Computers in Human Behavior 35 (2014) 359–363

Contents lists available at ScienceDirect

Computers in Human Behavior

journal homepage: www.elsevier.com/locate/comphumbeh

Research Report

Facebook's emotional consequences: Why Facebook causes a decrease in mood and why people still use it

Christina Sagioglou *, Tobias Greitemeyer [1]

Institut für Psychologie, Universität Innsbruck, Innrain 52, 6020 Innsbruck, Austria

ARTICLE INFO

Article history:

Keywords:
Facebook
Social psychology
Mood
Meaningful activity
Affective forecasting error

ABSTRACT

Facebook is the world's most popular online social network and used by more than one billion people. In three studies, we explored the hypothesis that Facebook activity negatively affects people's emotional state. A first study shows that the longer people are active on Facebook, the more negative is their mood afterwards. The second study provides causal evidence for this effect by showing that Facebook activity leads to a deterioration of mood compared to two different control conditions. Furthermore, it was demonstrated that this effect is mediated by a feeling of not having done anything meaningful. With such negative outcomes for its users, the question arises as to why so many people continue to use Facebook on a daily basis. A third study suggests that this may be because people commit an affective forecasting error in that they expect to feel better after using Facebook, whereas, in fact, they feel worse.

© 2014 Elsevier Ltd. All rights reserved.

1. Introduction

A couple of days after Facebook founder Mark Zuckerberg had introduced the latest Facebook novelty in April 2013, Andy Borowitz from *The New Yorker* acerbically commented the event with the words "Facebook unveils new waste of time" (Borowitz, 2013). A similar position is taken by a *ZDNet* contributor, who referred to the new software as "another unnecessary distraction from what you should be doing" (Hess, 2013). Are these commentaries merely humorous presentations of personal opinions, or is there a deeper truth to them? More than one billion active Facebook users (Facebook, 2013) suggest that even if there is some truth to this notion, not many people are aware of it.

In fact, Facebook is the world's most popular online social network (Nielsen, 2012). With the emergence and the success of such networks, a significant part of people's social life has relocated to an online context. As a result, Facebook is an increasingly researched setting in psychology with regard to user demographics, motives that encourage Facebook use, or the activities people engage in (for a review, see Wilson, Gosling, & Graham, 2012). Note that only around 9% of users' activities involve communication (Wise, Alhabash, & Park, 2010). Instead, Facebook activity consists mainly of non-interactive processes, such as directed or random consumption of social content. Such non-interactive Facebook behavior, however, is associated with reduced social capital and increased feelings of loneliness (Burke, Marlow, & Lento, 2010). Furthermore, consuming other people's information, such as vacation photographs, was shown to evoke feelings of envy, which in turn had detrimental effects on life satisfaction (Krasnova, Wenninger, Widjaja, & Bruxmann, 2013). That is, the majority of the activities engaged in (i.e., passive consumption of social information) have rather negative outcomes for some its users.

Overall, however, with the rapid and exponential growth of online social networks within just one decade, knowledge about the psychological underpinnings and consequences of Facebook use remains scarce (cf., Wilson et al., 2012). Gosling (2009) has supposed that it may be triggered by the need for social grooming in a large environment. Considering the amount of passive consumption that occurs on Facebook, these speculations appear especially apt, as being up to date about other people's lives constitutes an essential component of gossiping, a modern human version of social grooming (Dunbar, 2004). Other use functions may include staying in touch with friends, passing time, or relieving boredom (Lampe, Ellison, & Steinfield, 2008). Although many motives are yet to be identified, the large number of active users demonstrates that the motivational compound underlying Facebook is certainly powerful (Wilson et al., 2012). What does this imply for the potential consequences of Facebook use? There are evidently several components that drive people to regularly use the network, but does succumbing to those drives necessarily result in a state of content for users? Surprisingly, it has not yet been documented

* Corresponding author. Tel.: +43 (0) 512 507 37456.
E-mail addresses: christina.sagioglou@uibk.ac.at (C. Sagioglou), tobias.greitemeyer@uibk.ac.at (T. Greitemeyer).
[1] Tel.: +43 (0) 512 507 37452.

http://dx.doi.org/10.1016/j.chb.2014.03.003
0747-5632/© 2014 Elsevier Ltd. All rights reserved.

how Facebook activity affects users' emotional states. Wise et al. (2010) conducted simultaneous physiological measures of pleasantness during Facebook use, but distinguished only between directed (e.g., a certain friend's profile) and arbitrary (e.g., news feed) information seeking without relating those activities to others such as communication or Facebook-unrelated Internet activities.

2. The present research

With the present set of studies, we took a social psychological approach to explore the immediate emotional effects of Facebook use. Based on the findings outlined here, it seems likely that Facebook use results in negative emotional states. It is, we suggest, well conceivable that although Facebook may be triggered by basic human needs (e.g., need for social grooming) or adverse states such as boredom or loneliness, it entails side effects that curb one's happiness. Specifically, we hypothesized that one of these effects is the attribution of little meaning to the activities engaged in on Facebook. Abundant research and theorizing demonstrated that meaning in life – or a meaningfulness of its components such as leisure or work activities – is inextricably linked with well-being and life-satisfaction (e.g., Csíkszentmihályi, 1990). We thus further hypothesized that the evaluation of Facebook use as little meaningful would dampen users' mood. These hypotheses have been addressed in three studies.

In the first study, we investigated the relation between the effective length of Facebook activity and emotional state with a correlational design. Importantly, participants indicated their mood immediately after using Facebook in order to avoid potential biases through retrospective judgments, a valid concern that will be further addressed in the discussion. Secondly, we conducted an experiment to examine the causality of the effect observed and compared the mood effects of Facebook to those of Internet browsing and a baseline control condition. Additionally, we tested for the proposed mediating mechanism, namely a feeling of having spent time meaningfully. A final study was aimed at better understanding why Facebook enjoys continuous popularity despite the mood-decreasing effects it has on its users.

3. Study 1

3.1. Method

3.1.1. Participants

A total of 123 German-speaking Facebook users (72 males; $M_{Age} = 22.11$, $SD = 2.87$) completed a 3-min online survey. They were recruited through a link published on the Facebook account of a research assistant.

3.1.2. Materials and procedure

To examine the correlation between time spent on Facebook and current mood, it was necessary to recruit people with a Facebook account who had been using the network immediately prior to completing the survey. Therefore, the survey link was posted directly via the online social network itself. In a short questionnaire, we first assessed participants' current mood with the 20-item Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), a well-established self-report instrument to investigate current emotional states. Subsequently, participants answered a few questions about their Facebook and Internet use. Specifically, the first question asked about the time (in minutes) he or she actively spent on Facebook immediately before participating in this study. It was indicated that actively meant chatting, looking at pictures – not just logged in. We then asked about the usual Internet and Facebook use, such as the number of friends, amount of status updates, and the daily amount of time spent online.

3.2. Results and discussion

The PANAS items assessing negative affect ($n = 10$) were reverse-scored and combined with the positive affect items into a single score (Cronbach's $\alpha = .84$), with higher values indicating more positive mood. The time spent on Facebook prior to the experiment ranged from 0 to 120 min with an average of 12.78 ($SD = 21.16$) minutes. As predicted, positive mood was correlated negatively with the time active on Facebook, $r = -.24$, $p = .007$. This indicates that indeed, the more time that is spent on Facebook, the lower the mood is immediately afterwards. In contrast, aspects of general Facebook and Internet behavior were not significantly correlated with mood (status updates: $r = -.12$, $p = .20$, $N = 123$; friends: $r = -.06$, $p = .466$, $N = 120$; daily Facebook use: $r = .07$, $p = .466$, $N = 122$; daily Internet use: $r = -.026$, $p = .778$, $N = 122$).

4. Study 2

Does Facebook dampen one's mood or does a bad mood encourage Facebook activity? Because a correlational design has been employed in Study 1, we could not pit off both explanations. In Study 2, we therefore examined the direction of causality by employing an experimental design. Moreover, we aimed to ensure that Facebook use in particular, and not any other online activity, causes a decrease in one's emotional well-being. Thus, we contrasted a Facebook condition with a browsing control and a no-activity control condition and predicted that Facebook use compared to both control conditions would negatively affect mood.

Furthermore, we wanted to test a possible mediating mechanism of this effect that could explain what exactly Facebook elicits that causes a decrease in mood. Based on the nature of the majority of Facebook activities, that is passive consumption of social information shared by other network members, and a previously reported use function of wanting to pass time (Lampe et al., 2008), it was predicted that Facebook would not be regarded as a meaningful activity. Specifically, we examined whether a feeling of having wasted time would account for potential differences in mood.

4.1. Method

4.1.1. Participants and design

Two-hundred-and-sixty-three English-speaking participants (163 females; $M_{Age} = 33.83$, $SD = 12.59$) were recruited from Mechanical Turk (MTurk; see e.g., Buhrmester, Kwang, & Gosling, 2011 for a discussion of MTurk data quality) in exchange for modest monetary compensation ($0.30). We decided to test a demographically broad sample of US American citizens, for which MTurk is an apt recruitment tool (Buhrmester et al., 2011). The study was described as investigating the relation of Internet use and emotions. The fact that we were interested specifically in Facebook use was not revealed, in order to avoid that this information influenced participants' responses. Participants were randomly assigned to one of three Internet use conditions.

4.1.2. Materials and procedure

After opening the survey link, participants were assigned to a Facebook activity, a browsing control, or a no-activity control condition. Specifically, instructions to the Facebook condition read that we would like participants to spend 20 min actively (i.e., posting, chatting, looking at pictures – not just logged in) on Facebook and immediately return to the survey afterwards to answer some

items. We further informed participants that there was a time stamp on the page that would track the actual time the survey page was accessed and that approval of participation depended on it. This was intended to motivate participants to actually follow the instructions. In the browsing condition, participants were asked to spend 20 min actively browsing the Internet but not to use any social networks. This served as a first control condition with regard to whether spending 20 min "online" would account for the effects examined. They received the same time stamp information as the Facebook group. A third condition formed the baseline control condition. In this condition, participants did not receive any instruction but were immediately forwarded to the dependent measures. These items contained three questions addressing the proposed mediator variable *meaningful activity*. The questions were explicitly referring to the past 20 min and read, "*How much do you feel like you have spent your time on something meaningful?*", "*...wasted your time?*" and "*...done something useful?*". Participants indicated the answers on a 7-point Likert-scale ranging from 1 (*not at all*) to 7 (*very much*). The subsequent survey page contained the PANAS (Watson et al., 1988), assessing participants' mood state. The survey was concluded with some final items assessing demographical data and daily Internet and Facebook use.

4.2. Results

The second item assessing the proposed mediator was reversely scored and then combined with the other two into a single score (Cronbach's $\alpha = .91$) with higher values indicating a more meaningful activity. The PANAS items were combined as in the first study leaving a single score (Cronbach's $\alpha = .86$) with higher values reflecting more positive mood. Means and standard deviations are reported in Table 1. Planned contrasts revealed that indeed, participants who spent 20 min on Facebook (contrast weight = +2) reported having spent the past 20 min less meaningful than participants in the browsing control condition (contrast weight = −1) and in the no activity control condition (contrast weight = −1), $t(260) = -7.18$, $p < .001$. With regard to mood, participants who were active on Facebook similarly reported less positive mood than participants in the control conditions, $t(260) = -2.11$, $p = .036$. The two control conditions did not differ regarding mood ($p = .337$) or meaningfulness ratings ($p = .717$).

Based on these results, we then tested our prediction that Facebook use decreases one's emotional well-being mediated by feeling that one has just wasted time on a meaningless activity. Mediation analysis confirmed our hypothesis that ratings of the meaningfulness of the past 20 min mediate the effect of Facebook use on mood, Sobel $z = 5.83$, $p < .001$. The detailed results of the regression analyses are displayed in Fig. 1. As can be seen, when controlling for the meaningfulness of the activity engaged in, the effect of Facebook use on mood is reduced to non-significance. If anything, when Facebook does not consist of meaningless activities, it tends to enhance users' mood, which is reflected in the marginal significant reversal of the effect.

Table 1
Mean mood and meaningfulness ratings as a function of internet activity in Study 2.

Activity	Dependent measure	
	Mood	Meaningfulness
Facebook ($n = 86$)	3.54 (0.49)	2.92 (1.58)
Browsing ($n = 79$)	3.72 (0.50)	4.47 (1.76)
No activity ($n = 98$)	3.65 (0.53)	4.38 (1.46)

Note: Standard deviations are shown in parentheses.

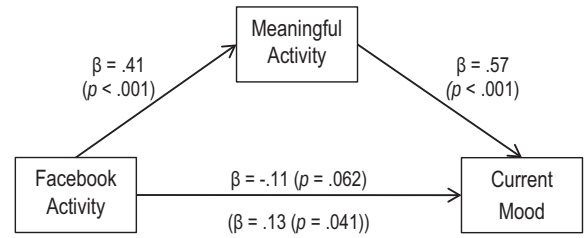

Fig. 1. Mediation of the effect of Facebook activity on mood by meaningfulness of activity (Study 2). Facebook activity was coded: 1 = Facebook activity; 2 = control conditions.

Finally, it is important to note that our sample did not differ regarding average daily Facebook usage, $F(1, 261) = 1.39$, $p = .240$, or average daily Internet usage, $F(1, 261) = 0.04$, $p = .836$, depending on experimental condition. Specifically, participants who were assigned to the Facebook use condition indicated to use Facebook for an average of 38.06 min per day ($SD = 37.23$), while participants in the two control conditions reported to use Facebook for 31.86 min ($SD = 41.33$) on average per day.

4.3. Discussion

These results complement the findings of the first study by demonstrating a causal effect of Facebook activity on a decrease in mood. It is important to note that browsing the Internet but not to use any social networks did not dampen people's mood. It is thus something specific about the use of social networks that has negative emotional consequences. Namely, it appears that, compared to browsing the Internet, Facebook is judged as less meaningful, less useful, and more of a waste of time, which then leads to a decrease in mood.

Based on these results, it seems surprising that Facebook enjoys such great popularity. The question arises as to why people continue to engage in Facebook activities if as a result, they feel like they wasted their time and feel worse than before. Is it possible that users have a biased anticipation as to how Facebook makes them feel? From other areas of psychological research we know that wrongly predicting one's own feelings and thoughts can be a common error with drastic consequences, commonly referred to as an affective forecasting error (for a review, see Wilson & Gilbert, 2005). For example, people fail to notice that being able to change a decision at a later point in time makes them unhappier than having to stick with the decision and therefore, they prefer to have the option of changeability (Gilbert & Ebert, 2002). Similarly, people do not realize that taking revenge will make them feel worse than before (Carlsmith, Wilson, & Gilbert, 2008). Instead, they expect the opposite emotional outcome (i.e., to feel better) and therefore readily take the chance to punish an offender (Carlsmith et al., 2008). In both cases, the behavioral consequence of the forecasting error entails an emotional state not simply of different intensity than expected, but of entirely different quality. Likewise, Facebook users might mispredict Facebook to have positive effects, preventing them from reducing the amount of time spent on the network and thereby decreasing their happiness. In a third and final study, we will examine the answer to this question by considering the possibility of an affective forecasting error.

5. Study 3

Affective forecasting errors denote a discrepancy between the expected and actual personal emotional state after a certain event (e.g., taking revenge). Accordingly, after having assessed users' actual mood in Studies 1 and 2, we now wanted to find out what

users *expect* to feel like after Facebook use. We predicted that people would wrongly anticipate that after 20 min on Facebook they would feel better than before, thereby committing a forecasting error.

5.1. Method

5.1.1. Participants and procedure

One-hundred-and-one English-speaking Facebook users (53 males; M_{Age} = 30.86, *SD* = 9.20) were recruited on MTurk to answer a short questionnaire in return for a modest amount of money. The provided link opened a survey asking the following question: "*What would you say, how do you feel after being active on FACEBOOK for about 20 min?*" Participants indicated their answer on a 10-point scale ranging from 1 = "*worse than before*" to 10 = "*better than before*".

5.2. Results and discussion

The sample mean of 6.10 (*SD* = 2.11) was tested against the scale mean of 5.5 using a one-sample *t*-test. It confirmed our prediction that people assume Facebook activity would make them feel better than before, $t(100) = 2.86$, $p = .005$. It thus seems that an affective forecasting error may lie at the heart of continued Facebook use in that people expect to feel better after spending some time on Facebook, whereas, in fact, they feel worse afterwards (see Studies 1 and 2).

6. General discussion

To our knowledge, the three studies reported here are the first to investigate the relation between Facebook activity and users' emotional state. Whereas our first study provided correlational evidence for the notion that Facebook negatively affects users' mood, the second study established a causal relationship between spending time on Facebook and negative mood immediately afterwards. Furthermore, it was demonstrated that this mood decline occurs because people feel like they wasted time and engaged in something only little meaningful by being active on Facebook. In a third study, we intended to understand why people continue to use Facebook although they do not consider it meaningful and experience a decline of their mood. The results suggest that an affective forecasting error is committed in that the emotional effects of Facebook activity are more negative than anticipated. In line with this finding, Facebook users indicate more positive than negative emotions when asked to estimate how they *typically* feel after using Facebook (Krasnova et al., 2013). Considering the 655 million people who log into Facebook every day (Facebook, 2013), the scope of these results becomes obvious. Our findings suggest that – on a daily basis – hundreds of millions of people engage in an activity that they consider little meaningful, which in turn dampens their current mood.

In past research, participants typically rendered retrospective judgments about their feelings or thoughts after using Facebook, but no research has yet asked for estimates immediately after controlled Facebook use as in the present research (Study 2). Yet, the observed forecasting error highlights the potential for a discrepancy between retrospective or anticipatory and immediate points of measurement. Specifically, it underlines that delayed judgments cannot be interpreted as accurate when wanting to investigate true experience. In future studies researchers should thus consider that judgments that are given at a temporal distance to actual Facebook use might not yield valid results as to the actual user experience, but instead reflect user expectancies. Remote judgments may therefore reveal more about the underlying motivations than about the consequences of Facebook use, or at least, they are likely to be biased by current drives.

The results from Study 3 revealed that such an underlying incentive to use Facebook might be the expectation to feel better. It remains unclear, however, which mechanisms are at work in creating this forecasting error. Possibly, it is instigated by underlying motivators such as the social grooming need, which make positive expectations salient and cloud the memory of past feelings of wasted time or envy. Likewise, the memory distortion could be due to the selective recall of atypical events (Morewedge, Gilbert, & Wilson, 2005), insofar as rare cases of positive Facebook experience influence users' emotional forecasts more strongly than typical cases of negative experience. Whether these or other mechanisms evoke the forecasting error remains an interesting question for future studies to answer. It thus remains an important research task to disentangle the motivational grounds for Facebook usage by examining what precisely it is that people hope to gain from using the network and relating this to the de facto benefits users experience. In this context, it is noteworthy that people are not specifically adept at knowing their own motivational forces (Wilson & Dunn, 2004). Instead, when asked about reasons for certain action, many individuals tend to generate reasons that they consider plausible and that are easily accessible in memory, but that are not necessarily related to the actual cause of the behavior (Nisbett & Wilson, 1977). Accordingly, the reasons people explicitly indicate for using Facebook could be only loosely tied to the true motivations. Implicit attitudinal measures could give more information about this reasoning. The fact that people considered their Facebook activity a waste of time implies that – whichever the core motivations may be – they are not exceedingly essential to one's well-being.

The main limitation of our results is the fact that Study 2 was an online-study, meaning there was no possibility to control what participants truly engaged in. It was only assured that they accessed the survey page for a certain amount of time, but no information was available as to what people did during this time. A replication of these results under laboratory condition would thus be recommendable. Further, we did not test whether the expectation to feel better is in fact a cause of Facebook use. However, considering the human tendency to approach activities that are believed to have hedonic rewards and to repulse the opposite (e.g., Higgins, 2006), it seems likely that this expectation functions as a motivator. Finally, it remains unclear whether Facebook usage has prolonged consequences for well-being or whether the effects are indeed limited to a certain subsequent period of time. The fact that in our first study we did not observe significant correlations between general Facebook usage and mood may be a hint at short-term effects. Yet, the instructions given to participants asked explicitly for current and not for general emotional states. Additionally, experiencing meaningfulness is by itself as essential as is happiness with regard to subjective well-being (McGregor & Little, 1998), suggesting that the effects of Facebook use reach far beyond the aspects examined in this research. Further research is needed to explore the long-term effects of using Facebook on emotional as well as other aspects of well-being.

Taken together, the findings highlight the importance of research on social media phenomena such as Facebook. They tie in with previous findings pointing to the negative emotional states Facebook can put its users in (Burke et al., 2010; Krasnova et al., 2013). Although Facebook is an excellent tool for social networking such as staying in touch with acquaintances, there are serious disadvantages of using it such as envy, lowered life satisfaction (Krasnova et al., 2013), reduced satisfaction of basic psychological needs (Greitemeyer, Mügge, & Bollermann, in press), and dampened mood. Although online social networks like Facebook have become a popular subject of psychological research, many of its psycholog-

ical underpinnings and consequences have not been investigated yet. This research is the first to provide consistent correlational and experimental evidence for fundamental effects of Facebook use on subjective well-being.

Acknowledgments

The authors wish to thank Natascha Bonosevich, Christian Epple, Georg Griesser, and Kathrin Wieden for their help in collecting data for Study 1.

References

Borowitz, A. (2013). *Facebook unveils new waste of time*. Retrieved May 2 2013 from <http://www.newyorker.com/online/blogs/borowitzreport/2013/04/facebook-unveils-new-waste-of-time.html>.

Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's mechanical turk a new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science, 6*, 3–5.

Burke, M., Marlow, C., & Lento, T. (2010). Social network activity and social well-being. In *In Proceedings of the 28th international conference on Human factors in computing systems* (pp. 1909–1912). New York, NY: ACM.

Carlsmith, K., Wilson, T., & Gilbert, D. (2008). The paradoxical consequences of revenge. *Journal of Personality and Social Psychology, 95*, 1316–1324.

Csíkszentmihályi, M. (1990). *Flow: The psychology of optimal experience*. New York: Harper and Row.

Dunbar, R. I. (2004). Gossip in evolutionary perspective. *Review of General Psychology, 8*, 100–110.

Facebook (2013). *Statistics of Facebook*. Palo Alto, CA: Facebook. Retrieved May 2 2013 from newsroom.fb.com/Key-Facts.

Gilbert, D. T., & Ebert, J. E. (2002). Decisions and revisions: The affective forecasting of changeable outcomes. *Journal of Personality and Social Psychology, 82*, 503–514.

Gosling, S. (2009). The ancient psychological roots of Facebook behavior. *The Harvard Business Review*. Retrieved May 2 2013 from <http://blogs.hbr.org/now-new-next/2009/03/the-ancient-psychological-root.html>.

Greitemeyer, T., Mügge, D. O., & Bollermann, I. (in press). Having responsive Facebook friends affects the satisfaction of psychological needs more than having many Facebook friends. *Basic and Applied Social Psychology*.

Hess, K. (2013). *Phone Home? Facebook Home another intolerable waste of time*. Retrieved May 3 2013 from <http://www.zdnet.com/phone-home-not-facebook-home-is-another-intolerable-waste-of-time-7000013557/>.

Higgins, E. T. (2006). Value from hedonic experience and engagement. *Psychological Review, 113*, 439–460.

Krasnova, H., Wenninger, H., Widjaja, T., & Bruxmann, P. (2013, February). Envy on Facebook: A hidden threat to users' life satisfaction? *Presented at the 11th international conference on Wirtschaftsinformatik*. Leipzig, Germany.

Lampe, C., Ellison, N., & Steinfield, C. (2008). Changes in use and perception of Facebook. In *In Proceedings of the 2008 ACM conference on computer supported cooperative work* (pp. 435–444). New York, NY: ACM.

McGregor, I., & Little, B. R. (1998). Personal projects, happiness, and meaning: On doing well and being yourself. *Journal of Personality and Social Psychology, 74*, 494–512.

Morewedge, C. K., Gilbert, D. T., & Wilson, T. D. (2005). The least likely of times: How remembering the past biases forecasts of the future. *Psychological Science, 16*, 626–630.

Nielsen (2012). *Social Media Report 2012: Social media comes of age*. Retrieved May 2 2013 from <http://www.nielsen.com/us/en/newswire/2012/social-media-report-2012-social-media-comes-of-age.html>.

Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review, 84*, 231–259.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063–1070.

Wilson, T. D., & Dunn, E. W. (2004). Self-knowledge: Its limits, value, and potential for improvement. *Annual Review of Psychology, 55*, 493–518.

Wilson, T. D., & Gilbert, D. T. (2005). Affective forecasting: Knowing what to want. *Current Directions in Psychological Science, 14*, 131–134.

Wilson, R. E., Gosling, S. D., & Graham, L. T. (2012). A review of Facebook research in the social sciences. *Perspectives on Psychological Science, 7*, 203–220.

Wise, K., Alhabash, S., & Park, H. (2010). Emotional responses during social information seeking on Facebook. *Cyberpsychology, Behavior, and Social Networking, 13*, 555–562.