



## Research Report

# Facebook effects on social distress: Priming with online social networking thoughts can alter the perceived distress due to social exclusion



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## ABSTRACT

Social networking sites (SNS) are extremely popular for providing users with an efficient platform for acquiring social links. We experimentally explored whether priming with SNS would interfere with perceptions of social exclusion experiences. Experiment 1, involving 96 undergraduate Facebook users, demonstrated that priming with SNS was associated with decreased distress experienced in an online virtual ball-tossing game (the exclusionary Cyberball). Felt relatedness mediated the link between SNS primes and reduced social distress. Experiment 2, involving 88 current users of Facebook, showed that thoughts of losing SNS intensified distress caused by social exclusion, suggesting that the loss of SNS appears to signify the loss of a potential source of social reconnection. Moreover, the magnifying effect of SNS' unavailability on the distress associated with social exclusion was more prominent for heavy users. This research provides the first demonstration that SNS (or the loss thereof) can neutralize (augment) perceived distress related to social exclusion. Our findings indicate that online social networking may more profoundly influence how users experience social exclusion in the information age than previously believed.

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## 1. Introduction

Social interaction appeared to be costly before the Internet became ubiquitous (Bargh & McKenna, 2004). Social networking sites (SNS) such as Facebook, Twitter, and Google+ are low-cost tools that can promote the creation of social connections by providing a convenient platform that can be accessed at any time (Bargh & McKenna, 2004; Ellison, Steinfield, & Lampe, 2007). The experience of being ignored, rejected, or excluded is pervasive in human social life. Prior literature suggests that social exclusion may draw attention to resources that could facilitate social connections (DeWall, Maner, & Rouby, 2009; Williams, 2007). If online social networking has become a popular means of establishing and maintaining social connections in the information age (Bargh & McKenna, 2004; Ellison et al., 2007; Haythornthwaite, 2005), will thinking about SNS (i.e., available social connections) interrupt the

perceived distress associated with social exclusion? Determining whether the idea of online social networking is related to the experience of social exclusion is pertinent for understanding how strongly SNS have become a potential source of social connections in contemporary social life. Previous studies have mainly focused on the predictors, correlates, and outcomes of SNS use (e.g., Chou & Edge, 2012; Forest & Wood, 2012; Gangadharbatla, 2008; Gonzales & Hancock, 2011; Wilson, Fornasier, & White, 2010; Wu & Chiou, 2009). However, no study has addressed the extent to which SNS influence the distress of perceived social exclusion. In this study, we report experimental evidence showing the priming effect of online social networking on the experience of social exclusion: priming with SNS can mitigate perceived distress due to social exclusion, and thoughts of losing SNS can increase the distress experienced from social exclusion.

The term social capital refers to the resources available to individuals through their social interactions (Lin, 2001; Putnam, 2000). In principle, social capital is embedded in the structure of social networks and the location of individuals within these structures (Burt, 2005). Ellison, Steinfield, and Lampe (2010) proposed that SNS may have social capital implications because they have

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the potential to reshape social networks and lower the cost of communication. Using survey data from an undergraduate sample from the U.S., [Ellison et al. \(2007\)](#) demonstrated that Facebook use is closely associated with the formation and maintenance of social capital, including bridging (which refers to the informational benefits of a heterogeneous network of weak ties) and bonding (which refers to the emotional benefits from strong ties to close friends and family). Furthermore, [Steinfeld, Ellison, and Lampe \(2008\)](#) conducted a longitudinal analysis of panel data from Facebook users and found that Facebook use in year one strongly predicted bridging social capital outcomes in year two. Moreover, they found that self-esteem may operate as a moderator of the relationship between SNS use and social capital. Specifically, participants with lower self-esteem appeared to benefit more from their use of Facebook than did those with higher self-esteem. Additionally, a random web survey of college students ( $n = 2603$ ) suggested that Facebook use is positively related to life satisfaction, social trust, civic engagement, and political participation, which enhance individuals' social capital ([Valenzuela, Park, & Kee, 2009](#)). These studies indicate that online social networking may play a crucial role in social connection, which influences the formation and maintenance of social capital.

The desire to form and maintain social bonds has deep roots in evolutionary history ([Baumeister & Leary, 1995](#); [Buss, 1990](#)). Ostracism, interpersonal rejection, and other forms of social exclusion appear to be highly aversive ([Baumeister & Tice, 1990](#); [Williams, 2007](#)). Exclusion-related experiences have been found to be associated with anxiety, loneliness, jealousy, depression, low self-esteem (e.g., [Leary, 1990](#)), decrements in intelligent thought (including IQ and Graduate Record Examination test performance; [Baumeister, Twenge, & Nuss, 2002](#)), and reduced immune system functioning (see [Cacioppo, Hawkey, & Bernston, 2003](#), for a related review). These devastating consequences of social exclusion and the importance of social ties to survival ([Ainsworth, 1989](#); [Buss, 1990](#)) indicate that coping with social exclusion is an important ability for human beings. The social-reconnection hypothesis ([Maner, DeWall, Baumeister, & Schaller, 2007](#)), which stems from theory pertaining to the links among motivation, deprivation, and goal attainment, proposes that when a fundamental human motivation is hampered, humans (like other species) often seek alternative means to satisfy that need. Previous studies have provided support for the reconnection hypothesis. For instances, [Williams and Sommer \(1997\)](#) found that excluded participants made more effort in a subsequent group task, indicating that they were motivated to make themselves appear socially desirable. [Williams, Cheung, and Choi \(2000\)](#) observed that ostracized individuals were more likely than others to show conformity. [Gardner, Pickett, and Brewer \(2000\)](#) showed that participants who had been socially excluded recalled more events related to affiliation, suggesting that social exclusion may increase the attention paid to potential sources of social connection.

According to the social reconnection hypothesis ([Maner et al., 2007](#)), experiences of social exclusion may serve as signals that social connection needs are not satisfied. Thus, excluded individuals may feel an especially strong desire to form bonds with others to satisfy these needs. Given that SNS can serve as a convenient platform for acquiring social connections, it is reasonable to suppose that when experiencing social exclusion, individuals may be primed to think about SNS as meeting fundamental human needs. A recent study conducted by [Lee and Chiou \(2013\)](#) lends credibility to this hypothesized connection. They employed a modified Stroop task (a color-word naming task) to test reaction times to SNS and non-SNS terms (including general terms and brand names). In principle, individuals who are primed to think about a topic typically show slower reaction times in naming the color of related words ([Chiou & Cheng, 2013](#); [Sparrow, Liu, & Wegner, 2011](#)).

This is because those words become more accessible to the mind and thereby draw attention away from the font color of testing terms, leading to a longer reaction time (i.e., Stroop interference). The results showed that excluded participants took longer to name the font color of SNS-related words (and SNS brand names) than they did for matched general words (and other global brand names). These findings suggest that social exclusion may prime users with thoughts about SNS.

From the perspective of perceptual priming ([Bargh, 2006](#); [Dijksterhuis & Bargh, 2001](#); [Schröder & Thagard, 2013](#)) primes can influence human perception by altering the accessibility of prime-related mental content ([Loersch & Payne, 2011](#)). For example, [Zhou, Vohs, and Baumeister \(2009\)](#) tested whether thoughts of having money would prime a broad sense of strength or efficacy and thereby blunt the distress of being rejected. In one experiment, participants were given a finger-dexterity task. Those in the money condition counted out 80 \$100 bills, whereas participants in the paper condition counted out 80 pieces of paper. These researchers showed that handling money (compared with handling paper) reduced the distress of social exclusion experienced in a computerized ball-tossing game (i.e., the Cyberball game; [Eisenberger, Lieberman, & Williams, 2003](#)). [Shidlovski and Hassin \(2011\)](#) primed female participants with a motherhood goal and assessed how disgusted they were in response to being shown mildly disgusting pictures (e.g., babies with runny noses, dirty diapers). They demonstrated that perceived disgust was weaker among participants who had received the motherhood prime than non-primed controls.

The social-reconnection hypothesis ([Maner et al., 2007](#)) and prior research supporting this notion (e.g., [Gardner et al., 2000](#); [Williams et al., 2000](#); [Williams & Sommer, 1997](#)) suggest that social exclusion is associated with the attention paid to potential sources of social connections such as SNS ([Lee & Chiou, 2013](#)). Based on recent advancements in priming research, we contend that SNS, as a potential resource for social connection, may prime individuals with a general sense of relatedness, thus leading them to perceive less distress when being socially excluded. This hypothesis is also supported by the active-self account for priming effects ([Wheeler, DeMarree, & Petty, 2007](#)), which proposes that an activated relevant self (e.g., felt sense of relatedness in the current context) mediates prime-to-perception effects (e.g., a strong sense of self-efficacy mediates the link between money prime and reduced distress of social exclusion in [Zhou et al., 2009](#); a lowered sense of self-worth mediates the association between incidental use of cheaper, generic products and disadvantageous self-evaluations in [Chiou & Chao, 2011](#)). Further, if SNS primes can reduce experienced distress caused by social exclusion, then thoughts of losing SNS, in contrast, may signal the unavailability of a potential source for social reconnections and thereby intensify perceived distress when experiencing social exclusion. Moreover, if thinking about losing SNS may prime elevated distress at social exclusion, then such loss will have an especially strong effect on users with more intense SNS use; SNS loss should make those individuals more vulnerable to socially exclusive experiences.

In the current research, we conducted two experiments to test the hypothesis that reminders of SNS altered the impact of social events, especially those involving social exclusion. Experiment 1 examined whether the subliminal prime of SNS was associated with decreased distress experienced in an online virtual ball-tossing game (the Cyberball game; [Eisenberger, Lieberman, & Williams, 2003](#)). The first experiment also investigated the mediating role of the sense of felt relatedness in the link between SNS primes and reduced distress at social exclusion. Experiment 2 explored whether thoughts of losing SNS would intensify perceived social distress induced by exclusionary bogus feedback ([Baumeister, DeWall, Ciarocco, & Twenge, 2005](#)). We further tested whether

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