjusted BIC 1275.73; with likes and comments 1289.83).

For friends’ updates, responsiveness was assessed by the total number of likes and comments received and whether the participant liked or commented on the update. The results are displayed in Table 5. Not surprisingly, respondents who liked the update reported a higher feeling of connection. More important, the effects of positive and entertaining updates still held, but the effect of intimacy became marginally significant, indicating that intimate updates are less effective in increasing closeness when they come from a more distant Facebook friend. An additional like given by a friend of the target decreased the feeling of connection by .001. Controlling for responsiveness increased the fit of the model as indicated by the smaller sample corrected BIC score (first model 1233.20; with likes and comments 1216.41).

Taken together, the effect of intimacy was significant for own updates and private messages, but only marginally for friends’ updates once controlling for responsiveness. This is in line with H5 which predicted the strongest intimacy effects for private messages. The effect of positive updates
predicted by H6 was found for private messages and friends’ updates. The effect of entertainment predicted in H8 was consistently found across all three types of messages. The data show no clear effects of interaction partner responsiveness.

5. Discussion

This paper examined the puzzling question of how positive and entertaining, but low intimacy disclosures on SNS can create a feeling of connection. Social penetration theory, capitalization theory and recent work on the role of humor were used as a theoretical framework to explain the differential effects of intimate, positive, and/or entertaining disclosures on feeling connected. Prior research was extended by contrasting public status updates and private conversations. The results showed that predictions in line with social penetration theory held for private conversations. Here, a clear link between disclosure intimacy and feeling connected was found. Second, in line with capitalization research, a link between disclosure positivity and feeling connected occurred for private conversations and friends’ status updates. Third, a link between disclosure entertainment value and feeling connected emerged consistently across all three types of messages.

With regard to the content of messages, the results replicated and extended earlier findings on the positivity bias on Facebook (Barash et al., 2010): Status updates and also private conversations were on average primarily positive, entertaining and at the same time not very intimate. Although relationship maintenance was the main motivation for Facebook use in general, a closer look revealed that it was only the main motive for engaging in private conversations. Moreover, respondents engaged much more frequently in private conversations than in writing status updates. These results indicate that there is a hidden side of Facebook, which has not received much attention yet but deserves more attention.

5.1. Theoretical implications

The results of this study have several theoretical implications. First, they show a boundary condition of social penetration theory (Altman & Taylor, 1973). The well-established findings on the role of disclosure intimacy in relationship building and maintenance only partly hold when it comes to public communication within larger groups. For private conversations, the classic link between disclosure intimacy and relational outcomes (Altman & Taylor, 1973) held. For public
Self-disclosure on SNS

communication, intimacy of own status updates (liking the ones more to whom we disclose) rather than intimacy of friends’ status updates (liking the ones more who disclose to us) predicted the feeling of connection. This could be explained by the asymmetry between the perspectives of sender vs. receiver in one-to-many communication on social media. Although SNS users often post to all SNS friends or a large group of these friends, they usually have a smaller group of closer friends in mind when posting (intended audience; Utz & Schmidt, 2012). Posting relatively intimate content might render the intended rather than the potential audience salient and increase the feeling of connection with this smaller and closer group. In contrast, due to the collapsed contexts on social media, people might not see every intended post from one of their SNS friends and alternatively, they might see a post that was not specifically intended for them. Thus, the complex nature of these SNS audiences may influence how people perceive posts, (i.e., a rather intimate status update from a vague acquaintance might be perceived as inappropriate rather than signaling concern for the relationship). Along these lines, Bazarova (2012) showed experimentally that intimate public updates (vs. private) are perceived as inappropriate and leads to decreased liking for the poster. The present study involving the actual Facebook friends of respondents did not replicate this negative effect. Instead, the effect of intimacy became nonsignificant (but not negative) when liking the update, a proxy of closeness, was included in the analysis. Thus, the results indicate that public intimate updates of others can, but do not necessarily, increase the feeling of connection, and that the effect depends on pre-existing closeness. Future research should directly assess the attributions people make when reading status updates and control explicitly for prior closeness to the sender.

Second, the results contribute to the field of capitalization. In line with assumptions from capitalization research, disclosure positivity increased the feeling of connection, particularly for private messages. Interestingly, sharing positive news in own updates did not increase relational outcomes. This indicates that capitalization might be a dyadic or small group phenomenon that does not generalize to larger audiences. Prior research focused mainly on the romantic partner or another very close person; sharing with a more distant group might increase the positive affect stemming from the event itself, but not strengthen the bond with the whole group receiving the update. The results thus show an important boundary condition of capitalization effects. Capitalization research usually
Self-disclosure on SNS

focused on the sender of good news. In the present study, receiver effects were found; people felt more connected to Facebook friends sharing positive news. This effect held even when controlling for likes/comments given – a proxy for pre-existing closeness with the friend. At least among students, there is a strong positivity norm for posts on Facebook (Barash, Duchenua, Isaacs, & Bellotti, 2010; Bryant & Marmo, 2012). A sender who adheres to this norm and does not bother the reader with negative news is obviously perceived as more likeable. Capitalization studies in dyadic settings should pay more attention to the effects on the receiver; this would help to clarify whether positive sharing is the norm on social media or whether there are more general effects of receiving positive news from friends and acquaintances.

Third and most important, this study discovered a link between entertainment and feeling connected. This link emerged across all three types of messages and held when controlling for received or given likes and comments. Like the effects of positivity, the effects for entertainment were stronger for private messages and friends’ updates. The finding for private messages is in line with recent work on the role of humor in relationship building in dyads (Hall 2013; Treger et al., 2013). The entertainment – feeling connected link for public self-disclosure on social media has not been demonstrated earlier. Barash et al. (2010) already showed that entertainment is a central dimension describing the content of status updates, but the present study shows that it also fulfills a major function beyond entertaining one’s audience – it creates a feeling of connection. The present study did not examine whether this is merely driven by the enjoyment of the interaction (Hall, 2013; Treger et al., 2013) or perceived similarity with the Facebook friend (Byrne, 1969), but the fact that the effect is stronger for updates received by others might indicate that it is the perceived similarity in humor that shows effects above and beyond the enjoyment of the interaction.

Fourth, this study contributes to the question of the role of interaction partner responsiveness. The interpersonal process model of intimacy (Reis & Shaver, 1988) and capitalization studies (Gable & Reis, 2010) both assume that partner responsiveness plays a vital role in building relational closeness. These studies have usually examined dyadic and/or face-to-face interactions. Prior research on SNS has revealed inconsistent results. Whereas some authors argued that self-disclosure has only indirect effects and that it is the received feedback that increases a feeling of connection (Forest &
Wood, 2012; Lee et al., 2013), others found no mediating effect of responsiveness as indicated by the number of likes and comments (Große Deters & Mehl, 2013). The present study, which examined reactions on the message-level, found only marginal and weak effects of the number of received likes and comments; the results point therefore to a direct effect. There is tentative evidence that not receiving expected likes might lower the feeling of connection with the audience. Interestingly, in the case of comments, not receiving expected comments had a positive effect on the feeling of connection. It could be that respondents expected critical reactions on their intimate disclosures. Although these results should be treated with caution because they were marginally significant, they present an interesting perspective for future research. Research on cyberostracism on SNS has shown that not receiving likes and comments is detrimental for well-being and mood (Tobin, Vanman, Verreynne, & Saeri, 2014; Wolf et al., 2014), but this line of research has not been integrated with research on relationship maintenance yet.

5.2. Limitations and strengths

Before closing, some limitations should also be acknowledged. The length of the questionnaire resulted in a substantial drop-out. On average, it took participants one hour to assess the content, motives, and effects of the 21 messages and to complete the additional questions. However, there were no significant differences in feature use and general motives for Facebook use. Nevertheless, the results might generalize to very active Facebook users. To receive enough variability and a representative sample of updates, it was necessary to let participants judge several messages of each category. This tedious procedure was chosen over friending a researcher account because it is the only way to get information about status updates posted to a subset of friends and private conversations without violating the privacy of the respondents or stimulating self-censoring in posting behavior. Another limitation is that only self-reported ratings were used which might result in common method variance. Different answer formats (e.g., semantic differential, likert scales, entering numbers) were used and data collection was anonymous to reduce potential biases. The main interest are the perceived effects of private and public communication on Facebook; therefore, the feeling of connection had to be assessed by self-report scales. Coders could have been used to judge public status updates but it would be difficult (and in some cases impossible) to correctly code polysemy or
interpret inside jokes. Moreover, it would be unethical and would violate the privacy of participants to give private messages to independent coders. Therefore, self-reports were used for the evaluation of message content. The positivity bias was also reported in studies using external coders or linguistic analyses, so it seems unlikely that the self-reported measures are heavily biased. The results clearly showed that private conversations are currently the most frequently used feature of Facebook, at least among German students. Examining private conversations and the hidden part of Facebook is therefore a strength of the study because it provides a more comprehensive picture of Facebook use and its effects. The generalizability of these findings to other cultures is limited because the study was conducted in Germany. Germans are often more concerned about their privacy than for example Americans and have stricter privacy laws (Krasnova & Veltri, 2010). A general limitation that applies to all studies on SNS is that these environments change so quickly – new features are introduced on a regular basis, and users adapt to new features as well as changes in usage norms. The present study can therefore only provide a snapshot of SNS usage and potential effects.

5.3. Conclusion

This paper answered the question of why we feel connected to our friends when we read about their positive experiences or receive funny cartoons or YouTube videos. It is shown that on SNS, an environment where the boundaries between private and public communication are blurring and social contexts collapse, not only intimate, but also entertaining and positive self-disclosures increase the feeling of connection. We like the ones to whom we have disclosed, but we do not necessarily like the ones who disclose intimate content to us more. However, we do like the ones who publicly share positive news with us and make us laugh.
.References


Utz, S., & Krämer, N. (2009). The privacy paradox on social network sites revisited: The role of individual characteristics and group norms. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace.*


http://dx.doi.org/10.1016/j.chb.2008.02.012
Table 1. Content as a function of message type

<table>
<thead>
<tr>
<th></th>
<th>own updates</th>
<th>private messages</th>
<th>friends’ updates</th>
</tr>
</thead>
<tbody>
<tr>
<td>intimate</td>
<td>3.11&lt;sub&gt;a&lt;/sub&gt;</td>
<td>3.30&lt;sub&gt;b&lt;/sub&gt;</td>
<td>3.12&lt;sub&gt;a&lt;/sub&gt;</td>
</tr>
<tr>
<td>positive</td>
<td>4.10&lt;sub&gt;a&lt;/sub&gt;</td>
<td>3.90&lt;sub&gt;b&lt;/sub&gt;</td>
<td>3.84&lt;sub&gt;b&lt;/sub&gt;</td>
</tr>
<tr>
<td>entertaining</td>
<td>3.76&lt;sub&gt;a&lt;/sub&gt;</td>
<td>3.52&lt;sub&gt;b&lt;/sub&gt;</td>
<td>3.50&lt;sub&gt;b&lt;/sub&gt;</td>
</tr>
</tbody>
</table>

Note: Answers were given on 5-point semantic differentials. Means not sharing a subscript within rows differ from each other significantly at p < .05, one-sided. All differences within columns are significant at p < .01, Bonferroni adjusted comparisons.
Table 2. Motives for self-disclosure as a function of message type

<table>
<thead>
<tr>
<th></th>
<th>own updates</th>
<th>private messages</th>
<th>friends’ updates</th>
</tr>
</thead>
<tbody>
<tr>
<td>sharing</td>
<td>4.71&lt;sub&gt;a&lt;/sub&gt;</td>
<td>4.05&lt;sub&gt;b&lt;/sub&gt;</td>
<td>4.68&lt;sub&gt;a&lt;/sub&gt;</td>
</tr>
<tr>
<td>relationship maintenance</td>
<td>3.66&lt;sub&gt;b&lt;/sub&gt;</td>
<td>4.87&lt;sub&gt;c&lt;/sub&gt;</td>
<td>3.85&lt;sub&gt;b&lt;/sub&gt;</td>
</tr>
<tr>
<td>entertainment</td>
<td>4.32&lt;sub&gt;a&lt;/sub&gt;</td>
<td>3.43&lt;sub&gt;d&lt;/sub&gt;</td>
<td>4.65&lt;sub&gt;a&lt;/sub&gt;</td>
</tr>
<tr>
<td>self-presentation</td>
<td>3.83&lt;sub&gt;b&lt;/sub&gt;</td>
<td>2.81&lt;sub&gt;e&lt;/sub&gt;</td>
<td>4.45&lt;sub&gt;a&lt;/sub&gt;</td>
</tr>
</tbody>
</table>

Note: Answers were given on 7-point scales ranging from “does not apply at all” to “does fully apply.” Means not sharing a subscript within columns differ from each other significantly at p < .05 for own updates and p < .01 for private messages and friends’ updates; means not sharing a subscript within rows differ from each other significantly at p < .01; Bonferroni adjusted comparisons.
Table 3. The effects of intimacy, positivity and entertainment value of different types of messages on the feeling of connection

<table>
<thead>
<tr>
<th></th>
<th>own updates</th>
<th>private messages</th>
<th>friends’ updates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B (SE B)</td>
<td>B (SE B)</td>
<td>B (SE B)</td>
</tr>
<tr>
<td>intercept</td>
<td>3.18 (0.11)**</td>
<td>3.72 (0.08)**</td>
<td>2.78 (0.13)**</td>
</tr>
<tr>
<td>intimate</td>
<td>0.26 (0.06)**</td>
<td>0.38 (0.06)**</td>
<td>0.11 (0.05)*</td>
</tr>
<tr>
<td>positive</td>
<td>0.05 (0.03)</td>
<td>0.19 (0.09)*</td>
<td>0.17 (0.07)**</td>
</tr>
<tr>
<td>entertaining</td>
<td>0.14 (0.07)*</td>
<td>0.21 (0.08)*</td>
<td>0.22 (0.06)**</td>
</tr>
</tbody>
</table>

Note. * p < .05, ** p < .01, *** p < .001
Table 4. The effects of intimacy, positivity and entertainment value of own status updates on the feeling of connection, controlling for interaction partner responsiveness

<table>
<thead>
<tr>
<th></th>
<th>B (SE B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>intercept</td>
<td>3.17 (0.11)***</td>
</tr>
<tr>
<td>intimate</td>
<td>0.18 (0.06)***</td>
</tr>
<tr>
<td>positive</td>
<td>0.03 (0.07)</td>
</tr>
<tr>
<td>entertaining</td>
<td>0.14 (0.07)</td>
</tr>
<tr>
<td>expected likes</td>
<td>0.01 (0.01)</td>
</tr>
<tr>
<td>unexpected likes, positively surprised</td>
<td>-0.01 (0.01)</td>
</tr>
<tr>
<td>unexpected likes, negatively surprised</td>
<td>0.01 (0.03)</td>
</tr>
<tr>
<td>expected likes, not received</td>
<td>-0.04 (0.02)Φ</td>
</tr>
<tr>
<td>expected comments</td>
<td>0.02 (0.01)</td>
</tr>
<tr>
<td>unexpected comments, positively surprised</td>
<td>-0.04 (0.03)</td>
</tr>
<tr>
<td>unexpected comments, negatively surprised</td>
<td>-0.01 (0.02)</td>
</tr>
<tr>
<td>expected comments, not received</td>
<td>0.03 (0.02) Φ</td>
</tr>
</tbody>
</table>

Note. Φ p < .10, * p < .05, ** p < .01, *** p < .001
Table 5. The effects of intimacy, positivity and entertainment value of friends’ status updates on the feeling of connection, controlling for interaction partner responsiveness

<table>
<thead>
<tr>
<th></th>
<th>B (SE B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>intercept</td>
<td>2.78 (0.13)***</td>
</tr>
<tr>
<td>intimate</td>
<td>0.09 (0.05)</td>
</tr>
<tr>
<td>positive</td>
<td>0.18 (0.06)**</td>
</tr>
<tr>
<td>entertaining</td>
<td>0.17 (0.07)**</td>
</tr>
<tr>
<td>like, given</td>
<td>0.48 (0.12)***</td>
</tr>
<tr>
<td>comment, given</td>
<td>0.29 (0.22)</td>
</tr>
<tr>
<td>likes total</td>
<td>-0.001 (0.001)*</td>
</tr>
<tr>
<td>comments total</td>
<td>0.005 (0.002)</td>
</tr>
</tbody>
</table>

Note. *p < .10, **p < .05, ***p < .01