Affirming the self online: Motives, benefits and costs of Facebook use

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AFFIRMING THE SELF ONLINE:

MOTIVES, BENEFITS AND COSTS OF FACEBOOK USE

A Dissertation

Presented to the Faculty of the Graduate School

of Cornell University

In Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

by

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August 2010

AFFIRMING THE SELF ONLINE:

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Cornell University 2010

Social network sites, such as Facebook, allow users to create novel representations of
the self that capture both social connectivity and important personal attributes (e.g.,
social roles, activities, hobbies and values). According to self-affirmation theory, this
type of information could be self-affirming in the sense of reinforcing an overall sense
of self-worth and emotional well-being. The theory posits that once affirmed by
attending to such personally meaningful information, individuals tend to be more
secure and less defensive when confronted with the slights and challenges of daily life.
This dissertation tested the hypothesis that Facebook profiles constitute an everyday
source of self-affirmation, as understood through the lens of self-affirmation theory.
Study 1 found that a brief exposure to one's own Facebook profile had the same
psychological effects as a classic self-affirmation manipulation, namely reduced
defensiveness when confronted with a threat to the ego (i.e., negative feedback on an
academic task). Facebook profile exposure also resulted in increased positive affect,
both self-directed (e.g., feeling loved, supported and connected) and other-directed
(e.g., feeling loving, giving and grateful). Study 2 examined whether Facebook users
take advantage of these self-affirmational benefits in times of psychological need. As
predicted by self-affirmation theory, participants were more likely to choose to spend
time on Facebook when their ego was threatened than when it was unharmed,
suggesting that Facebook use is partly motivated by an unconscious need to restore

self-worth. Study 3 examined further perceptual and behavioral consequences of Facebook profile exposure and found that, while Facebook raises state self-esteem, it can harm performance on a subsequent task by reducing motivation to expend effort on it. Together, these studies contribute to self-affirmation theory by examining how self-affirmation operates in everyday life, outside of experimenter-generated self-affirmation interventions. Results also illuminate previously unexplored motives for Facebook use (i.e., an unconscious desire to elevate feelings of self-worth), and highlight psychological benefits (i.e., increased positive affect and state self-esteem, and decreased defensiveness) and costs (i.e., reduced motivation for task performance) resulting from Facebook profile exposure.

BIOGRAPHICAL SKETCH

Catalina Toma was born in Brasov, Romania. She spent the first eight years of her formal education at Brasov's *Arts Lyceum*, where she took intensive piano and musical theory lessons. She then attended the *Andrei Saguna* National College, Brasov's most selective high school, where she distinguished herself through several awards in national competitions of English and French. In 2000, Catalina received an Academic Excellence and Leadership fellowship to pursue a Bachelor's degree at the University of Bridgeport, a small liberal arts college in Connecticut that, at the time of her enrolment, was ranked the world's most culturally diverse institution of higher learning. In 2004, the University of Bridgeport awarded Catalina a dual Bachelor of Arts degree in Mass Communication and Literature & Civilization (summa cum laude), as well as a minor in Psychology. That same year she was accepted as a graduate student in the Department of Communication at Cornell University, under the tutelage of Prof. Jeff Hancock. Catalina began to conduct research on the effects of communication technology on psychological processes, such as self-presentation, deception, trust and emotional well-being. In 2006, she obtained a Master of Science degree for her thesis on the deceptive practices of online daters, and is now a candidate for a doctoral degree. Starting in the fall of 2010, Catalina will join the Department of Communication Arts at the University of Wisconsin-Madison as an Assistant Professor.

To Jishnu, Victoria, Nicolae & Andrei – the people who affirm me everyday,

face-to-face or online

ACKNOWLEDGMENTS

I would like to extend my gratitude to my advisor, Jeff Hancock, who has been a teacher, mentor and source of inspiration for me throughout the years. During our one-on-one meetings and paper collaborations, I have learned more from Jeff than from any other teacher. I also thank him for his contagious enthusiasm and "sky is the limit" attitude, which have always energized and motivated me. I am equally indebted to my committee members, Mike Shapiro, Dennis Regan and Sue Fussell, who have been engaged with and supportive of my ideas, and have constantly challenged me to expand my thinking. You have set the bar high and I thank you for it. I would be remiss if I didn't acknowledge my past committee members – Joe Walther and Ron Ostman – who have indelibly shaped my approach to research and will continue to be sources of inspiration throughout my career.

The ideas presented in this dissertation have taken shape during many months of thinking, reading and active discussions. In addition to my committee members, I'd like to thank my fellow graduate students and particularly my colleagues in the Social Media Lab – Crystal Jiang, Amy Gonzales, Natalie Bazarova and Jamie Guillory – for acting as a sounding board for my ideas and providing valuable feedback.

A special thank-you is due to my wonderful team of undergraduate research assistants, who have meticulously collected the data reported in this dissertation. Ashley Downs, Peter Thompson, Stephanie Friedman, Thaisa Tirado, Kate Pascucci, Kerrie Lopez, Jessica Hwang, Ashley Vernon and Rachel Boochever – I am extremely grateful for your dedication, inquisitive mind, energy and sense of humor. It has been a joy to see you grow into veritable communication scholars. In particular, I am indebted to Ashley Downs, who has masterminded all the lab operations, but, most importantly, who has been a caring friend, a trusted confidante, a fellow idealist, and a tremendous moral support during the intellectual journey involved in this dissertation.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER 1

INTRODUCTION

The need to see oneself as valuable and worthy, as competent and morally adequate, is fundamental to the human condition (see Allport, 1955; James, 1890; Maslow; 1943; Rogers, 1951; Tesser, 1988) and a hallmark of mental health (Baumeister, 1993; Leary, Tambor, Terdal & Downs, 1995). As documented by a voluminous body of work in psychology, this desire for positive self-regard translates into a range of behaviors meant to protect the perceived worth and integrity of the self. On the one hand, people routinely dismiss, distort or avoid information that threatens self-worth (e.g., Brown, 1986; Festinger, 1957; Miller & Ross, 1975). On the other hand, they value, cultivate and gravitate towards information that reinforces self-worth (e.g., Taylor & Brown, 1988; Tesser, 1988).

One theoretical framework that explicates these self-worth maintenance processes is self-affirmation theory (Steele, 1988). In a nutshell, self-affirmation theory proposes that it is possible to "affirm" the self by bringing to awareness important and positive aspects of the self, such as treasured characteristics, values, and meaningful relationships. These affirmations fulfill people's need for positive self-regard, thus obviating other defensive responses. Moreover, people seek and treasure opportunities to self-affirm, whatever forms these may take – spending time with friends, reminiscing about the past, or joining valued causes. In fact, any information that represents the self in a desirable and credible manner or that makes salient one's social relationships may serve as a self-affirmation.

In recent years, new avenues for representing the self and the domains of the self that are critical to self worth (e.g., relationships, values, personal characteristics) have emerged and gained remarkable popularity. Most notably, online venues such as social network sites allow people to represent themselves via profiles and to amass and

communicate with extensive networks of friends. Self-representation on these profiles involves displaying the physical self through photographs, affiliating with various networks (e.g., universities, corporations), expressing central attitudes and preferences (e.g., politics, religion, favorite music and television shows), but most importantly articulating friendships with other users in the system (boyd & Ellison, 2007). Research has shown that profile self-presentation tends to be enhanced, with users emphasizing their positive attributes and social attractiveness (e.g., Ellison, Heino & Gibbs, 2006), but that it is essentially truthful (Back et al., 2010). As such, social network profiles may be a space for capturing the self at its most attractive, socially connected and desirable.

This dissertation explores the possibility that social network sites – and in particular Facebook, the most popular of these – represent an everyday venue for self-affirmation, as conceptualized by Steele's (1988) self-affirmation theory. Given that Facebook encapsulates treasured aspects of the self, especially personal relationships, could it serve the psychological function of securing an elevated sense of self-worth? Is Facebook so attractive and compelling to millions of users partly because it provides this kind of psychological comfort?

In tackling these questions, this dissertation aims to make theoretical contributions on two fronts: to self-affirmation theory and to the burgeoning literature on the uses and effects of social network sites. While empirical testing of self-affirmation theory is extensive (see Sherman & Cohen, 2006), at least three aspects of the theory are underdeveloped. First, self-affirmation is argued to be an everyday activity, yet it is unknown what activities people find affirming in their daily lives. Rather, extant research has focused on self-affirmational interventions developed by psychologists and administered in experimental settings. The present research identifies an everyday activity whose self-affirmational properties may be equivalent

to those of lab-driven self-affirmations. Second and relatedly, extant research on self-affirmation has examined what the effects of self-affirmation *can be* when self-affirmations have been prompted by an experimenter, but it has ignored the question of whether people self-affirm on their own in times of psychological need. The present research investigates this central proposition of self-affirmation theory in the context of social network sites. Finally, the mechanism responsible for self-affirmation effects is an issue of contention in the literature. The present research identifies and tests several possible such mediators.

With regard to the literature on social network sites, this dissertation makes a contribution by examining novel psychological motivations for social media use: restoring and maintaining self-worth. As will be discussed later, this motivation is unconscious and may be more salient in certain situations than others. This is an important addition to the existing literature, which has only investigated explicit, self-reported motivations of a general nature. Additionally, this dissertation investigates the effects of social networking site exposure on users' self-concept and on their subsequent behaviors, a topic that has only begun to be systematically studied (e.g., Gonzales & Hancock, 2008).

The dissertation is structured as follows. Chapter 2 presents a broad overview of self-affirmation theory, including central claims, empirical findings, and proposed mechanisms of self-affirmation effects. The subsequent chapters each report on an empirical study testing the self-affirming properties of Facebook profiles. Chapter 3 (Study 1) asks the foundational question of whether Facebook profiles represent an everyday form of self-affirmation by comparing the effect of Facebook exposure to that of a classic self-affirmation manipulation. Chapter 4 (Study 2) investigates whether, consistent with the claims of self-affirmation theory, people are more likely to gravitate towards their Facebook profiles in times of psychological distress, in an

unconscious effort to restore their self-worth. Chapter 5 (Study 3) investigates

outcomes of Facebook self-affirmation on self-perceptions and also on behaviors.

Additionally, Chapter 5 seeks to identify the mechanism of Facebook self-affirmation

by considering several potential mediators. Finally, Chapter 6 contains a general

discussion of the empirical findings and suggests avenues for future research.

CHAPTER 2

SELF-AFFIRMATION THEORY OVERVIEW

Self-affirmation theory (Steele, 1988) represents the overarching theoretical framework driving this dissertation's research questions. This chapter lays out a detailed overview of the theory, including major propositions and a summary of extant research, in view of informing subsequent empirical testing.

Self-affirmation Theory: An Introduction

One of the best documented findings in psychology is that people need to think of themselves as "good" and "appropriate" individuals, although they are much more critical of others (see Tesser, 1988). This need to view the self positively sits in stark contrast with the reality that rejection, criticism and failure are unavoidable aspects of life. Indeed, threats to the ego, ranging from the trivial (i.e., being treated rudely by a clerk, being ignored by a friend) to the consequential (i.e., failing an exam, being rejected by a significant other, interpersonal conflict), are seldom in short supply. A fascinating question, then, is how people manage to maintain this idealized view of the self when their behaviors, attitudes, beliefs and even character are constantly challenged.

This question has been addressed by a substantial body of work in social psychology, whose conclusion is that people have developed a "psychological immune system" (see Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998) that allows them to retain a positive and flattering self-image even when this image is challenged by events in the real world. Generally speaking, this psychological immune system operates by distorting people's perception of ego threats such that they appear less damaging. For instance, a student who has just failed an exam may derogate the fairness or the importance of the exam in order to avoid thinking of herself as "stupid" or "lazy." These cognitive distortions are known as defensive mechanisms or

5

defensive adaptations (see Freud, 1940; Greenwald, 1980, Kunda, 1987; Kruger & Dunning, 1999).

While defensive adaptations can be useful in that they protect the self from threatening information, they can be harmful when they prevent people from learning from their mistakes or from holding accurate views of reality. In the earlier example, the student who concluded, defensively, that the exam was unfair instead of taking responsibility for her own lack of studying, may jeopardize her future performance in school by failing to realize that she needs to work harder. Fortunately, there exists a strategy that allows people to maintain positive self-views *and* remain open-minded when faced with threatening information: self-affirmation (Sherman & Cohen, 2006; Steele, 1988).

Self-affirmation is the process of bringing to awareness important and positive aspects of the self (e.g., personal values, treasured characteristics, goals) that are unrelated to the threat currently experienced. When affirmed, individuals realize that, in the grand scheme of things, they are valuable and worthy; as a result, any single setback seems less important and accepting it does not harm the self. For example, the student who failed the exam, but is reminded that she has a large and supportive network of friends, may not need to comfort herself by derogating the importance or the fairness of the exam.

Just like defense mechanisms, self-affirmation is a strategy that serves to protect the self and maintain positive self-regard and that operates beyond conscious awareness. Unlike defense mechanisms, however, self-affirmation does not necessarily emerge as a response to ego threats. Rather, people seek opportunities to self-affirm on a daily basis and are naturally attracted to ideas, activities and people that endorse their elevated sense of self-worth. As such, self-affirmation serves a dual

function: to *repair* people's self-worth when it is threatened, but also to *maintain* it even when it is not faced with a particular threat.

In the following pages, the main propositions of self-affirmation theory will be elaborated on, specifically: 1) the *function* of self-affirmation; 2) the *form* self-affirmation takes, both in theory and in experimental operationalizations; 3) the *effects* of self-affirmation, as illustrated by laboratory-based empirical findings; 4) the *mechanism* through which self-affirmation is thought to operate; and 5) *self-affirmation in everyday life*, or its occurrence outside of laboratory-based experimental settings.

The Function of Self-Affirmation: The Need for Positive Self-Regard

As discussed earlier, it is a well-established fact that people generally need to possess, enhance and maintain positive self-views (see Allport, 1955; Epstein, 1973; James, 1890; Maslow, 1943; Rogers, 1951; Steele, 1988; Tesser, 1988), although cross-cultural studies show that this may be more typical of Western cultures (Heine, Lehman, Markus & Kitayama, 1999). To satisfy this need for positive self-regard, people have evolved a variety of defensive adaptations that operate by re-constructing events such that they appear less threatening and more flattering to the self. Examples of these cognitive distortions abound. When talking about a game, fans of the winning team bask in reflected glory by referring to "*our* victory," whereas the fans of the losing team tend to disassociate themselves from the loss by talking about how "*they* (that is, the team – not themselves) lost" (Cialdini et al., 1976). This allows them to either reinforce a "victorious" or "successful" self-concept, or avoid thinking of themselves as "losers." The majority of people rate themselves as "above average" on desirable qualities, such as intelligence and success, even though that is statistically impossible (Kruger & Dunning, 1999). People believe that the negative features of the media, such as its excessive portrayal of violence, only affect others, but not

themselves - a phenomenon known as the third-person effect (Davison, 1983). This cognitive strategy allows them to continue their media consumption patterns without re-conceptualizing themselves in negative terms as "reckless" or "vulnerable." Given this propensity to reconstruct reality such that it is favorable to the self, people appear to be more "rationalizing" than "rational" (Aronson, 1968; Kunda, 1990).

But why do people go to such great lengths, including misrepresenting reality and misperceiving themselves, in order to maintain positive self-regard? What is the function of having an elevated sense of self-worth? Although not directly addressed by self-affirmation theory, this critical question merits consideration. Below, the claims of several evolutionary-based theoretical perspectives regarding the function of positive self-regard are summarized.

Evolutionary theory claims that positive self-regard has adaptive value because it increases social fitness (Trivers, 2000). If people think highly of themselves, they are more likely to create a public persona that emanates socially desirable attributes, such as integrity, goodness, honesty and strength. In turn, such individuals are more likely to acquire benefits in their society and enhance their reproductive fitness.

A different body of literature also suggests that self-enhancement may have evolutionary value. People who hold positive self-views, even if they are illusory, are more physically and psychologically healthy than those who do not and are also more able to remain optimistic and persevere in the face of challenges (Colvin, Block, & Funder, 1995). As such, they may be more likely to survive and thrive.

Terror management theory (Solomon, Greenberg, & Pyszczynski, 1991) suggests that positive self-regard may increase people's adaptability to their social environment and, consequently, their quality of life. This theory claims that the knowledge of one's own mortality creates enormous fear and existential angst, and that this fear is only allayed by a strong identification with one's cultural worldview.

One of the strategies people use to increase their sense of belongingness to their cultural worldview is be "good" members of society, or at least perceive themselves to be so. According to this theory, positive self-regard then serves as a buffer against our fear of mortality, a claim which has received substantial empirical support (see Schmeichel & Martens, 2005).

Sociometer theory (Leary, 2005; Leary & Baumeister, 2000) also points out to the evolutionarily adaptive nature of having positive self-regard. In this view, people's self-evaluations, or how they think and feel about themselves, act as a psychological monitor of their social inclusion. Construed as one's eligibility for lasting and desirable personal relationships, social inclusion is critical for survival: Individuals who have ample close social ties are more likely to thrive emotionally and, in the environment in which we evolved, they were more likely to survive. Positive self-evaluations signal that this fundamental need for social belongingness is satisfied, which is why they are desirable and sought after.

The need for positive self-regard seems to be deeply rooted and evolutionarily adaptive, and it is met by engaging in the cognitive distortions described earlier, but also in self-affirmation exercises. By seeking and attending to flattering information in the environment, people maintain an elevated self-worth and repair it when it is damaged.

Perhaps the most intriguing aspect of self-affirmation (and certainly the one that has received the most scholarly attention) is that a simple self-affirmation exercise (i.e., bringing to attention positive and important aspects of the self) diminishes and even obviates the need for engaging in other types of protective cognitive distortions (see Sherman & Cohen, 2006, for a review). Using the earlier examples, self-affirmed individuals are less likely to bask in reflected glory, think of themselves as above average on a score of positive attributes, or think of themselves as impervious to

9

negative effects of the media (more on this in the "effects of self-affirmation" section). In effect, it can be argued that self-affirmation trumps other psychological defense mechanisms in its ego-restorative powers, and as such it may serve a primary function in satisfying the universal need for positive self-regard.

The Form of Self-Affirmation

Earlier the definition of self-affirmation as "the process of bringing to awareness important and positive aspects of the self (e.g., personal values, treasured characteristics, goals)" was introduced. This section will clarify (1) what exactly these positive aspects of the self are and why they have restorative powers; and (2) how the theoretical construct of self-affirmation has been operationalized in experimental settings.

The domains of the self as sources of self-affirmation

The self is comprised of several domains, or self-conceptualizations that are important to the individual (Crocker & Wolfe, 2001). These domains include: social roles (e.g., student, parent), values (e.g., humor, religion), group identities (e.g., race, culture, nation), goals (e.g., health, academic success) and relationships (e.g., family, friends) (see Sherman & Cohen, 2006). A key note is that these self-conceptualizations and their relative importance are culturally determined. For instance, such attributes as being intelligent and autonomous are highly valued in Western cultures, while Eastern cultures tend to prize integration in the community and group memberships more.

These domains of the self can be conceptualized as *contingencies* of a person's self-worth (Crocker & Wolfe, 2001). In other words, having an elevated sense of self-worth and a positive self-regard is contingent on perceiving oneself as adequate or successful in one or several of these important domains (Steele, 1988). Although these contingencies differ from individual to individual and among cultures, research has

shown that personal relationships (i.e., friends and family) are one of the most important contingencies (Creswell et al., 2007).

Self-affirmation can be accomplished by resorting to any of these domains of the self (e.g., religion, career, goals, aspirations), except for the one that has been threatened (Brown & Smart, 1991). For instance, if a student's academic self-concept has been threatened, she can restore her positive self-views by reminding herself of her rewarding relationships with friends and family. This is the case because the self is *flexible*, meaning that it is possible to compensate for failures in one domain by emphasizing successes in others. This ensures that one's view of the self as a whole (i.e., *global* self-integrity) remains positive, although subsets of it have been threatened.

Experimental manipulations

Theoretically, self-affirmation is defined as occurring when people bring to awareness their successes in domains of the self of importance to them. But how has this definition been operationalized in the literature?

McQueen and Klein (2006) performed a meta-analysis of the current operationalizations of self-affirmation. Their work revealed that the most commonly used operationalization is the "value scale" affirmation, first used by Steele and Liu (1983) in their initial test of self-affirmation theory. This method involves asking participants to rank their most important values from a list that is either provided by the experimenter or is generated by the participants themselves. Typical values pertain to such domains as religion, politics, social life, aesthetics and business/economics. This procedure ensures that participants are reminded of their most important values – a critical domain of the self and hence source of self-affirmation.

The next most commonly used operationalization of self-affirmation is the "value essay," which involves asking participants not only to rank their most

11

important values, but also to write a short essay about their first-ranked value and why it is meaningful to them. This provides more extensive cognitive access to the important domains of the self by increasing the time and effort allocated to thinking about them.

Other operationalizations of self-affirmation include 1) writing tasks, where participants are asked to identify and write about a positive characteristic or experience (without the ranking procedure); 2) verbal praise from the experimenter; and 3) an unscrambling task, where the unscrambled sentence constitutes a self-affirming statement. As before, these procedures bring to awareness positive aspects of the self, thus affirming participants' self-concept.

The Effects of Self-affirmation: Laboratory-based Empirical Findings

The central claim of self-affirmation theory (Steele, 1988) is that people have a deep-seated desire to maintain the integrity of the self (i.e., positive global self-evaluations). When this integrity is threatened, they tend to protect the self by engaging in defensive adaptations. One other possible response to the threat, however, is an indirect one: affirm alternative self-resources unrelated to the provoking threat and thus restore the feeling of self-integrity without rationalizing away the specific threat. As such, a classic test of self-affirmation theory is to (1) threaten one aspect of participants' self-integrity; (2) offer them an opportunity to self-affirm an unrelated aspect of the self; then (3) measure the extent to which they engage in defensive adaptations related to the threat. If self-affirmation theory is correct, self-affirmed participants should no longer need to engage in defensive adaptations, because their sense of self-integrity has already been restored by the self-affirmation exercise. This is the classic methodology for testing self-affirmation theory (see McQueen & Klein, 2006).

These predicted effects of self-affirmation exercises have been tested in a variety of settings (for a comprehensive review, see Sherman & Cohen, 2006). A summary of the kinds of threats and defensive responses alleviated by self-affirmation is presented below.

Threatening health information

Health information can be perceived as threatening when it contradicts current health behaviors. For instance, heavy drinkers may perceive information regarding the health hazards of alcohol as threatening, as they do not want to think of themselves as reckless or irresponsible people. As a result, they may engage in defensive responses to minimize the perceived effectiveness of this threat. For instance, they can conclude that the anti-drinking campaign is biased or the statistics behind it are flawed. However, if self-affirmation theory is correct, self-affirmed heavy drinkers should engage in less defensiveness and hence be more accepting of the threatening health information.

Several studies have shown that self-affirmation reduces defensiveness with regard to threatening health information. For instance, self-affirmed coffee drinkers were more likely to accept scientific evidence linking caffeine consumption to breast cancer than non-affirmed coffee drinkers (Sherman, Nelson, & Steele, 2000). Self-affirmed sexually active undergraduates were more accepting of information linking sexual behavior to risk of HIV, and also more likely to purchase condoms than non-affirmed undergraduates (Sherman, Nelson & Steele, 2000). And finally, heavy drinkers who were informed of the link between alcohol and breast cancer were indeed more accepting of this information if they had completed a self-affirmation exercise than if they didn't (Harris & Napper, 2005).

Cognitive dissonance

Cognitive dissonance theory claims that people are motivated to reduce psychological inconsistency, even if this involves distorting their beliefs and perceptions. Self-affirmation theory claims that people whose self-worth and self-integrity is reinforced are more able to cope with threatening information, including psychological inconsistency. If this is the case, then self-affirmation should lessen people's need to reduce cognitive dissonance. Steele, Hopp and Gonzales (1986) applied a classic free-choice cognitive dissonance methodology, where participants ranked ten albums in order of their preference, and then were offered a choice between owning the 5th ranked or the 6th ranked album. This situation usually leads participants to re-rank their preferences, inflating the value of the chosen option and deflating the value of the discarded one. However, self-affirmed participants did not change their attitudes to make them concordant with their choice, suggesting that self-affirmation reduced the need for defensive distortions.

Rumination

While rumination is not a threat itself, it is a response to a perceived threat. Threatening experiences often result in increased thinking about the threat even after the threatening event has occurred (i.e., rumination). By restoring people's confidence in their self-worth, self-affirmation should reduce these unpleasant thoughts (i.e., rumination). Indeed, this was the case: participants who had an opportunity to self-affirm were less likely to engage in ruminative thinking after receiving failure feedback on an intelligence test than participants who did not self-affirm (Koole, Smeets, van Krippenberg, & Dijksterhuis, 1999).

Social comparison and stereotyping

Social comparison and stereotyping are defensive responses to perceived threats. When people's self-worth is brought into question, they often try to make

themselves feel better by resorting to social comparisons that will cast them in a positive light. Such strategies include comparing themselves to a clearly inferior other (Fein, Hoshino-Browne, Davies, & Spencer, 2003) or putting down members of an outgroup (Fein & Spencer, 1997). Self-affirmation should decrease people's need to self-soothe by derogating others. Indeed, Spencer, Fein and Lomore (2001) found that undergraduates who were given bogus negative feedback on an intelligence test preferred to interact with another participant whose intelligence was clearly inferior (thus they engaged in downward social comparison); however, if they were given an opportunity to self-affirm after receiving the negative feedback, they preferred to interact with a clearly intelligent other (thus engaging in upward social comparison). Self-affirmed participants were also less likely to engage in negative stereotypes (Fein & Spencer, 1997) and to make prejudicial judgments of an outgroup member (Zarate & Garza, 2001).

Self-serving and group-serving biases

Perceiving the self and others in a biased way that favors the self at the expense of others is a common strategy employed by the psychological immune system. For instance, when studying athletes' attributions regarding the outcome of a game, Sherman and Kim (2005) found that members of the winning team considered each of their individual performances more important for the team's success than members of the losing team thought their own contributed to their defeat (i.e., self-serving bias). Similarly, the winning team thought that their own performance as a team contributed more to the outcome of the game than losers thought their performance did (i.e., group-serving bias). The authors found that both the self-serving and group-serving biases were eliminated when participants had an opportunity to self-affirm before casting their judgments.

Mechanism of Self-affirmation: Mediators

As illustrated by the above review, the fact that self-affirmation reduces defensiveness in a variety of contexts has received robust empirical support. However, the mechanism through which self-affirmation operates is less clear. Theoretically, self-affirmation is predicted to operate by raising people's global self-integrity (i.e., their global evaluation of the self). But what are the psychological mechanisms involved in this process? Below some mediating variables tested by recent research are reviewed. An important qualifier is that a process as rich and complex as self-affirmation is unlikely to operate through a single mechanism, but rather that it should operate through a consortium of affective, cognitive and motivational processes (Sherman & Cohen, 2006).

Positive affect

It seems reasonable that, by increasing people's sense of self-worth, self-affirmation elevates people's positive affect and mood. In turn, this positive mood may lessen people's defensiveness (see Tesser, 2000). However, numerous studies have disconfirmed this claim. When the values affirmation has been used, no effect of self-affirmation on self-reported mood has been found (Fein & Spencer, 1997; Sherman et al., 2000; Schmeichel & Martens, 2005; Spencer et al., 2001). Additionally, mood manipulations do not produce the same effect as self-affirmations (Steele, Spencer, & Lynch, 1993). A single study (Koole et al., 1999) found that implicit positive affect mediated the effect of values affirmation on rumination.

State self-esteem

Another plausible mechanism behind self-affirmation effects is a boost in state self-esteem, which, by definition, refers to people's current feelings of their own self-worth. Evidence for this claim is weak. Fein and Spencer (1997) found that self-affirmation raised self-esteem, but Schmeichel and Martens (2005), who extensively

tested the impact of self-affirmation on state self-esteem, found no such effects. However, this body of work has only used self-report measures of state self-esteem and it has been suggested that implicit measures might be preferable because of the unconscious nature of self-affirmation processes (Tesser, Crepaz, Collins, Cornell, & Beach, 2000). Future research is necessary to fully investigate the effect of self-affirmation on implicitly measured self-esteem.

Feelings of love towards others

A recent study by Crocker, Niiya and Mischkowski (2008) suggests that the mechanism through which self-affirmation operates is "transcending the self," of simply feeling love towards other human beings. The authors showed that participants who engaged in a values-essay affirmation felt more love and connection towards others than participants who wrote about unimportant values. In a subsequent study, the authors showed that these feelings of love and connection (but not positive feelings about the self, such as pride, content and joy) fully mediated the relationship between self-affirmation and smokers' reduced defensiveness towards anti-smoking materials.

High levels of mental construal

Yet another recent paper (Schmeichel & Vohs, 2009) has identified high levels of mental construal as a mediator of self-affirmation effects. Mental construal refers to the cognitive representation of events, and it can be high (i.e., thinking of the global, superordinate, abstract features of an event) or low (thinking of the local, subordinate and concrete features of an event (Vallacher & Wegner, 1987).

In this study, self-affirmation was shown to restore depleted self-control resources by promoting higher levels of mental construal. Higher levels of mental construal are associated with a focus on long-term goals and the abstract meanings of behavior, which is why it may be enhanced by a self-affirmation exercise. This is the only cognitive mediator proposed in the self-affirmation literature.

Mechanism of Self-affirmation: Moderators

Does self-affirmation work differently for certain people or in certain situations? This section addresses individual differences and cultural differences that have been shown to moderate (see Baron & Kenny, 1986) the relationship between self-affirmation exercises and decreased defensiveness.

Individual differences: Trait self-esteem

Defined as a person's stable and enduring sense of self-worth (Rosenberg, 1965), trait self-esteem has been proposed as a moderator of self-affirmational effects. In other words, it is possible that self-affirmational exercises may have different effects on people low in self-esteem than on those high in self-esteem.

On the one hand, it has been argued that individuals high in self-esteem should reap the most benefits from self-affirmation because, by mere virtue of having high self-esteem, they have more positive self-resources to draw upon in times of distress (Spencer, Josephs, & Steele, 1993; Stone & Cooper, 2001). This *self-resource model* of self-affirmation has received some empirical support. In one study, Steele and colleagues (1993) found that when allowed a moment of self-reflection before receiving threatening information, people with high self-esteem reported significantly less self-justification compared with their low self-esteem peers. Similarly, Nail, Misak and Davis (2004) found that people with greater affirmational resources were more resilient to threats and less likely to defensively rationalize their behavior.

On the other hand, the *self-consistency model of dissonance* (e.g., Aronson, 1968; Aronson & Carlsmith, 1962) argues that individuals high in self-esteem are more likely to react defensively to unfavorable life events, because the gap between their elevated self-perceptions and these events is too great. In this view, self-esteem serves as a barometer, or a standard, of people's expectations of how they should be treated. Self-affirmation exercises may make less of a difference for high self-esteem

individuals, because of the sheer magnitude of their defensive responses. Conversely, low self-esteem individuals engage in less defensiveness and hence may be easier to restore to a state of self-integrity by a self-affirmation exercise. However, these claims have not yet been empirically tested by self-consistency theorists.

Cultural differences

Culture affects self-affirmation outcomes primarily because it affects how the self is conceptualized and experienced (e.g., Heine, Lehman, Markus, & Kitayama, 1999). In Western individualistic cultures, the self tends to be an autonomous and bounded entity, whereas in Eastern collectivistic cultures, the self tends to be more interconnected, defined in relation to group memberships, and contingent upon important relationships. How the self is defined culturally alters the effects of self-affirmation in important ways.

First, culture determines what constitutes an effective self-affirmation. For instance, Hoshino-Browne and colleagues (2005) found that the classic independent self-affirmation, where participants rank values in order of personal importance and then write short essays about them, did *not* have the effect of reducing defensiveness in Asian-Canadian participants. However, a modified version of the values-essay affirmation did. In this interdependent self-affirmation exercise, participants ranked values in terms of how important they were to *themselves and their family* and wrote a paragraph about why this value is shared among them and their families. This type of affirmation had the expected result of reducing defensive responses among participants of Asian origin.

Second, culture determines what constitutes a threat to the ego, because the important domains of the self differ cross-culturally. For instance, Heine & Lehman (1997) showed that the classic free choice dissonance paradigm (described earlier on page 9) elicited ego-protective responses from European-Canadians but not from

Japanese participants, who did not experience the situation as self-threatening. However, Hoshino-Browne and colleagues (2005) found that members of collectivistic cultures (e.g., Asian-Canadians) responded very defensively to a situation that was threatening to their relationships. For instance, in the free-choice paradigm, Asian participants had to make a food choice between comparable options of medium desirability *for their friends* (not for themselves); when they had an opportunity to re-rank the food options, they ranked their initial choice significantly higher, thus exhibiting defensive responses. In contrast, European-Canadians did not feel the need to rationalize a food option they had made for their friends, but they did rationalize a food option they had made for themselves.

Spontaneous Self-affirmations: How Self-affirmation Operates in Everyday Life

The above review on empirical work to date reveals the beneficial outcomes of self-affirmation, but only under very specific circumstances: (1) when the experimenter *instructs* participants to engage in self-affirmational exercises (rather than the participants themselves choosing to self-affirm or not); and (2) when the self-affirmational exercise is pre-determined by the experimenter and typically constitutes ranking a list of values and writing essays about them. This shows how self-affirmation *can* operate, but how *does* it operate in everyday life? Needless to say, people do not list and rank their values, or write short essays about themselves on a daily basis, nor are they instructed by anyone to engage in certain activities in order to make themselves feel better. A crucial question, then, is what are the everyday equivalents of the affirmation manipulations used in laboratory experiments, and when do people spontaneously engage in efforts to restore their self-integrity?

To date, little empirical work has addressed the question of how experimental self-affirmation exercises translate into everyday activities (for reviews, see McQueen & Klein, 2006; Sherman & Cohen, 2006), although it has been suggested that people

use their relationships and significant others as sources of self-affirmation (Lockwood, Dolderman, Sadler, & Gerchak, 2004). The question of *when* people spontaneously engage in self-affirmation efforts is also largely unanswered, although Sherman and Cohen (2006) speculate that "Perhaps the individual returns home and browses the Internet, checking for information on a coming election (affirming their political identity), or examines the scores from last night's game (affirming a valued social identity). In such situations, people may think that they are procrastinating, but this procrastination may serve an important integrity-reparative function." (p. 64). The purpose of this dissertation is to explore how and when people use media, particularly social network sites, to spontaneously self-affirm, and what the perceptual and behavioral consequences of these mediated self-affirmations are.

CHAPTER 3

FACEBOOK PROFILES AS A SOURCE OF SELF-AFFIRMATION

The previous chapter laid out the key tenets of self-affirmation theory. The present chapter considers how these principles may apply to social network sites. Do social network sites have affirming properties, as understood through the lens of self-affirmation theory? This foundational question is addressed by 1) reviewing theory and extant research on the psychological underpinnings of social network use; and 2) reporting results from an empirical study that seeks to establish whether use of social network sites has similar effects to the classic self-affirmation manipulation – ranking and writing essays about important values.

Facebook as a Venue for Self-affirmation

Broadly speaking, social network sites provide a platform for users to connect with others in view of accomplishing personal and professional goals, such as dating (e.g., Match.com, EHarmony), finding employment (e.g., LinkedIn), and keeping in touch with friends and acquaintances (e.g., Facebook, MySpace). Although social network sites have generally acquired a loyal following, Facebook has distinguished itself through its soaring popularity. Currently, it boasts 400 million users (Facebook Statistics) and is the 3rd most visited site in the United States (ComScore Report, 2009). Perhaps more telling than the sheer number of registered users is their level of activity and dedication to the site. According to Facebook Statistics, about half of Facebook users (200 million) log in every day, the average user spends 55 minutes on the site daily, and users post about 60 million status updates a day and six billion photographs every month. Clearly Facebook is a "sticky" site (McGuire, 1974) that invites repeated use and exercises a strong pull on users. But what makes Facebook so attractive and compelling?

In examining the psychological underpinnings of Facebook's popularity, let us begin by taking a closer look at what social network platforms are and what users do on them. boyd and Ellison (2007) describe social network sites, of which Facebook is a prototypical example, along several fundamental dimensions. By definition, these sites allow users to (1) construct a representation of themselves via a public or semi-public profile; (2) articulate a connection with other users (i.e., "friend") by linking their own profile with their friends' profiles; and (3) view and communicate with their list of connections, as well as with other people in the system. As such, the core functionality of social network sites is to facilitate, maintain, and enhance social connectivity (see also Joinson, 2008; Lampe, Ellison, & Steinfield, 2007, 2008).

Users' behaviors on Facebook can be broadly classified into three categories: *identity construction* (i.e., creating a description of the self on the site), *social surveillance* (i.e., viewing others' posted information) and *communication* (i.e., getting in touch directly with other users through a variety of communication tools, such as wall posting, commenting on photographs, emailing and instant messaging). The online profile is the result of both identity construction behaviors and communicative behaviors. Specifically, it contains self-generated descriptions (e.g., photographs, direct statements regarding one's political and religious beliefs, a list of activities and hobbies, affiliation in various groups and social networks, status updates), but also records of communication with friends (e.g., friends' comments on photographs and status updates, comments posted by friends on the profile "wall," photographs added by friends). As such, the profile helps to *enact* social connectivity, by providing information about the self to others and serving as a platform for communication, but also to keep a *record* of this connectivity, by storing and archiving the communications exchanged by users (i.e., wall posts, comments, photographs).

When considering whether Facebook profiles can act as self-affirmations, it is important to examine the type and valence of the information posted on the profile. In line with self-affirmation theory, information is self-affirming only to the extent that it is personally meaningful, positive in nature and perceived as accurate. The following pages consider whether Facebook profiles meet these criteria. Special attention is paid to how the information that gets presented on Facebook profiles is affected by (1) technological factors, such as the design of the site and the ability to revise and record statements; and (2) social factors, such as the motivation to use the site, the presence of an audience and normative rules governing the side.

According to self-affirmation theory, people's sense of self-worth is contingent on several "domains" of the self, such as social roles, personal relationships, treasured activities, values and beliefs (Crocker & Wolfe, 2001). If brought to memory, this personally meaningful information can serve as a resource for self-affirmation. This type of information is prominently featured in Facebook profiles. First, personal relationships are represented through friendship connections, links to family members and significant others, comments made by friends and conversations held with friends and stored on the profile. Second, social roles (i.e., friend, student) are made abundantly clear by the emphasis on friendship connections and membership into educational and local networks (e.g., Cornell University; Ithaca, NY). Indeed, users are invited to join "networks" that indicate their belongingness in important, identity-defining groups. For example, when Facebook was launched, only college students with a verifiable university-operated email account (.edu) could join the system, and their university affiliation was prominently displayed. Nowadays, users still join college and university networks, but they can also claim membership in city and regional networks (for instance, Ithaca, NY). Other group affiliations are also emphasized by the ability to join a whole range of social, special interest, and just-for-

fun groups. Third, users' values (i.e., religious and political beliefs) are often explicitly stated and their treasured characteristics and activities (e.g., traveling, spending time with friends) are prominently displayed and archived in photographic albums.

Importantly, social norms are evolving that mandate high levels of disclosiveness on Facebook. (Gross & Acquisti, 2005; Tufekci, 2008; Young & Quan-Haase, 2009). For example, a large survey of Facebook users has found that 82% of them reveal highly personal information, such as birth date, cell phone number, personal address, political and sexual orientation, and the name of their relationship partner (Gross & Acquisti 2005). Similarly, Lampe and colleagues (2007) have found that Facebook users complete 59% of the self-descriptors available to them and for some they include copious amounts of information. Moreover, many users view disclosure of private information as necessary to make social network sites useful in their mission to connect people (Tufekci, 2008). As such, the amount of personally meaningful information included in a typical Facebook profile is likely to be extensive.

Not only does the layout of the Facebook profile favor personally meaningful information, but its other technological affordances, such as recordability and accessibility, enhance the value of this information. Recordability allows users to "collect" friends and memorabilia from these friends, in the form of wall postings, virtual gifts and other tokens of affection, and photo comments. Over time, these signals of connectivity can accrue substantially. Additionally, this information is tightly packaged and organized in one easily accessible online location, from where users can retrieve it at their convenience.

Although the type of information featured on Facebook appears to be personally meaningful, it can only be self-affirming if it is positive and accurate. Let us first consider the extent to which Facebook profiles represent positive and flattering

versions of the self. Are users motivated to present themselves in a positive light? The fact that they have a large audience who can and do scrutinize their profile suggests that they are indeed motivated to put their best foot forward. Moreover, this audience is made up of important people in one's life (e.g., friends, classmates, coworkers), whom one is typically eager to impress.

But are users *able* to create positive and flattering profiles? As many computer-mediated applications, Facebook profiles provide users with important technological affordances in the process of profile construction, such as *asynchronicity* and *editability* (see Walther, 1996, 2007). Asynchronicity ensures that users can take as much time as they want in crafting their self-presentation, whereas editability enables them to revise the information until they are satisfied with it. Importantly, editability allows Facebook users to manage information that is both posted by themselves and by their friends. Friends' undesirable statements or behavioral residues (i.e., photograph tags, events) can easily be deleted by the profile owner. Moreover, editability allows for friendship relationships to be terminated at the click of a button, in case Facebook users no longer wish to maintain an online connection with certain people. Together, asynchronicity and editability allow Facebook users to engage in *selective self-presentation* (Walther, 2007), an optimized version of face-to-face self-presentation, that allows increased control and thoughtfulness over self-presentational acts. For instance, face-to-face communicators cannot take back a social gaffe, such as inadvertently making a rude comment, but online communicators can. Research on self-presentation in a similar social network site - online dating, suggests that users do take advantage of this high degree of control to create profiles that are flattering and strategic (Hancock & Toma, 2009; Toma & Hancock, 2010; Toma , Hancock, & Ellison, 2008).

Just as profile owners are expected to present self-enhancing and positive aspects of themselves, their friends are expected to contribute equally positive information to the profile. Social norms are evolving whereby commentary made by friends on one's profile is warm, supportive and validating, even in response to mundane status updates (Sas, Dix, Hart, & Su, 2009).

Let us now turn our attention to the final criterion for self-affirming information: accuracy. Needless to say, if the self-presenter knows the information to be inaccurate, it cannot serve as a useful resource for self-affirmation.

Online communication has a long history of being regarded as rife with deception (for a review, see Hancock, 2007). Because online communicators present themselves and communicate with others in a disembodied fashion – that is, without being physically present, it is theoretically easy for them to lie. However, the fact that lying is technologically effortless does not mean that it is a good tactic for accomplishing one's agenda. This line of thinking has led more recent research to identify the *constraints* to online deception, that serve to keep online information accurate in spite of the facility with which deception could be enacted.

One such constraint is the possibility to connect online selves with real-world personas. This bridging of information, or "warranting" (Walther & Parks, 2002; Walther, van der Heide, Hamel, & Schulman, 2009), makes deception easily detectable by people who know the communicator both in person and online. For instance, research on online dating has shown that self-presenters created more accurate profiles if their friends and acquaintances had access to the profile (Toma et al., 2008). Similarly, in Facebook, profiles are available for scrutiny to a large audience of friends, neighbors, classmates, teachers and other relevant people in users' lives, and users believe that these people do examine their profiles (Lampe et al., 2008). Since many of these social connections know the self-presenter well, they are

able to both recognize deceptions and publicly call out the self-presenter on these lies on the profile "wall." When the likelihood of being caught lying is high, as it is on Facebook, users are expected to present themselves honestly.

Another constraint to deception is more technological in nature. Some self-presentational aspects are rendered hard to fake by the design of the site. For instance, membership to a restricted network, such as a university, can only be claimed by users who have a valid email address within that network (e.g., a Facebook user can only claim to be a Cornell student if she has a @cornell.edu email address, to which the account opening information is sent). Similarly, friendship with other users cannot be claimed unless those users confirm the friendship request. These hard to fake cues have been dubbed "assessment signals" by signaling theory (Donath, 1999), because they can generally be relied on to be accurate.

Finally, the co-construction of profile information makes it less susceptible to deception. As discussed earlier, many profile elements are contributed by friends – comments on photographs, wall posts and status updates, photographs, invitations to events, gifts, etc. These "public displays of connection" (Donath & boyd, 2004) cannot be manufactured by the profile owner, and as such they are honest and valuable indicators of social connectivity and support.

In support of these claims, recent research has found that Facebook profiles do represent a veridical portrayal of their owners. For instance, Back and colleagues (2010) have found that Facebook users present themselves in a realistic rather than idealized manner, and that observers can form accurate impressions of others' personality based on a perusal of their Facebook profiles. Additionally, research on a similar social network site – online dating, has found self-presentational lies to be small and relatively benign (Toma et al., 2008).

To summarize, Facebook profiles emphasize important domains of the self (particularly social relationships), and the information contained in them tends to be positively valenced and accurate. It is then plausible to expect Facebook profiles to have self-affirmational value for their owners. Because it reminds people of their treasured social connections, group memberships and important values and goals, Facebook may serve an ego-boosting function and may constitute an everyday outlet for self-affirmation. Additionally, Facebook profiles have a large audience, which may render the information they contain particularly persuasive. Research suggests that self knowledge may be acquired by looking at ourselves through the eyes of others, a process known as the "looking glass self" (Cooley, 1902) or "reflected appraisals" (boyd, 2006). If users make positive statements about themselves in front of hundreds of their friends, they may be more likely to internalize them than if they made such statements in private (see also Gonzales & Hancock, 2008).

Current study

This study investigates the possibility that Facebook profiles are self-affirming by using the defensiveness-reducing paradigm articulated by self-affirmation theory. Recall that self-affirmation theory claims that people tend to respond to ego threats by engaging in defensive responses, and that self-affirmation diminishes these responses because it restores alternative sources of self-worth. If Facebook profiles are self-affirming, they should also reduce people's need to engage in defensive responses. To test this claim, a three-step procedure is used: 1) participants' egos are threatened; 2) participants are given a chance to view their own Facebook profiles (experimental condition) or a stranger's profile (control condition); and 3) participants' defensive responses to the threat are measured. If participants in the experimental condition exhibit fewer defensive responses than participants in the control condition, it may be concluded that Facebook is self-affirming.

To further investigate the self-affirming properties of Facebook, this study also directly compares the effect of Facebook profile exposure to that of a well-established self-affirmation manipulation, where participants are asked to rank and write essays about their most important values (see Chapter 2). The same procedure described above is employed, but step two is replaced with the values-essay self-affirmation exercise. Do Facebook profiles operate similarly to the classic self-affirmation manipulation, or are their effects intensified or reduced?

Another question addressed in this study concerns the mechanism of Facebook self-affirmation. If Facebook does have self-affirming properties, how exactly does it operate? One possibility raised by self-affirmation research is that self-affirming exercises make people feel more loving and this, in turn, makes them more secure and less defensive (Crocker et al., 2008). Another possibility suggested by research on social networks is that Facebook profiles make people feel more loved, connected and supported (Kramer, 2010; Sas et al., 2009), and it is these positive emotions that may be ego restorative. Both possibilities are investigated in this study.

Methods

Participants and recruitment

Participants were undergraduate students at Cornell University who were enrolled in Communication or Psychology courses ($N = 98$, 68% women; mean age = 19.81). Participants were recruited through an online portal that advertises ongoing research studies (www.susan.cornell.edu) and were compensated for their participation with extra-credit in their courses. Ten participants were excluded from the analyses because they were suspicious of the true purpose of the study ($N = 5$) or because they were not Facebook users ($N = 5$), reducing the effective sample size to $N = 88$.

Manipulations

The experiment was set up as a 2 (self-affirmation manipulation: affirmed vs. non-affirmed) x 2 (type of self-affirmation: Facebook vs. values-essay). Henceforth the values- essay self-affirmation will be referred to as the *classic self-affirmation manipulation.* This resulted in four conditions: 1) Facebook self-affirmation, where participants were presumably self-affirmed by spending time on their own Facebook profiles ($N = 21$); 2) Facebook control, where participants spent time on a stranger's Facebook profile and were presumably not self-affirmed ($N = 24$); 3) classic self-affirmation, where participants were self-affirmed by ranking and then writing a short essay about their values ($N = 22$); and 4) classic control, where participants ranked and wrote essays about the values of the "average college student" and were hence not self-affirmed ($N = 21$). These conditions are described in detail below.

In the Facebook self-affirmation condition, participants were told they would take part in a "website evaluation" study, which involved spending five minutes on a website and then answering a few questions about it. They were then informed that the website they had been assigned to examine was their own Facebook profile. Instructions specified that they could view any element of their profile (e.g., photographs, wall comments, list of friends), but they could not navigate to somebody else's profile. At the end of the study, participants in this condition were asked to temporarily befriend the experimenter, so that the latter could have access to their profile information. All participants acquiesced to this request.

In the Facebook control condition, participants were given the same instructions but were asked to spend 5 minutes examining *a stranger*'s Facebook profile. This stranger was in fact a participant in the Facebook self-affirmation condition, who had provided access to his/her profile by befriending the experimenter. The two conditions were yoked such that the first person in the Facebook control

31

condition viewed the profile of the first person in the Facebook self-affirmation condition, the second person in the Facebook control condition viewed the profile of the second person in the Facebook self-affirmation condition, and so on. This procedure ensured that, as a group, participants in the Facebook self-affirmation condition viewed exactly the same information as participants in the Facebook control condition. Additionally, care was taken that participants in the Facebook control condition not be acquainted with the people whose profile they were viewing, eliminating the potential self-affirming effects of viewing a friend's Facebook profile.

The classic self-affirmation condition replicated the most commonly used self-affirmation manipulation in laboratory settings (McQueen & Klein, 2006): participants were asked to rank six values in the order of personal importance (business, art-music-theater, social life-relationships, science – pursuit of knowledge; religion – morality; government – politics) and then write a short (i.e., five-minute) essay about why the highest ranked value was important to them.

In the classic control condition, participants also ranked these values in the order of personal importance, but they were asked to write an essay about why their *lowest* ranked value was important to the *average college student*, not to themselves.

Procedure

Because self-affirmation occurs nonconsciously, participants were given a cover story about the purpose of the study. The cover story was adapted from Swann and colleagues (Swann, De La Ronde, & Hixon, 1994) and involved asking participants to engage in a challenging task, give them fake negative feedback and then assess how self-affirmation moderates their defensive responses to the feedback.

Participants were told that Cornell University's Center for Distance Education (a fictional establishment) was considering creating a distance-learning equivalent of the popular undergraduate public speaking course. Because a public speaking course

requires students to be assessed on a number of live speaking performances, the Center for Distance Education was ostensibly concerned about the success of using a distance-learning platform and had hired the research team to pilot it. In particular, the main concern was whether students would receive adequate feedback and grading on their broadcast speeches. As Cornell undergraduates, participants were asked to help pilot this course during the research appointment.

Participants were asked to prepare a short speech (a common assignment in this course) and deliver it live through a web camera to another participant (i.e., the evaluator), whose task was to provide written feedback on the participant's speech. Afterwards, the participant would rate the fairness and usefulness of this feedback. Was the feedback accurate? Was the evaluator able to form a good impression of the participant's public speaking abilities in spite of not being physically present to watch the speech? Is distance-learning an appropriate venue for a public speaking course? These items were also adapted from Swann et al. (1994). Participants were told that the evaluator was a fellow student, rather than a public speaking expert, so that participants felt comfortable questioning the adequacy of the feedback.

Participants were asked to prepare a short (3-5 minutes) persuasive speech on the legality of abortion, a common topic in public speaking courses. They were given five minutes to prepare the speech. Afterwards, a research assistant helped set up a video camera whose visible wires connected it to another room (where the evaluator was ostensibly located). The research assistant turned the camera on and, together with the participants, tested it to make sure it works properly. This ensured that participants believed the cover story and took their speaking assignment seriously. The research assistant then exited the room in order to give participants privacy during speech delivery. In reality, the research assistant surreptitiously watched participants through

a one-way mirror to ensure they were in fact delivering the speech. All participants did.

When the speech was completed, the research assistant informed the participants that the evaluator needed a few minutes to write the feedback. During this time, participants were given the option to help out with a short, unrelated study and thus double their extra-credit points. All participants agreed. This "unrelated" study was in fact the self-affirmation manipulation and it was run by a different research assistant to ensure that participants did not realize the two studies were connected. Participants were randomly assigned to one of the four manipulation conditions.

The first research assistant then returned with a sealed envelope containing participants' feedback on the speech. All participants were given the same generic negative feedback, written in such a way that it could plausibly apply to most speeches (see Appendix). A manipulation check confirmed that the feedback was perceived as negative ($M = 2.94$, $SD = 1.50$, on a scale from 1 – not at all positive to 9 – a great deal positive), regardless of whether participants were affirmed ($M = 3.12$, $SD = 1.55$) or not ($M = 2.78$, $SD = 1.46$). Participants were asked to carefully read the feedback and then fill out a questionnaire assessing its validity. To minimize face-saving concerns, they were told that the feedback was completely confidential and no one in the research team would ever read it. The research assistant then left the room to give participants privacy.

Participants were debriefed using a funnel procedure, which checked whether they had suspicions about the true purpose of the study. Suspicious participants were eliminated from the analyses ($N = 5$).

Measures

Several measures were collected. First, participants filled out a trait self-esteem measure (Rosenberg, 1965; see Appendix) prior to the beginning of the public

speaking task. Second, participants filled out an affect measure (see Appendix) immediately after the self-affirmation manipulation. This measure assessed how participants "currently feel" and involved rating how much they were experiencing twenty possible feelings on a scale from 1 (not at all) to 5 (extremely). The feelings were both positive (e.g., loving, joyful, giving) and negative (e.g., scared, sad, confused, angry), self-directed (e.g., proud, content, vulnerable) and other-directed (e.g., loving, giving, empathic, grateful). This measure was borrowed verbatim from Crocker and colleagues (Crocker et al., 2008), with the addition of three self-directed positive feelings (connected, loved, supported).

Third, participants' rated their assessment of the feedback immediately after reading it. Whether participants tended to reject (i.e., engage in defensive responses) or accept (i.e., reduce their defensive responses) the feedback constitutes the dependent measure of the study. Participants rated the feedback across five dimensions: 1) the perceived accuracy of the feedback (e.g., how accurate do you think the feedback was? How much do you agree with it?) (5 items; $\alpha = .88$); 2) the perceived competence of the evaluator (e.g., rate to what extent the evaluator is an accurate evaluator of other people's public speaking abilities) (3 items; $\alpha = .96$); 3) the appropriateness of the task (e.g., how useful do you think videoconferencing is for assessing people's public speaking abilities?) (2 items; $\alpha = .86$); 4) attribution of the feedback to themselves or someone else (e.g., do you think the feedback you received today is a result of your actual public speaking abilities, or of the evaluator's personal way of judging others) (3 items; $\alpha = .88$); and 5) attraction to the evaluator (how much do you think you would like the person who wrote this feedback?) (2 items; $\alpha = .88$). All items were measured using a scale from 1 (not at all) to 9 (a lot). This measure was adapted from Swann et al. (1994) and is fully described in an Appendix.

Lastly, participants in the Facebook self-affirmation condition completed measures of their Facebook use, such as their satisfaction with their Facebook self-presentation, the accuracy of their self-presentation and the amount of time they typically spend on Facebook (see Appendix). This measure verified whether participants' profiles were indeed positive and accurate, and thus had the potential of being self-affirming.

Procedure summary

A summary of the sequence of steps involved in the experiment is provided below. Participants engaged in the following activities:

1) fill out Rosenberg's trait self-esteem measure

2) prepare a speech on the legality of abortion (5 minutes)

3) deliver the speech (3-5 minutes)

4) complete one of the four self-affirmation manipulations (examine own Facebook profile; examine a stranger's profile; write essay about most important value; or write essay about least important value).

5) fill out the affect measure

6) receive and read the feedback

7) rate the usefulness of the feedback

8) fill out a measure of Facebook use (only participants in the Facebook conditions)

9) receive funnel debriefing and compensation.

Results

Is Facebook self-affirming?

The key claim of self-affirmation theory is that self-affirmation reduces defensive responses. In this study, defensive responses were operationalized as participants' reaction to negative feedback and were measured along several

dimensions: perceived accuracy of feedback, evaluator competence, task diagnosticity, attribution and attraction to the evaluator. Because these five dependent measures were highly correlated to each other (see Table 3.1), they were averaged to form one composite index – the acceptance of feedback. High acceptance of feedback indicates low defensive responses. The index was highly reliable ($\alpha = 0.88$).

Table 3.1: Correlations between the dependent variables used in Study 1

	Feedback accuracy	Evaluator competence	Task diagnosticity	Attribution	Attraction to evaluator
Feedback accuracy	1.00				
Evaluator competence	0.82*	1.00			
Task diagnosticity	0.56*	0.53*	1.00		
Attribution	0.58*	0.44*	0.54*	1.00	
Attraction to evaluator	0.64*	0.68*	0.35*	0.42*	1.00

*Correlation significant at the p < 0.001 level (two-tailed)

To test the hypotheses, an analysis of covariance was set up with the self-affirmation manipulation (affirmed or non-affirmed) and self-affirmation venue (Facebook or classic) as the between-subjects factors and trait self-esteem as a continuous covariate. As expected, self-affirmed participants were more accepting of the feedback than non-affirmed participants, thus demonstrating reduced defensive

responses [$F(1, 83) = 27.88$, $p < 0.001$]. But did the venue of self-affirmation matter? Results show that it did not [$F(1, 83) = 0.01$, *ns*], with participants spending time on Facebook behaving similarly to participants who completed the values-essay manipulation. Importantly, there was no interaction between the self-affirmation manipulation and the venue of self-affirmation [$F(1, 83) = 0.61$, *ns*], indicating that self-affirmation operated similarly on both venues (Facebook and classic). These effects were observed regardless of participants' trait level of self-esteem [$F(1; 83) = 3.70$, *ns*]. Means and standard deviations for each cell are presented in Table 3.2, and a graphical representation of the results is presented in Figure 3.1. Additionally, means and standard deviations for each of the five dependent measures that formed the acceptance of feedback composite index are included in Table 3.3.

Table 3.2: Means and standard deviations for the acceptance of feedback composite index in each condition*

| | *Self-affirmation manipulation* | | | |
| | Affirmed | | Not Affirmed | |
Self-affirmation venue	*M*	*SE*	*M*	*SE*
Facebook	5.91	1.10	4.31	1.57
Classic	5.53	1.31	4.32	1.26

*Values are calculated with trait self-esteem entered as a covariate.

38

Table 3.3: Means and standard errors for the dependent variables in each condition*

| | | Self-affirmation manipulation | | | |
| | | Affirmed | | Not Affirmed | |
Dependent Variables	*Self-affirmation venue*	M	SE	M	SE
Perceived accuracy of feedback	Facebook	5.90	0.38	4.36	0.37
	Classic	6.10	0.38	4.87	0.38
Perceived competence of the evaluator	Facebook	6.74	0.40	4.66	0.38
	Classic	6.72	0.40	5.24	0.40
Task Diagnosticity	Facebook	5.68	0.45	4.10	0.43
	Classic	5.36	0.45	3.65	0.45
Attribution	Facebook	5.86	0.28	4.11	0.27
	Classic	5.12	0.28	4.02	0.28
Attraction to evaluator	Facebook	5.30	0.36	3.69	0.35
	Classic	4.91	0.36	4.05	0.36

*Values are calculated with trait self-esteem entered as a covariate
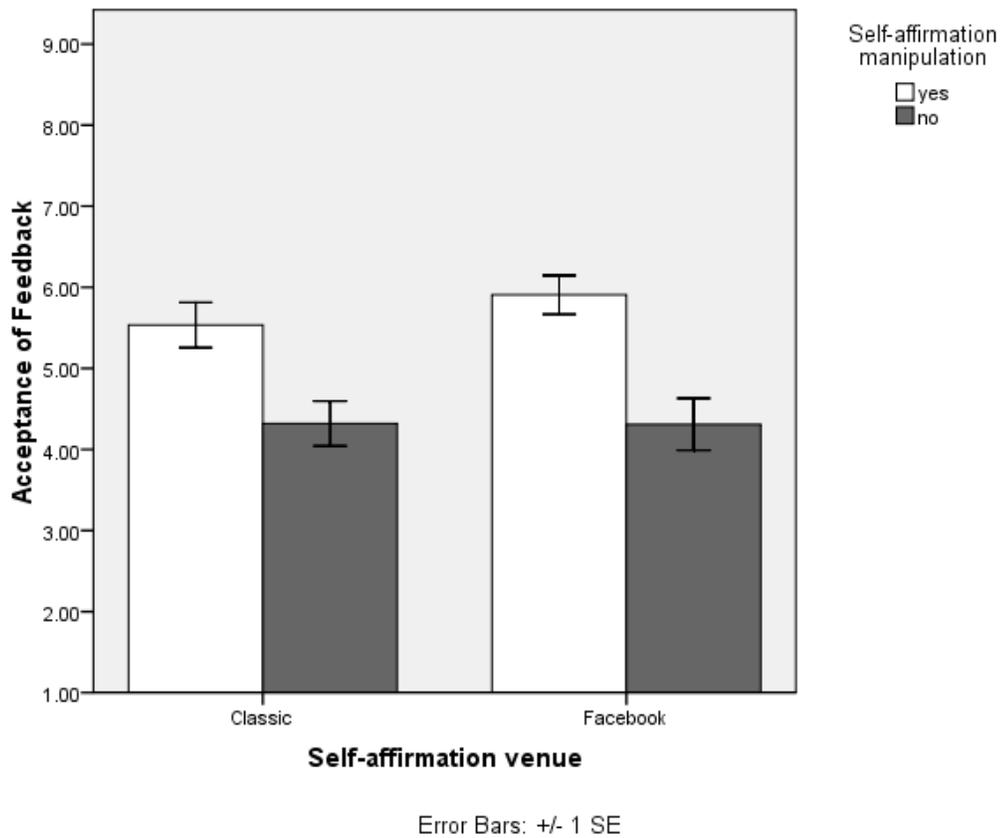
Figure 3.1: Acceptance of feedback by condition

Note: The dependent measure on this graph is the average of the five dependent measures used (perceived accuracy of feedback, perceived competence of the evaluator, task diagnosticity, attribution and attraction to the evaluator).

To summarize, these results show that participants examining their own Facebook profiles exhibited fewer defensive responses compared to participants examining a strangers' profile, and in fact acted similarly to participants completing a classic self-affirmation manipulation.

Effects of Facebook on affect

After completing the experimental manipulation, participants completed a self-report affect measure that recorded their current feelings. How did spending time on their own Facebook profile impact affect compared to spending time on a stranger's profile? Participants who had just reviewed their own profiles felt more loving, giving, connected, loved, supported, grateful, proud and clear than participants who reviewed a strangers' (see Table 3.4). Participants affirmed via the values-essay only reported feeling more supported than their non-affirmed counterparts; no differences emerged for the other feelings (see Table 3.5).

Table 3.4: Means, standard deviations and t-tests comparisons for the affect experienced by participants in the Facebook self-affirmation and Facebook control conditions.

	Affirmed		Not Affirmed			
	M	*SD*	*M*	*SD*	*t*	*p*
Loving**	3.19	1.26	2.21	1.06	2.56	0.01
Joyful**	3.58	0.81	2.67	1.20	2.91	0.006
Giving*	3.00	1.18	2.29	1.12	2.06	0.05
Empathetic	2.95	1.02	2.46	1.06	1.58	0.12
Connected***	3.81	1.25	2.54	1.02	3.75	0.001
Loved***	3.86	1.06	2.33	1.13	4.64	0.000
Supported***	4.00	0.95	2.54	1.18	4.53	0.000
Sympathetic	2.76	0.89	2.38	1.13	1.26	0.23
Grateful**	3.71	1.19	2.71	1.27	2.73	0.009
Proud**	3.71	1.15	2.79	1.14	2.70	0.01
Content	3.90	1.00	3.33	1.05	1.87	0.07
Clear*	3.38	0.67	2.75	1.19	2.15	0.04
Vulnerable	2.05	.86	1.71	0.86	1.32	0.19
Critical	2.05	.92	2.38	1.10	-1.08	0.29
Humble	2.33	.86	2.29	1.23	0.13	0.90

Table 3.4 (continued)

	Affirmed		Not Affirmed			
Selfish	2.00	1.14	1.88	1.08	0.38	0.71
Scared	1.24	0.54	1.29	0.55	-0.33	0.74
Sad	1.57	0.87	1.50	0.83	0.28	0.78
Confused	1.76	1.14	2.04	1.16	-0.82	0.42
Angry	1.10	0.30	1.21	0.41	-1.03	0.31

*Difference significant at the p < 0.05 level (two-tailed)

**Difference significant at the p < 0.01 level (two-tailed)

***Difference significant at the p < 0.001 level (two-tailed)

Table 3.5: Means, standard deviations and t-tests comparisons for the affect experienced by participants in the classic self-affirmation condition and the classic self-affirmation control condition.

	Affirmed		Not Affirmed			
	M	SD	M	SD	t	p
Loving	3.68	1.04	3.48	1.08	0.63	0.53
Joyful	3.45	1.05	3.43	0.99	0.08	0.93
Giving	3.64	0.95	3.38	1.07	0.83	0.41
Empathetic	2.95	1.05	3.48	1.03	-1.64	0.11
Connected	3.73	1.16	3.71	1.06	0.04	0.97
Loved	4.10	0.92	3.62	0.92	1.68	0.10
Supported*	4.45	0.51	3.86	0.85	2.80	0.008
Sympathetic	3.27	1.12	3.48	1.03	-0.62	0.54
Grateful	4.18	1.18	3.81	0.98	1.12	0.25
Proud	3.95	1.09	3.43	0.98	1.66	0.10
Content	4.05	0.90	3.90	1.09	0.46	0.65
Clear	3.55	1.06	3.62	1.02	-0.23	0.82
Vulnerable	2.55	1.26	2.10	0.94	1.32	0.19
Critical	2.55	1.14	2.14	0.91	1.27	0.21
Humble	3.45	1.18	3.14	1.06	0.91	0.37
Selfish	2.05	1.17	1.76	0.94	0.87	0.39
Scared	2.05	1.21	1.48	0.60	1.93	0.06
Sad	1.86	1.08	1.52	0.75	1.19	0.24
Confused	2.23	0.92	1.76	1.04	1.55	0.13
Angry	1.45	0.91	1.19	0.40	1.22	0.23

*Difference significant at the p < 0.01 level (two-tailed)

Participants who were affirmed by examining their own Facebook profiles experienced the same type of affect as participants who were affirmed by writing about their most important values. Two exceptions emerged: participants spending time on their own Facebook profiles felt less humble [$t(41) = -3.54$, $p = 0.001$] and less scared [$t(41) = -2.80$, $p = 0.008$] than participants writing an essay about their most important values.

Together, these analyses suggest that, when participants were affirmed, Facebook profile exposure produced the same positive affect as writing about important values. However, participants who viewed a stranger's profile (Facebook control) experienced less positive affect than participants who wrote about a stranger's values (classic control).

Mediational analyses

One of the goals of the present study was to investigate whether positive affect (both self-directed and other-directed) mediates the relationship between self-affirmation and reduced defensiveness. Baron and Kenny's (1986) mediation analysis procedure was employed to investigate this research question. This mediational model involves four necessary steps: 1) show that the initial independent variable (in this case, the self-affirmation manipulation) is correlated with the dependent variable (here, acceptance of negative feedback); 2) show that the initial independent variable is correlated with the mediator (i.e., affect); 3) show that the mediator is correlated with the dependent variable; and 4) in a regression model using the dependent variable, the initial independent variable and the mediator as an additional independent variable, show that the effect of the initial independent variable is either zero (which is consistent with complete mediation) or reduced compared to what it was in step 1) (which is consistent with partial mediation). All steps need to be met in order for

mediation to occur. Figure 3.2 illustrates the causal paths tested in the mediational model.
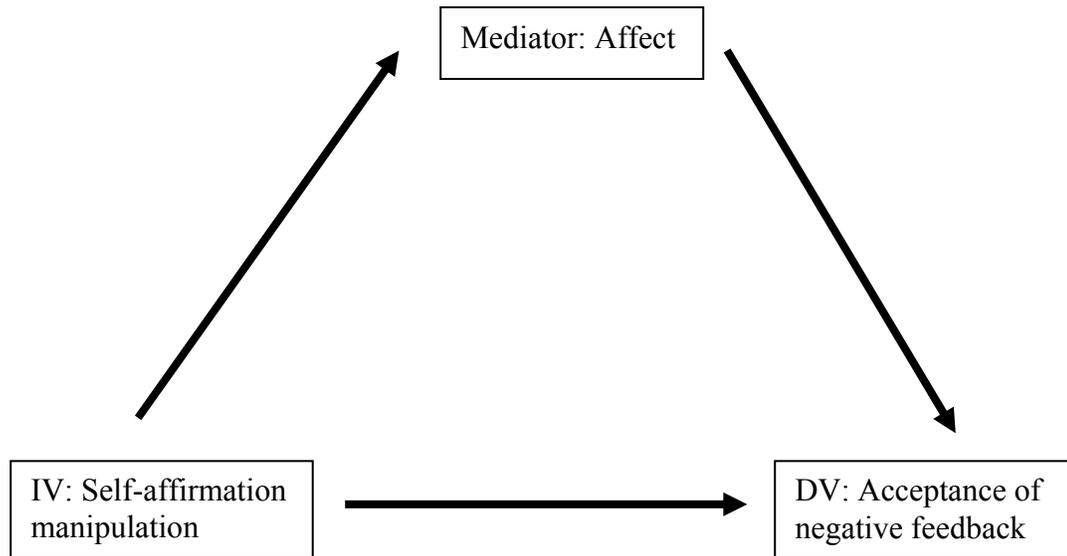
Figure 3.2: Baron & Kenny's mediational model for Study 1

Because it is plausible that Facebook self-affirmation operates through different mediators than the values-essay self-affirmation, mediational analyses were conducted separately for the two venues of self-affirmation. Consider first the potential mediational role of affect when the classic self-affirmation manipulation is employed. The previous analyses confirm the relationship between self-affirmation and the dependent variable ($r = -0.41$, $p = 0.007$), thus fulfilling step one. To test step two of the model, Spearman's correlations were computed between the self-affirmation manipulation and the measures of affect, revealing that self-affirmed participants felt more loved ($r = 0.30$, $p < 0.05$) and more supported ($r = 0.38$, $p < 0.01$). However, self-affirmed participants did not feel more loving ($r = 0.11$, *ns*), thus failing to replicate the findings of Crocker and colleagues (2008). To test step three,

the correlation between the dependent variable and the positive feelings of "loved" and "supported" was assessed, but it did not yield any significant results ($r = 0.10$, ns, for "loved;" $r = 0.15$, ns, for "supported"). Since step three of Baron and Kenny's mediational model was not met, the mediational role of affect was not supported in this dataset.

Consider next the potential mediational role of affect when the Facebook self-affirmation manipulation is employed. The previous analyses confirm the relationship between Facebook self-affirmation and the dependent variable, thus fulfilling step one ($r = -0.52$, $p < 0.001$). To test step two of the model, Spearman's correlations were computed between the Facebook self-affirmation manipulation and the affect measures, revealing that participants who had spent time on their own Facebook profiles felt more loving ($r = 0.37$, $p < 0.01$), more joyful ($r = 0.40$, $p < 0.006$), more giving ($r = 0.30$, $p < 0.05$), more connected ($r = 0.49$, $p < 0.001$), more loved ($r = 0.59$, $p < 0.001$), more supported ($r = 0.58$, $p < 0.001$), more grateful ($r = 0.39$, $p < 0.008$), more proud ($r = 0.39$, $p < 0.009$), and more content ($r = 0.31$, $p < 0.04$) than participants in the control condition. This satisfied step two of the model. To assess the viability of step three, correlations were calculated between these positive feelings and the dependent measure. However, no significant results emerged ($r = 12$, ns, for loving; $r = 0.02$, ns, for joyful; $r = 0.05$, ns, for giving; $r = 0.09$, ns, for connected; $r = 0.17$, ns, for loved; $r = 0.19$, ns, for supported; $r = 0.05$, ns, for grateful; $r = 0.07$, ns, for proud; $r = 0.02$, ns, for content). Since step three was not met, the data failed to support the mediational role of affect for the Facebook manipulation.

Discussion

This study set out to test whether Facebook profiles have self-affirming value. A vast body of literature demonstrates that people are motivated to maintain positive self-regard and that self-affirmation, or the process of reminding themselves of the

positive and meaningful aspects of their lives, fulfills this psychological need (see Steele, 1988). Yet most studies to date have demonstrated the effects of self-affirmation only in the laboratory, using a procedure that is rarely if ever employed in real life: rank one's most important values and then write a brief essay about the most important one of them (McQueen & Klein, 2006). The present study shows that Facebook, a social network site where users construct profiles of themselves and connect with friends (boyd & Ellison, 2007), can serve as an everyday source of affirmation.

The self-affirming properties of examining one's own Facebook profile were demonstrated by employing the defensiveness-reducing paradigm of self-affirmation effects. Self-affirmation theory claims that, when confronted with a threat to the ego, people engage in defensive responses that allow them to maintain their elevated self-regard. Since self-affirmation fulfills people's psychological need for positive self-regard all by itself, it reduces or obviates their need to protect themselves through defensive responses. Hence, the standard procedure for establishing whether a certain activity is self-affirming is showing that it decreases people's tendency to react defensively when confronted with a threat to the ego (McQueen & Klein, 2006; Sherman & Cohen, 2006). Using this well-established test of self-affirmation effects, this study demonstrated that spending five minutes examining one's own Facebook profile significantly decreased defensive responses. Participants' academic self-concept, which is a critical dimension of identity for students at Cornell University, was threatened by negative feedback on a public speaking task. Participants were then given a chance to restore their feelings of self-worth by derogating the feedback, blaming the evaluator, or blaming the technology involved in the task (i.e., videoconferencing). As expected, participants who were self-affirmed by having spent time on their own carefully crafted Facebook profiles had less of a psychological need

46

to derogate the feedback than participants who examined a stranger's profile. Indeed, participants who had perused their own profiles were more likely to take responsibility for their own performance and less likely to blame others.

The effects of Facebook exposure were also directly compared to those of a classic type of self-affirmation – the values-essay, where participants rank and write short essays about their most important values. The values-essay is one of the most widely used type of self-affirmation and its self-affirming effects are very well documented (McQueen & Klein, 2006). In the experimental paradigm described earlier, where participants' academic self-concept was threatened by negative feedback on a public speaking task, the behavior of participants who spent time on Facebook was virtually identical to the behavior of participants who completed the values-essay self-affirmation. Together, these two sets of results suggest that examining one's own Facebook profile is indeed a self-affirming activity. One important observation is that not all Facebook activities are self-affirming. Recall that users engage in a variety of activities on Facebook, including examining their own profiles, examining others' profiles (i.e., social surveillance), directly communicating with others, or constructing and updating profiles. The present study only speaks to the self-affirming properties of examining one's own Facebook profile.

This study also attempted to identify the psychological mechanism through which Facebook self-affirmation operates. Based on previous research on self-affirmation (Crocker et al., 2008), it was proposed that a self-affirmation exercise may prompt people to feel more "loving" towards others and transcend the self. Based on research on social network sites (Kramer, 2010; Sas et al., 2009), it was proposed that spending time on Facebook makes people more connected, loved and supported and, in turn, these self-directed positive feelings may lead to self-affirmation. As expected, spending time on one's own Facebook profile did have a plethora of positive

emotional outcomes: participants felt more connected, loved, supported, giving, grateful and proud. Yet none of these positive feelings mediated the relationship between spending time on Facebook and being self-affirmed, suggesting that a different mechanism is responsible for the psychological benefits of Facebook. Furthermore, participants in this study did not report feeling more "loving," either when completing the Facebook self-affirmation or the values-essay self-affirmation, thus failing to replicate Crocker and colleagues' (2008) findings.

Uses and effects of social network sites

The popularity of social network sites and of Facebook in particular is nothing short of spectacular. For instance, Facebook's 400 million users spend nearly an hour on the site every day and contribute copious amounts of content. What makes Facebook so attractive and compelling? Research to date has identified a series of "gratifications" (Joinson, 2008), or benefits users derive from social network sites. The majority of these gratifications are *interpersonal* in nature, and include social connection (e.g., finding out what old friends are doing now, reconnecting with people one has lost contact with), shared identities (e.g., organizing or joining events, communicating with likeminded people) and social investigation (e.g., virtual people watching, meeting new people) (Joinson, 2008; see also Stafford, Stafford, & Schkade, 2004). Emerging research has also identified *intrapersonal* gratifications of social network sites, or how SNSs affect people's self-concept and self-esteem. For instance, Valkenburg, Peter, & Schouten (2004) found that receiving positive feedback on SNSs increased users "social self-esteem," measured as their perceptions of their physical appearance, close relationships and romantic appeal. Similarly, Gonzales & Hancock (in press) found that participants who examined and updated their own Facebook profiles reported higher general self-esteem, as measured by Rosenberg's (1965) self-esteem scale, than participants who looked at themselves in a mirror.

The present study contributes to this stream of research by uncovering additional intrapersonal gratifications users derive from spending time on their Facebook profiles: experiencing more positive emotions, both self-directed (loved supported, connected) and other-directed (grateful, giving) and maintaining an elevated sense of self-worth. The latter translates into further psychological benefits: reduced defensiveness when confronted with the inevitable slights and challenges of daily life. The participants in this study reported more willingness to take responsibility for their own actions and less inclination to blame others for their failure. Further research is necessary to establish whether these perceptual benefits are accompanied by behavioral benefits: do self-affirmed participants actually learn from their mistakes more and improve their performance?

Contributions to self-affirmation theory

Self-affirmation is one of the most researched areas in social psychology. For instance, Steele's initial conceptualization of self-affirmation theory (Steele, 1988) has been cited over 1,200 times, according to Google Scholar. Yet the majority of these studies use "artificial" types of self-affirmations: while in the lab, participants are asked to rank and/or write essays about their most important values (McQueen & Klein, 2006). Although self-affirmation theory posits that people are motivated to affirm themselves in their everyday lives, not just in the lab (Steele, 1988), it is less clear how they go about doing it. This study shows that social network sites may constitute such an everyday resource for self-affirmation. This constitutes an important addition to self-affirmation theory. However, the present study only demonstrates that social network sites *can* act as a self-affirmation, much like writing essays about important values in the lab; future research is necessary to establish whether people *do* in fact use social network sites to restore their sense of self-worth when it is threatened.

Another issue of contention in the self-affirmation literature concerns the moderators and mediators of self-affirmation effects (see Sherman & Cohen, 2006). When it comes to moderators, trait self-esteem has received some attention and has led to opposing findings: some have argued that only people high in self-esteem benefit from self-affirmation (Spencer, Josephs, & Steele, 1993; Stone & Cooper, 2001), whereas others have argued that those low in self-esteem benefit from it (e.g., Aronson, 1968; Aronson & Carlsmith, 1962). This study shows that the benefits of self-affirmation (i.e., decreased defensiveness) are experienced regardless of trait level of self-esteem, both when participants self-affirmed using Facebook and when they used the more established values-essay manipulation. This suggests that self-affirmation effects may be more universal than previously thought.

Prior research has also struggled to identify the psychological mechanism (i.e., mediators) underlying self-affirmation effects (see Sherman & Cohen, 2006, for a review). Recently, Crocker and colleagues (2008) have proposed that feeling "loving" towards others, and thus transcending the self, is what drives self-affirmation effects. This study attempted to replicate this finding, but failed. Other potential mediators, like self-directed positive affect (i.e., feeling "loved," "connected" and "supported") similarly did not pan out. Future research is necessary to illuminate these mediators. As Sherman & Cohen (2006) proposed, it is likely that the failure of current research to produce reliable mediators of self-affirmation effects is due to the fact that a constellation of complex social, motivational and cognitive factors, rather than one single mediator, is responsible for these effects.

Conclusion

To summarize, this study has investigated the hidden benefits that Facebook profiles bestow on their owners. These carefully constructed profiles that emphasize social connectedness and treasured attributes of the self, have been found to have self-

affirming value in that they help users maintain an elevated sense of self-worth. Additionally, Facebook profiles have been shown to engender a multitude of positive emotions, suggesting that social network sites have a capacity for supporting emotional well-being.

CHAPTER 4

SPONTANEOUS SELF-AFFIRMATION VIA FACEBOOK

Rationale & Hypotheses

Study 1 demonstrated that Facebook profiles can serve as an effective venue for self-affirmation. But Facebook's self-affirming benefits only materialized when participants were instructed by the experimenter to spend time on Facebook. An important question then is whether people access the self-affirming resources provided by Facebook even in the absence of a specific prompt. Do people spontaneously use Facebook to maintain and repair their self-worth? Thus, while Study 1 showed that Facebook profiles *can* serve as a venue for self-affirmation, Study 2 examines whether they *do* serve as one.

Steele's (1988) self-affirmation theory provides a framework for understanding the circumstances under which people seek opportunities to self-affirm. To differentiate these self-generated self-affirmations from their experimenter-prompted counterparts, they will be referred to as *spontaneous self-affirmations.* A fundamental claim of self-affirmation theory is that perceived threats to the ego (i.e., information that challenges people's positive view of the self) activate a motive to restore the perceived adequacy and integrity of the self. This motive leads people to search for information in their environment that can serve as affirmation of their overall integrity and goodness. In other words, it leads them to engage in spontaneous self-affirmation. For example, a smoker who is confronted with information about the deleterious repercussions of smoking will feel motivated to engage in activities that provide a general sense of moral and adaptive adequacy, such as join a valued cause, spend more time with his children, or try to accomplish more at the office [example from Steele, (1988)]. Other everyday activities that serve as spontaneous self-affirmations include therapy, prayer and conversation with supportive friends. While these coping

strategies do not resolve the cause of the psychological stress, people gravitate towards them because they restore an overall sense of well-being, which in turn diminishes the impact of the stressor.

Additionally, self-affirmation theory provides clear stipulations as to when and how this seeking of psychological remedies occurs (Steele, 1988). First, the theory claims that the preferred way of dealing with an ego threat is to affirm the overall integrity of the self rather than to directly address the threat itself. Thus, self-affirmation trumps other defensive responses, as people prefer to seek information in the environment that restores their *overall* sense of goodness and appropriateness instead of resolving the provoking threat. Second, out of the nearly endless possibilities for spontaneous self-affirmation, people will choose the one most readily available (i.e., accessible in the individual's perception, memory or imagination). Third, people seek resources of self-affirmation outside of the domain that was threatened, a phenomenon known as *fluid compensation.* Because it is preferable to maintain a general perception of adequacy, rather than deal with specific threats, it is important that people can draw on a variety of resources for self-affirmation. As a result, a plethora of positive information about the self can compensate for the psychological damage caused by ego threats. Lastly, spontaneous self-affirmations occur beyond conscious awareness. That is, people are unaware of their own efforts to restore their self-integrity by affirming alternate resources of the self. If self-affirmations are used consciously and purposefully to restore self-integrity, they have been shown to lose their persuasiveness and even backfire (Sherman et al., 2009).

A thorough literature search revealed only two studies demonstrating that people spontaneously seek self-affirmations following a threat to the ego. The first is the very study that spurred self-affirmation theory (Steele, 1975). In this experiment, women whose driving abilities were criticized by a confederate were more likely to

volunteer to help with a food co-op when another confederate requested help. In addition to showing that people seek opportunities to self-affirm after being confronted with an ego threat, this study also demonstrates the fluidity of the self-concept, meaning that it is possible to restore the self by accessing resources pertaining to a different domain than the one being threatened. The second study (Tesser, Crepaz, Collins, Cornell, & Beach, 2000) shows that after engaging in a threatening upward comparison (i.e., comparing the self with another person who is clearly superior in a domain of importance to the self), participants were more likely to compose essays rich in self-affirming content, and thus unconsciously try to repair their ego.

The primary goal of the current study is to investigate the core proposition of self-affirmation theory that people unconsciously gravitate towards opportunities to self-affirm following an ego threat. Having established in Study 1 that Facebook profiles represent a source of self-affirming information, Study 2 now investigates whether people are unknowingly attracted to Facebook after their self-concept has been challenged. Thus, this study seeks to illuminate some of the psychological reasons governing the use of social networking information, but also to test a fundamental, yet largely ignored, component of self-affirmation theory.

Another contribution to self-affirmation theory undertaken by this study is investigating the role of trait self-esteem in people's tendency to spontaneously self-affirm. Self-affirmation theory proper does not postulate any difference between individuals high and low in self-esteem in their tendency to gravitate towards self-affirming information in times of distress; rather it claims that this tendency is universal in nature. However, recent research puts forward contradictory hypotheses vis-à-vis the role of self-esteem in self-affirmation processes, with some claiming that individuals high in self-esteem may be more adept at self-affirming, whereas others

claiming that individuals high in self-esteem may find spontaneous self-affirmations less useful than their lower self-esteem counterparts (for a review, see Chapter 2). This study then asks whether spontaneous self-affirmation following an ego threat is impacted by trait self-esteem.

The present study

The methodology employed in the present study involves threatening participants' self-concept using the same experimental scenario employed in Study 1 (where participants' academic self-concept was threatened by negative feedback on a public speaking task) and then offering them a choice of several online activities to pursue. These Internet-based activities are designed to be equivalent in nature, with the important exception that one is self-affirming (Facebook), whereas others are not. It is hypothesized that participants will be more likely to seek Facebook when they receive a threat to the ego (i.e., negative feedback on the task) than when they do not (i.e., neutral feedback). It is also hypothesized that this seeking of self-affirming information will occur without conscious awareness.

Using a dependent measure that involves choice of activities from a predetermined list is a widely used methodology in the media selection literature (see Knobloch-Westerwick, 2006), although it has the disadvantage that it limits participants' options to only those included in the list. However, such a methodology may be necessary for testing spontaneous self-affirmation for two reasons. First, recall that the everyday venues for self-affirmation are virtually endless and that people are theorized to be unaware of the self-affirming benefits of the activities they are pursuing. Under these circumstances, allowing participants an unrestricted field of activities would likely result in a wide range of activities chosen and an inability on the part of the participants to identify these activities as self-affirming. Second, recall that *availability* dictates which self-affirming options participants pursue. Hence, it is

important to render Facebook available in participants' perceptual field, and including it on a list is a good option for doing so.

However, producing a list of activities from which participants can choose presents some important theoretical challenges. It is likely that a threat to the ego be accompanied by a decrease in mood, and a robust body of work in media studies shows that media choice is guided by a desire to alleviate bad moods (for a review, see Knobloch-Westerwick, 2006). Consequently, it is imperative that the media choices presented to the participants not differ in terms of their ability to placate bad moods. Mood management theory (Zillmann, 1988) identifies four media characteristics that can impact mood: 1) *excitatory potential*, or how arousing the media content is (with fast-paced, violent and erotic content being more arousing and more likely to alter moods); 2) *absorption potential*, or how engaging and interesting the content is (with more absorbing messages more likely to alter moods; 3) *hedonic valence*, or how pleasant and positive the content is (with more pleasant messages more likely to lift individuals' spirits); and 4) *semantic affinity*, or how related the media content is with the cause of the mood (with high affinity less likely to induce a mood change). Based on this research, the list of online activities presented to participants in this study is developed such that it minimizes differences between the activities along these key dimensions. Additionally, participants' perceptions of how familiar, engaging and positive their chosen activity was were recorded and controlled for.

Methods

Participants and recruitment

Participants were undergraduate students at Cornell University who were enrolled in Communication or Psychology courses ($N = 111$). Participants were recruited through an online portal that advertises ongoing research studies (www.susan.cornell.edu) and were compensated for their participation with extra-

credit in their courses. Fifteen participants were excluded from the analyses because they were not Facebook users and ten participants were excluded because they were suspicious of the true purpose of the study. This reduced the effective sample size to $N = 86$ (66% women; age $M = 19.79$, $SD = 1.04$). Excluded participants were randomly dispersed across experimental conditions.

Procedure

The experimental paradigm was similar to that used in Study 1 (see chapter 3), with a few notable exceptions. The experimental scenario, with participants required to engage in a public speaking task benefiting Cornell's Center for Distance Education, was identical to that employed in Study 1. However, unlike Study 1, the valence of the feedback participants received for their performance was manipulated: participants were randomly assigned to receive negative feedback ($N = 47$) or neutral feedback ($N = 39$) (see Appendix).

Another major difference is that, after receiving their feedback, participants were not *instructed* to self-affirm by spending time on Facebook, but rather they were given a choice of what to do. Specifically, participants were told they had an opportunity to take part in a short and unrelated study in order to double their extra-credit reward, and were given a choice of one out of five experiments ostensibly going on in the lab. Each experiment involved spending time on one website and then answering some questions about it (see Appendix). Participants were asked to rank these studies in the order of their preference.

The four decoy studies were designed such that they involve on online activity that is as similar as possible as spending time on one's own Facebook profile, yet not self-affirming. Identifying these online activities was accomplished through two rounds of pre-testing with a group of undergraduate students ($N = 33$). In the first round, participants were asked to generate a list of online activities that they find

equally interesting and engaging as spending time on their own Facebook profiles. The activities that were most frequently mentioned were selected: 1) watching videos on YouTube, 2) using search engines, 3) listening to online music, 4) reading online news, 5) following sports, 6) online shopping, 7) reading blogs, 8) examining online classifieds and 9) playing online videogames. In the second round, participants rated the Facebook task and the nine decoy tasks on how engaging, exciting, positive and difficult they were. Four online activities were rated as approximately equal to Facebook on all these dimensions: YouTube, online music, online news and online videogames, and were subsequently used in the study.

After ranking the online activities, participants completed a measure of their Facebook use and were debriefed through a funnel procedure that identified suspicious participants. Participants did *not* actually complete any of the five website-related studies, but, as promised, they received two extra-credit points for their participation.

Measures

Dependent measures. Participants were asked to rank the five website-related studies in the order of personal preference (1 – I would MOST prefer to participate in this study; 5 – I would LEAST prefer to participate in this study). This ranking represented the dependent measure of this study. Additionally, participants were asked to write a brief paragraph about *why* they chose their most preferred website. This was meant to gauge whether participants were consciously aware of any self-affirming benefits of their first choice.

Covariates. Several covariate measures were collected, pertaining to (1) characteristics of the participants themselves; (2) characteristics of the five websites participants ranked; and (3) participants' perceptions and uses of Facebook. First, at the very beginning of the study, participants' age and gender were recorded, and their trait level of self-esteem was measured using Rosenberg's (1965) scale (see

58

Appendix). Second, participants were asked to rate the five website-based studies on a variety of dimensions: 1) perceived effort to complete; 2) level of familiarity with each website; 3) how interesting, engaging and positive they perceived the study to be (see Appendix). Finally, participants reported whether they were Facebook users and, if so, how satisfied they were with their profile self-presentation, and how positive, accurate and comprehensive they considered their self-presentation (see Appendix).

Procedure summary

In chronological order, participants fulfilled the following experimental steps:

1) fill out Rosenberg's measure of trait self-esteem

2) prepare a speech on the legality of abortion (5 minutes)

3) deliver the speech (3-5 minutes)

4) receive negative or neutral feedback on their speech performance

5) are offered the opportunity to participate in an additional experiment and are presented with a list of five experiments currently going on in the lab

6) rank the experiments in order of preference

7) fill out questionnaire about their perceptions of each of these experiments

8) fill out a measure of Facebook use

9) receive funnel debriefing and compensation

Results

Participants' ranking of the five online activities was recoded to reflect whether their first preference was Facebook or not (i.e., any one of the four other activities). After receiving neutral feedback on their performance, participants were as likely to choose spending time on their own Facebook profiles as any of the other online activities. Indeed, in this condition, 30.8% of the participants chose Facebook, a rate not significantly different from chance [$z(39) = 1.09$, *ns*]. However, after receiving negative feedback, almost twice as many (59.6%) of the participants chose to spend

time on Facebook, a rate that was significantly higher than chance [$z(47) = 4.24$, $p <$ 0.001] (see Table 4.1). A chi-square analysis confirmed that participants were significantly more likely to chose Facebook as their first preference after their ego was threatened (negative feedback condition) than when it was not (neutral feedback condition) [$\chi^2(1, N = 86) = 7.11$, $p = 0.01$].

Table 4.1: Number and percentage of participants in each condition whose first preference was Facebook vs. any of the four remaining websites.

	Facebook		Other	
	Total	%	Total	%
Neutral feedback condition	12	30.8	27	69.2
Negative feedback condition	28	59.6	19	40.4

Further analyses were conducted to determine (1) whether the actual *rank* participants assigned to the five online activities differed by condition (not just first choices); and (2) whether participants' preference for Facebook in the negative feedback condition held even when controlling for a number of covariates that may affect activity choice. A fixed-effects linear model was used, with each activity's rank entered as the dependent variable, condition (negative vs. neutral feedback) as fixed-effects predictor, and a series of covariates pertaining to: (1) individual differences between participants (i.e., age, gender and self-esteem scores); (2) participants' perceptions of the five activities (i.e., how engaging, familiar and positive they were, and also how effortful the activity was); and (3) information about participants' own Facebook profiles (satisfaction with their Facebook self-presentation, and how positive and accurate their Facebook self-presentation is).

As before, when participants' egos were not threatened, they did not exhibit a preference for Facebook over the other online activities. While controlling for all the covariates, a comparison of the rank of Facebook (*rank* = 2.74) relative to the average rank of the other websites (*rank* = 3.00) showed no difference in the neutral feedback condition [*t.s.* (391) = 0.27, *ns*]. However, when participants' egos were threatened, they displayed a preference for spending time on their own Facebook profiles: Facebook's rank was significantly lower (*rank* = 2.43) than the rank of the other online activities (*average rank* = 3.02) even after accounting for individual differences between participants and differences related to the five activities offered as a choice [*t.s.* (391) = 0.59, *p* = 0.02]. Table 4.2 displays the ranks of the websites in both feedback conditions.

Table 4.2: The rank of Facebook compared to the average rank of the other websites in the neutral and negative feedback conditions, while controlling for all the covariates.

Condition	Facebook Rank	Average Rank
Neutral feedback	2.74	3.00
Negative feedback	2.43 [a]	3.02 [a]

[a] Difference significant at the *p* = 0.02 level

None of the covariates included in the model affected the rank of the online activities, with the exception of how engaging the websites were perceived (β = -0.16, *p* = 0.006). This suggests that participants in the neutral feedback condition were more likely to select engaging activities, and is consistent with mood management theory's claims that people select media with a high absorption potential (i.e., very engaging) in order to relieve boredom (Zillmann, 1988). Importantly, participants' propensity to spontaneously self-affirm in times of distress was observed regardless of their levels

of trait self-esteem. Table 4.3 lists the parameter estimates of all the covariates

included in the model.

Table 4.3: Parameter estimates, standard errors and significance levels for the covariates included in the fixed-effects model of Study 2.

Individual differences between participants

	β	SE	p
Gender	-0.02	0.15	0.90
Age	?		
Self-esteem	-0.01	0.17	0.98

Characteristics of online activities

	β	SE	p
Engaging	-0.16	0.06	0.006
Familiarity	0.07	0.05	0.24
Effortful	0.05	0.04	0.24
Positive	-0.04	0.05	0.46

Participants' perceptions of their own Facebook profiles

	β	SE	p
Satisfaction with Facebook self-presentation	0.11	0.10	0.28
Accuracy of Facebook profile	0.02	0.09	0.80
Positivity of Facebook self-presentation	-0.06	0.10	0.60

Together, the chi-square analyses and the linear model analyses confirm that participants tended to gravitate towards self-affirming online venues, such as their own Facebook profiles, when their egos were threatened but not when their egos were intact, regardless of gender, trait self-esteem, perceptions of the various online venues, or the perceived quality of their own Facebook profile.

Were participants consciously aware of the self-affirming properties of the websites they were choosing? Recall that participants wrote short open-ended responses about *why* they chose their most preferred website. Only five participants (5.81%) indicated potentially self-affirming properties of their choices, specifically: "I want to prove to the world how awesome I am at videogames;" (participant chose videogames) "I chose this study because I feel most adequately qualified to analyze Facebook as it has become such an integral part of my life and I am probably *most fluent* in this medium" (participant chose Facebook); "I'm narcissistic" (participant chose Facebook); "The study would allow me to work with information about me and I love myself" (participant chose Facebook); "Not only is it fun to watch videos that thousands of other people have enjoyed but it is nice to feel a part of some group of individuals that have watched and enjoyed particular material" (participant chose YouTube). The other participants appeared unaware of the self-affirming properties of the websites they were choosing. Results on the chi-square test and the linear model remained the same when these participants were removed.

Discussion

Study 1 showed that people can draw important psychological benefits from visiting their Facebook profiles in times of psychological distress. Yet these benefits are virtually worthless if people don't access them on their own, without a specific prompt from an experimenter. It was the purpose of Study 2 to assess the extent to

which people actively (albeit unconsciously) make use of Facebook to restore their self-integrity and self-worth when these feelings are threatened.

Results show that, as expected, participants were more likely to choose to spend time on Facebook after they received a blow to the ego than when their ego was unharmed. In fact, the likelihood of choosing Facebook out of five equivalent online activities nearly doubled following an ego threat. Importantly, this seeking of Facebook in times of psychological distress occurred independently of participants' trait level of self-esteem, and beyond their conscious awareness. The results have important theoretical implications, both for understanding motivations for social network site use, and for advancing self-affirmation theory.

Motivation for Facebook use

As elaborated in the previous chapter, the soaring popularity of social network site has propelled several studies on users' motivations for accessing these sites on such a regular basis. To date, research has identified such interpersonal motivations as social investigation, social connection and sharing identities (Joinson, 2008). The present study adds to this body of work the finding that intrapersonal motivations that manifest themselves beyond conscious awareness, such as affirming a sense of self-integrity, also pull users towards their Facebook profiles.

Additionally, unlike previous studies that examine general motivations for social network use, this study illuminates specific conditions under which people may be more motivated to visit their online profiles. When participants' ego was in a state of neutrality, they were just as likely to navigate to their Facebook profiles as to other equally engaging websites. However, when participants' sense of self-integrity and self-worth was in jeopardy, they showed a distinct preference for their Facebook profiles. This suggests that motivations to access social network sites may fluctuate depending on users' ego states. It may be a prolific avenue for future research to

bypass generic, self-reported motivations for social network use and examine instead how environmental forces interact with users' psychological needs to determine when, where and for how long they are motivated to use these sites.

A further contribution of this study is that it examines *unconscious* motivations for Facebook use. Previous work in this area relies exclusively on self-report data: participants are asked to generate lists of reasons why they spend time online (Joinson, 2008). While this approach yields important information regarding participants' explicit goals in using social network sites, it fails to capture the more subtle, psychological grounds for SNS use that operate beyond conscious awareness.

Contribution to self-affirmation theory

Although thousands of scholarly articles have documented the effects of self-affirmation, the question of whether and how people spontaneously self-affirm has remained largely unaddressed. Self-affirmation posits that people naturally gravitate towards self-affirmation venues when their self-worth is threatened, and that they do so in an unconscious manner (Steele, 1988), but this claim has received almost no empirical attention (see also Sherman & Cohen, 2006). Very likely, the paucity of research on spontaneous self-affirmations goes hand in hand with the lack of scholarly attention to what constitutes everyday sources of self-affirmation. As noted earlier, the effects of self-affirmation have been studied in the context of experimenter-generated self-affirmation exercises, such as ranking and writing essays about important personal values – tasks in which people would not spontaneously engage. Since it is unclear what people's everyday options for self-affirmation are, it is understandably difficult to establish whether and how they use those options.

Having identified a potent source of everyday self-affirmation in the form of social network sites, and in particular Facebook, the present research has proceeded to test whether this source of self-affirmation is in fact accessed following a threat to the

ego. In doing so, it has provided much needed empirical support to the core premise of self-affirmation theory that people gravitate towards self-affirming information in times of psychological distress, and that they do so unconsciously. A further contribution of this study is the finding that the seeking of self-affirming information occurs independently of people's level of trait self-esteem. In other words, gravitating towards self-affirming information appears to be a general tendency that is not impacted by individual differences in self-esteem.

While this study represents an important first step in understanding spontaneous self-affirmation, further replication is necessary to properly establish the conditions under which self-affirmation is sought. Moreover, future research is necessary to comprehensively test the criteria proposed by self-affirmation theory as to when and how people spontaneously self-affirm. Recall that the theory postulates that spontaneous self-affirmation of a domain unrelated to the threat is preferred over dealing with the threat itself, and that the most readily available source of spontaneous self-affirmation is preferred to harder-to-access (yet potentially more effective) ones. It was beyond the purpose of the current studies to exhaustively test all these claims, and future research is invited to undertake this empirical investigation.

It is noteworthy that the idea that people are motivated to redress negative states by seeking information that can offer psychological comfort – ignored as it may have been by self-affirmation researchers – is certainly not novel or unique to self-affirmation theory. As early as the beginning of the 20th century, William James (1915) argued that people's desire to protect their self-esteem leads them to seek things, such as nurturing relationships and consoling beliefs – actions that he labeled "self-seeking" or "self-preservation." Festinger's cognitive dissonance theory postulates that people engage in *selective exposure* to information in order to correct the discomfort caused by dissonance. Similarly to ego threats, dissonance is viewed as

66

a noxious experience that individuals seek to terminate by unconsciously avoiding exposure to dissonant messages and seeking exposure to messages that are supportive of attitudes [for a review, see Frey, (1986)]. In the communication literature, mood management theory (Zillmann, 1988) is based on the similar premise that individuals are motivated to maintain a pleasant state of being by terminating bad moods and cultivating good moods, and that they do so by unconsciously seeking media messages capable of regulating their moods. The current study can then be integrated into a larger body of work that explicates how individuals choose exposure to messages (mediated or otherwise) in order to maintain a positive phenomenal experience of the self, be it on a cognitive or affective level.

Conclusion

To summarize, this study established that the self-affirming benefits provided by Facebook (see Study 1) are harnessed by users in times of psychological distress (i.e., ego threat) of their own accord, without a specific prompt from an experimenter. It appears, then, that Facebook profiles may serve as a potent source of self-affirmation in users' lives because they actively (although unconsciously) take advantage of its psychological benefits. These findings contribute to the literature on motivations for social network site use by introducing *unconscious* motivations pertaining to users' emotional well-being, and they also provide a testing bed for the largely ignored yet fundamental claim of self-affirmation theory that people spontaneously seek self-affirmations in order to repair and maintain their self-concept.

CHAPTER 5

BEHAVIORAL AND PERCEPTUAL EFFECTS OF

FACEBOOK SELF-AFFIRMATION

Rationale & Hypotheses

Study 1 demonstrated that Facebook profiles represent a source of self-affirmation, and that they confer upon their users psychological benefits such as more salutary perceptions of threatening events and increased positive affect. Study 2 showed that Facebook users actively take advantage of these benefits by gravitating towards Facebook in times of psychological distress. While these data illuminate the causes and effects of Facebook exposure in important ways, several key questions remain unanswered.

First, Study 1 shows that exposure to one's Facebook profile affects perceptions of threatening events, yet it is unclear how Facebook exposure affects perceptions of the *self.* This is particularly important because changes in self-perception may be responsible for self-affirmation effects (see Sherman & Cohen, 2006). Does viewing one's own flattering profile boost self-evaluations, and is this increased belief in the adequacy of the self the mechanism through which Facebook self-affirmation operates?

Second, Study 1 identifies changes in participants' perception and interpretation of events following Facebook exposure, but not whether these perceptual consequences are accompanied by *behavioral* consequences. Does affirming the self via Facebook affect people's subsequent behavior, such as their performance on important tasks?

Finally, Study 1 investigated several possible mediators for the effect of Facebook self-affirmation (i.e., increased self-directed and other-directed positive affect), but failed to produce significant results. This could be due to a lack of

statistical power, or, conversely, it could be that a different set of mediators is responsible for Facebook's self-affirming power.

The purpose of Study 3 is to address these theoretical and methodological questions. Specifically, Study 3 examines (1) the effect of Facebook exposure on self-evaluations; (2) the effect of Facebook exposure on behavioral outcomes, specifically task performance; (3) the mediating effects of self-directed and other-directed positive affect using a larger sample size; and (4) new potential mediators, such as elevated self-evaluations and social connectedness.

Effect of Facebook on self-evaluation

The evaluations one makes about oneself, affectively and cognitively (e.g., what one thinks and feels about oneself) have been broadly construed as *self-esteem* (Rosenberg, 1965; see also Bosson, 2006). Although various definitions of self-esteem have been proposed, by far the most commonly used one is "a favorable global evaluation of oneself" (Baumeister, Smart, & Boden, 1996; Mruk, 2006). Self-esteem can be experienced as a *state* – that is, the evaluative response to the self that is elicited by a particular occasion, or as a *trait* – that is, the overall evaluative response to the self averaged across a variety of occasions. Additionally, self-esteem can be experienced consciously, when self-evaluations are available to conscious awareness, or unconsciously, when these evaluations are either inaccessible to the self or incorrectly identified (Greenwald & Banaji, 1995).

What is the effect of Facebook exposure on *state* self-esteem? In other words, how does one evaluate oneself after examining one's own Facebook profile? Recall that Facebook users should be both motivated and able to create flattering self-presentations on their Facebook profiles. The motivation to self-present in a positive light stems from having a large audience of friends, coworkers and family members who the self is typically eager to impress, and from social norms that mandate a high

degree of disclosiveness and the expression of positive affect. The ability to self-present favorably is bestowed by technological affordances, such as asynchronicity, editability and the reallocation of cognitive resources (see Chapter 3 for a full discussion of both social and technological factors that should affect Facebook self-presentation). Recent research has argued that both Facebook and other similar social network sites, such as online dating, allow users to create optimized, highly flattering presentations of the self (e.g., Ellison et al., 2006; Lampe et al., 2006; Toma & Hancock, 2010; Toma et al., 2008). Moreover, these self-presentational acts should be *credible* because they are performed in front of audiences of friends and acquaintances who are in a position to verify the accuracy of profile claims.

Following exposure to this carefully crafted, optimized version of the self whose accuracy and attractiveness is vetted by one's often extensive network of "friends," Facebook users should experience a boost in state self-esteem. In other words, exposure to the version of the self encapsulated in the Facebook profile should cause a surge in positive self-evaluations.

Study 1 has shown that Facebook profiles lead to self-affirmation, and the current study proposes that they also lead to increased state self-esteem. A critical question at this point concerns the relationship between these two processes. Do they operate independently of each other (i.e., Facebook profiles provide two distinct benefits: self-affirmation *and* a raise in state self-esteem), or do they affect each other?

One possibility proposed by current research is that state self-esteem is a mediator of self-affirmation effects. Indeed, the idea that self-esteem and self-affirmation are intertwined is theoretically compelling. As described earlier, self-esteem represents a positive global evaluation of the self, whereas self-affirmation is a procedure that restores the perceived integrity, competence and moral adequacy of the self. Because self-integrity and self-esteem appear synonymous in these

70

conceptualizations, Tesser (2000) has argued that self-affirmation is in fact a self-esteem regulation mechanism. It stands to reason, then, that a self-affirmation exercise should result in a boost in state self-esteem.

However, evidence for this mediation effect is tenuous. In an initial study, Fein and Spencer (1997, Study 3) found that self-affirmation resulted in increased state self-esteem and decreased stereotyping of a member of a negatively stereotyped group (i.e., a form of defensiveness). Moreover, the boost in state self-esteem mediated the relationship between self-affirmation and the reduction in stereotyping. State self-esteem was measured using Heatherton & Polivy's (1991) scale. It is noteworthy that the value-essay self-affirmation was *not* used in this study; rather, participants in this study were affirmed by being given bogus positive feedback on an intelligence test.

When using the values-essay form of self-affirmation, the postulated relationship between increased state self-esteem and self-affirmation has not been found. Galinsky, Stone, & Cooper (2000) found no reliable changes in state self-esteem following a values-ranking exercise. In an extensive testing of the role of self-esteem in value-based self-affirmation, Schmeichel and Martens (2005) similarly failed to link the two processes. Notably, these researchers used both measures of *state* self-esteem (Heatherton & Polivy, 1991) and measures of *trait* self-esteem (Rosenberg, 1965).

One possible explanation for some of these null findings could be methodological in nature: the use of *explicit* measure of state self-esteem. Explicit measures are problematic on a number of fronts (see Fazio & Olson, 2003; Hofman, Gawronski, Gschwendner, Le, & Schmitt, 2005). First and most importantly, they are subject to social desirability bias, meaning that respondents are motivated and able to control their responses in order to conform to social norms. High self-esteem is particularly socially desirable in Western cultures, which may render self-

71

presentational biases highly potent (Baumeister, Tice, & Hutton, 1989). Second, it is possible that respondents lack awareness of their own self-evaluations, leading them to incorrectly report their levels of self-esteem even when they are not motivated to conceal them. Third, respondents may vary in the degree of effort they are willing to expend on correctly identifying their self-evaluations. In this instance, they might simply not be motivated to engage in sufficient introspection to provide accurate responses.

For these reasons, *implicit* measures of state self-esteem may be preferable. As discussed earlier, implicit measures of self-esteem gauge "the introspectively unidentified (or inaccurately identified) effect of the self-attitude on evaluation of self-associated and self-disassociated objects" (Greenwald & Banaji, 1995, p. 11). As such, they are less subject to social desirability bias, and may tap evaluations that are inaccessible to the conscious mind. There are several techniques for implicitly assessing self-esteem, including word-stem completion tasks, the name-letter effect (whereby people with high self-esteem show a preference for their initials compared to other letters in the alphabet) and the implicit association test (see Greenwald & Farnham, 2000). The latter is a measure of automatic association that has been widely used in recent years to measure a plethora of unconscious attitudes, including racial and gender bias, political and religious orientation, and other attitudes typically subject to socially desirable responding (see Greenwald, Nosek, & Banaji, 2003).

Only one study to date has used implicit measures to assess the mechanism of self-affirmation (Koole, Smeets, van Knippenberg, & Dijksterhuis, 1999). In this study, the classic values-essay self-affirmation was shown to decrease rumination following negative feedback on a task, and to increase self-evaluations. The latter were measured implicitly using the name-letter effect (see also Hoorens, 1990; Buttin, 1985). However, the increase in implicit self-evaluations did not mediate the

relationship between the self-affirmation exercise and decreased rumination, a form of defensive processing.

To summarize, extant self-affirmation research is unclear on two important issues. Is self-affirmation accompanied by increased self-evaluations (i.e., high state self-esteem)? And if so, are these increased self-evaluations responsible for self-affirmation effects? Using explicit measures of self-esteem, these claims have been both supported (Fein & Spencer, 1997) and dismissed (Galinsky et al., 2000; Schmeichel & Martens, 2005). Using implicit measures, the first claim has received support but the second has not (Koole et al., 1991). The present study seeks to contribute to this literature by using a novel and robust measure of implicit self-esteem – the self-esteem implicit association test (IAT) (Greenwald & Farnham, 2000) and by testing it in the context of Facebook self-affirmation. Both issues of contention are revisited: is Facebook self-affirmation accompanied by increased IAT-measured self-esteem? and does this new operationalization of state self-esteem serve as a mediator for self-affirmation effects?

Effect of Facebook on task performance

An additional goal of this study to investigate the effects of Facebook self-affirmation on task performance, a type of behavior that is particularly salient to the primary demographic of Facebook – college students. Study 1 has shown that Facebook use is associated with more adaptive perceptions of surrounding events (i.e., interpreting ego threats in a less defensive and more open-minded manner). Do these improved perceptions translate into actions that are conducive to success?

While the self-affirmation literature is especially thorough in documenting the effects of self-affirmation on social perception (e.g., decreased stereotyping, cognitive dissonance and group-serving biases; increased acceptance of threatening health information, etc.), it is substantially less extensive in examining behavioral outcomes

of self-affirmation[1]. In particular, the literature is relatively silent on the effect of self-affirmation on task performance, an important category of behavior (see Sherman & Cohen, 2006, for a review). Although recent work has begun to investigate this topic, it has offered discrepant predictions regarding the effect of self-affirmation on performance: some see it as beneficial and others as deleterious.

On the one hand, in line with the voluminous body of work documenting the benefits of self-affirmation, it has been proposed that self-affirmation also boosts task performance. The argument in favor of this claim focuses on the psychological stress that is often associated with performing on a task. Specifically, research has shown that performance deteriorates under conditions of stress (Aronson et al., 1999; O'Brien & Crandall, 2003; Schmader & Johns, 2003), but that self-affirmation provides a buffer against stress, thus restoring the ability to perform well.

In a notable experiment, Cresswell and colleagues (2005) found that value-based self-affirmation, a purely psychological intervention, significantly reduces cortisol, a physiological response to stress. Other studies have focused on the role of self-affirmation in palliating the stress stemming from stereotype threat. Indeed, members of negatively stereotyped groups have been shown to experience heightened levels of stress when performing on tasks where they may confirm the stereotype about their group in the eyes of others (Blascovich, Spencer, Quinn, & Steele, 2001; O'Brien & Crandell, 2003). Martens and colleagues (Martens, Johns, Greenberg, & Schimel, 2006) showed that women under stereotype threat performed better on a math task after completing a self-affirmation exercise. In fact, their performance equaled that of women who had not been threatened, and also that of men. In a remarkable field study, Cohen and colleagues (Cohen, Garcia, Apfel, & Master, 2006)

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[1] For one notable exception, see Sherman et al. (2000). In this study, sexually active undergraduates who had completed a self-affirmation exercise were more likely to purchase condoms and take an AIDS-educational brochure than their non-affirmed counterparts.

showed that African-American students (who were experiencing stereotype threat) earned significantly higher grades throughout the course of a semester and were less likely to drop out after completing a single 20-minute values-essay self-affirmation. However, the self-affirmation exercise did not affect the performance of non-stereotyped students. To summarize, this line of work suggests that self-affirmation boosts performance when the task is perceived as threatening, but not when it is perceived as benign.

On the other hand, an emerging body of work has proposed that self-affirmation may hinder performance. This view is based on the key idea that, when it comes to their self-evaluations, individuals are satisficers, not maximizers (Tesser & Cornell, 1991). That is, they seek to maintain positive self-evaluations (and most importantly to restore them when they are threatened), rather than take any opportunity to enhance their self-worth. Having completed a self-affirmation exercise, there is no psychological need to engage in other efforts to enhance self-views. As such, self-affirmation can be de-motivating, deterring individuals from pursuing subsequent venues for self-affirmation. Since performing well on a threatening task is an opportunity to showcase one's abilities and thus affirm the self (see Johnson, Norton, Nelson, Stapel, & Chartrand, 2008), individuals who are already affirmed may not be motivated to expend effort on the task.

Consistent with this reasoning, research has found that threatening the self via an upward social comparison led to better performance on a verbal ability task, but that removal of the threat hurt performance (Johnson et al., 2008, Study 3). In this study, the task itself represented an opportunity to self-affirm. Importantly, for the task to act as a venue for self-affirmation, it had to be diagnostic of an important ability (Study 2) and unrelated to the domain of the self that had been threatened (Study 1). In a similar set of studies (Johnson & Stapel, 2007), participants threatened by an

upward social comparison (i.e., a more successful student) performed better on a verbal abilities task than a control group (exposed to an unrelated article about the campus), whereas participants exposed to a non-threatening social comparison (i.e., a moderately successful student) actually performed worse (Study 1). Most importantly, a self-affirmation exercise completed prior to exposure to the threatening social comparison eliminated performance improvements (Study 2). The authors conclude that task performance represents an opportunity to maintain and repair self-evaluations, and thus affirm the self. Given that the self is satisficing and not maximizing (Tesser & Cornell, 1991), a prior self-affirmation reduces motivation to engage in a performance-based affirmation, and eventually hurts performance.

How can these two divergent perspectives regarding the role of self-affirmation in task performance be integrated? Both examine the role of *threat* in performance, and are interested in how self-affirmation alters perceptions of this threat. In the "performance booster" view, stereotype threat is viewed as impairing performance, while self-affirmation restores self-resources and allows for improved performance. In the "performance hindrance" view, social comparison threat is viewed as motivating performance, while self-affirmation reduces this motivation and ultimately decreases performance. It is plausible that the two types of threat considered by these lines of research – stereotype threat and social comparison threat – affect the individual differently, leading to differential effects of self-affirmation on performance. If that is the case, it is necessary to conduct boundary work on the specific circumstances in which self-affirmation helps or hurts performance. Which threats are motivating and which are debilitating? In what kinds of tasks is self-affirmation likely to be helpful?

An important first step in this direction is to examine how self-affirmation affects performance *in the absence of any particular threat*. Does a prior self-

affirmation exercise reduce motivation, leading to worse performance, or does it boost self-resources and the ability to handle the stress inherent to the task, leading to better performance? Does self-affirmation primarily affect motivation or ability to perform?

The current study examines these questions using Facebook profiles as a venue for self-affirmation. In the process, it seeks to contribute to extant literature on the effect of self-affirmation on task performance, but also to provide some insight on the possible effect of Facebook use on academic performance. Indeed, this has been a highly controversial issue in recent years: preliminary research linking Facebook use with lower academic achievement in college and graduate students (Karpinski, 2009) has caused a media sensation. However, this research has been criticized for being strictly correlational and using a very limited sample size (see Pasek, more, & Hargittai, 2009). While the present study does not propose to illuminate the effects of Facebook use (broadly defined) on academic performance in general, it does examine one facet of Facebook use (e.g., profile exposure) on an isolated academic task. Thus, it provides some limited but experimentally-driven information on the relationship between a specific Facebook activity and academic performance.

Mediating variables

The final goal of this study is to continue searching for mediators for the self-affirmational effects of Facebook. Study 1 revealed a particularly strong effect of feeling "connected" after own profile exposure, but these feelings of connection were measured using a single item. The present study uses a scale of social connectedness to better assess the role of this variable in Facebook self-affirmation. As mentioned earlier, implicitly-measured self-evaluations are also considered as potential mediators. Finally, the potential mediators examined in Study 1, self-directed and other-directed positive affect, are re-considered using a larger sample size, whose increased power may provide additional clarity on the effects of these variables.

Current study

To test these hypotheses and research questions participants in the present study were first induced to self-affirm using the same self-affirmation manipulation used in Study 1. Their implicit state self-esteem, self-reported affect and social connection were subsequently measured. Then, participants were asked to complete an ostensibly unrelated mental arithmetic task involving rapid serial subtractions. The task has been shown to be moderately difficult in prior research (Schimel, Arndt, Banko, & Cook, 2004), and is also diagnostic of an important aspect of participants' self-concept: academic ability.

Methods

Participants and recruitment

Participants were undergraduate students at Cornell University who were enrolled in Communication or Psychology courses and were compensated with extra-credit for their courses. They were recruited through an online portal that advertises ongoing research studies (www.susan.cornell.edu). Following Schimel et al.'s (2004) procedure, the advertisement called for participation in a study about the link between personality traits and cognitive abilities. Social network sites were not mentioned at any point during recruitment.

A sample of 178 undergraduates participated in the study. Several participants were eliminated from the sample for the following reasons: two were suspicious of the true purpose of the study, five experienced technical difficulties that prevented them from completing the study (i.e., the Facebook server not responding, computer freezing), and 12 reported not being active Facebook users. Level of Facebook activity was gauged through a questionnaire administered at the end of the study (see Appendix), which assessed how frequently participants use Facebook. Participants who (1) did not have a Facebook profile; (2) reported *not* logging on to Facebook at

78

all on a typical day; and (3) reported spending 0-2 minutes on Facebook on a typical day were considered non-active users. After eliminating all of these unsuitable participants, the effective sample size was $N = 159$ (70.4% women; age $M = 19.76$, $SD = 1.63$, $min = 18$, $max = 35$).

Procedure

Upon arriving at the lab, participants were told that the study they signed up for was very short and they could participate in an additional short study in order to double their extra-credit points. All participants agreed to complete both studies.

The first study was presented as a "website evaluation study." Participants were told they would be spending five minutes on a website and then answer a few questions about it. This constituted the self-affirmation manipulation. Participants were randomly assigned either to the experimental condition (i.e., self-affirmation) or the control condition (i.e., no self-affirmation). In the self-affirmation condition, participants were asked to examine their own Facebook profile for five minutes ($N = 77$). They were told they could examine any portion of their profile (e.g., wall posts, photographs, videos, friend lists), the only restriction being that they could not navigate to anybody else's profile. In the control condition, participants were asked to examine a stranger's Facebook profile ($N = 82$). The same yoking procedure employed in Study 1 was also used here. This ensured that participants in the control condition viewed, as a group, the same profiles as participants in the experimental condition. After the experimental manipulation, participants filled out a brief questionnaire about their feelings and completed the self-esteem Implicit Association Test.

At this point, participants were informed that they finished the first study and were now ready to commence the second study. Participants were reminded that the two studies were unrelated. The second study was presented as a study about the

relationship between cognitive abilities and personality traits. Participants were told they would first complete a measure of their cognitive abilities, and then a measure of their personality traits.

To measure cognitive abilities, participants were asked to engage in a mental arithmetic task consisting of rapid serial subtractions from a large number during a limited amount of time (also used in Arndt, Schimel, Greenberg, & Pyszczynski, 2002; Schimel et al., 2004; Tomaka, Blascovich, Kibler, & Ernst, 1997). Specifically, they were asked to verbally count down from 1978 by intervals of seven as quickly as possible for two minutes. A research assistant timed and audio-recorded their responses. Before starting the mental arithmetic task, participants reported how well they thought they would do in the task and how threatening they perceived it to be (see Appendix).

In actuality, participants did not fill out any personality measures. After finishing the counting task, participants in the control condition were thanked and debriefed. Participants in the experimental condition also filled out a measure of their Facebook use before being dismissed. A funneled debriefing procedure was employed in order to identify suspicious participants.

Measures

Dependent measures. Participants' performance in the counting task constituted the behavioral dependent measure. Recall that participants were required to serially subtract the number seven from 1978 (e.g., 1978, 1971, 1963, etc.) as quickly as possible during a two-minute time interval. Their performance on this task was measured in two ways: number of *attempted* answers (i.e., the total number of subtractions participants performed in the allotted time) and number of *correct* answers (i.e., the total number of correct subtractions participants performed in the allotted time). If participants had made an error in the subtraction task, they were only

80

penalized for that one subtraction, and not for subsequent correct subtractions from that incorrect number. For instance, the series of 1971 - 1963 – 1956 was only considered to contain one error. Participants' error rate was calculated as the percentage of attempted answers that were incorrect.

Task difficulty. To assess how stress-inducing the counting task was perceived, a two-item questionnaire was administered. Participants reported how threatening they perceived the task to be on a 1 (not at all threatening) to 7 (very threatening) scale, and they also projected how well they thought they would do in the task on a scale from 1(not at all well) to 7 (very well).

Mediators. Several potential mediators for the effect of self-affirmation on performance were considered. First, Crocker et al.'s (2008) affect measure (see Appendix) was included in order to replicate the results of Study 1 and also investigate the potential mediational effect of self-directed positive feelings (e.g., "loving," "loved") with a larger sample.

Second, a measure of social connectedness was included. The scale gauged participants' feelings of "togetherness" with their peers and of belonging to a supportive community and was adapted from Lee & Robbins' (1995) and Gonzales & Gay's (under review) social connectedness scales (see Appendix). The scale achieved satisfactory reliability ($\alpha = 0.87$).

Finally, participants' state self-esteem was considered as a potential mediator. State self-esteem was measured using an Implicit Association Test, which captures automatic evaluations (Greenwald & Farnham, 2000). Recall that implicit measures are immune to conscious manipulation, which is why they can be more reliable than explicit (i.e., self-report) measures (Banse, Seise, & Zerbes, 2001; Egloff & Schmukle, 2002).

Broadly speaking, implicit association tests operate by measuring the speed with which participants associate target concepts (i.e., race, gender, self) with evaluative statements (e.g., good, pleasant, dominant, attractive, intelligent). In the classic IAT paradigm, participants are asked to rapidly categorize stimuli into two predetermined bins. The bins represent pairings between one target concept and one evaluation (e.g., self + good, self + bad). The faster participants categorize the stimuli into the proper bin, the stronger they hold the mental association between that particular concept and evaluation. Conversely, slow responses indicate that participants have difficulty associating the concept with the evaluation (Greenwald et al., 2003). Speed of categorization is calculated by measuring response latencies, or the time lag between being presented with the stimulus and placing it into the correct bin.

Applied to state self-esteem, the IAT procedure involves pairing concepts related to the self (i.e., me, mine, my, myself, self) and concepts related to others (i.e., others, them, their, they) with "pleasant" evaluations (i.e., pleasure, superb, marvelous, beautiful, wonderful, joyful, lovely, glorious) and "unpleasant" evaluations (i.e., nasty, humiliate, agony, painful, tragic, horrible, terrible, awful). The pleasant and unpleasant words were selected from the pleasantness judgment norms developed by Bellezza, Greenwald and Banaji (1986). The faster participants associate self-related concepts with positive evaluations, the higher their implicit self-esteem.

To complete the task, participants are seated at a computer and asked to use the "E" and the "I" keys to place the stimuli into bins as quickly and accurately as possible. The bins are placed on the upper left side and upper right side of the computer screen, respectively. Once a stimulus is correctly placed, the next one appears on the screen. If a stimulus is incorrectly placed, participants are notified by a "X" mark on the screen and they get an opportunity to try again.

The procedure involves six steps, four of which are practice rounds meant to get participants acclimated to the task. First, participants practice categorizing stimuli into "self" and "other" bins. Second, they practice sorting concepts into "pleasant" and "unpleasant" bins. Third, they practice categorizing stimuli into combined bins, each including one concept and one evaluation (i.e., self + pleasant to the left and other + unpleasant to the right). Fourth, they repeat step three. Fifth, participants practice categorizing stimuli into the reverse bins (i.e., self + unpleasant to the left and other + pleasant to the right). Sixth and finally, participants repeat step five. Steps one, two, three and five are practice rounds and are not included into the final score. Participants who make categorization errors more than 30% of the time are dropped from the analyses.

Implicit self-esteem is computed as the difference in mean latency between steps four and six and is expressed as a "d" score. This d-score is a standardized metric that conveys the direction and magnitude of the association between positive evaluations and the self, and can take values between -2 and +2 (Nosek & Sriram, 2007). Higher d-scores indicate higher state self-esteem.

Covariates. To ensure no systematic differences between experimental conditions, several covariate measures pertaining to participants' ability to perform mental arithmetic were collected. Participants self-reported their gender, and information about their major and grade point average was collected from Cornell University's human resources management system. The major information was re-coded to reflect whether participants were students in the 1) social sciences or humanities (e.g., communication, psychology, government, film); 2) science and engineering (e.g., math, physics, engineering, computer science, economics); or 3) other (e.g., biology, nutritional sciences, architecture, undecided).

Procedure summary

In chronological order, participants completed the following steps:

1) spend five minutes examining own Facebook profile or a stranger's profile

2) complete self-esteem implicit association test

3) complete self-report affect measure and social connectedness scale

4) learn about the mental arithmetic task, as an unrelated study

5) fill out a measure of the perceived difficulty of the task

6) complete the mental arithmetic task (two minutes)

7) are debriefed, compensated and thanked

8) participants in the self-affirmation condition befriend the experimenter in order to provide access to the profile

Results

Effects of Facebook self-affirmation on implicit state self-evaluations

How did spending time on their own Facebook profiles affect participants' self-evaluations, as assessed by the self-esteem implicit association test? As predicted, the data reveal that participants who examined their own self-affirming profiles experienced a significant boost in state self-esteem ($M = 0.57$, $SD = 0.33$) compared with participants who examined a stranger's profile ($M = 0.37$, $SD = 0.39$) [$t(157) = 3.61$, $p < 0.001$].

Effects of Facebook self-affirmation on task performance

Prior to starting the counting task, participants completed two self-report items about the perceived difficulty of the task. On a scale from 1 (not at all threatening) to 7 (very threatening), participants found the task to be moderately threatening ($M = 3.59$; $SD = 1.75$). They also reported expecting to perform below average on the task ($M = 2.95$; $SD = 1.51$). These analyses confirm that the task was indeed perceived as relatively difficult.

Did self-affirmed participants perform better on the mental arithmetic task? Recall that task performance was operationalized as 1) number of attempted answers on the subtraction task; 2) number of correct answers on the subtraction task and 3) error rate on the subtraction task (i.e., percentage of attempted answers that were incorrect). A one-way analysis of covariance with experimental condition (own Facebook profile vs. stranger's Facebook profile) as the predictor and participants' gender, major (dummy coded) and GPA as covariates was set up for each of these dependent variables. For attempted answers, the analysis revealed a significant effect of experimental condition, $[F(1, 143) = 6.53, p = 0.01]$, with participants who viewed their own self-affirming profiles attempting fewer answers ($M = 27.09, SD = 1.37$) than participants who viewed a stranger's profile ($M = 31.96, SD = 1.31$). Of the covariates considered, gender had a significant effect $[F(1, 143) = 30.37, p < 0.001]$, with men performing better than women, but major and GPA did not (all Fs < 1.5, ns).

A similar pattern emerged for correct answers. A significant effect of experimental condition $[F(1, 143) = 6.17, p < 0.01]$ was observed, with participants who viewed their own Facebook profiles producing fewer correct answers ($M = 25.14$, $SD = 1.43$) than participants who viewed a stranger's profile ($M = 30.09, SD = 1.37$). As before, gender was a significant covariate $[F(1, 143) = 30.48, p < 0.001]$, with men performing better than women, but major and GPA were not (all Fs < 1.5, ns).

The percentage of errors participants made in the subtraction task did not differ by condition $[F(1, 143) = 0.67, ns]$, even after accounting for all the covariates. Participants who viewed their own Facebook profile made the same percentage of errors ($M = 8.94, SD = 1.19$) as participants who viewed a stranger's profile ($M = 7.63, SD = 1.14$). This pattern of results suggests that self-affirmed participants may simply have been less motivated (rather than less able) to perform well on the subtraction task than non-affirmed participants.

Effects of Facebook self-affirmation on affect

The experimental manipulation impacted participants' self-reported affect. After examining their own self-affirming Facebook profiles, participants felt more joyful, connected, loved, supported, grateful and content than participants who had examined a stranger's profile. Self-affirmed participants also reported being less humble and marginally more loving and proud (see Table 5.1 for means, standard deviations, and p-values). These results are largely consistent with the findings of Study 1.

Table 5.1: Means, standard deviations and t-tests comparisons for the affect experienced by participants in the Facebook self-affirmation and Facebook control conditions.

	Affirmed		Not Affirmed			
	M	*SD*	*M*	*SD*	*t*	*p*
Loving*	3.49	0.90	3.20	1.01	1.89	0.06
Joyful***	3.50	0.86	3.12	0.91	2.65	0.009
Giving	3.16	0.98	3.07	1.01	0.53	0.60
Empathetic	3.09	0.98	3.12	1.04	-0.19	0.85
Connected**	3.57	0.96	3.20	1.11	2.22	0.03
Loved***	3.80	0.91	3.37	1.16	2.59	0.01
Supported***	3.89	0.81	3.38	1.16	3.19	0.002
Sympathetic	3.12	0.95	3.09	1.05	0.20	0.84
Grateful**	3.87	0.90	3.48	1.09	2.42	0.02
Proud*	3.53	1.00	3.21	1.17	1.82	0.07
Content**	3.89	0.89	3.49	1.17	2.40	0.02
Clear	3.21	0.98	3.02	1.12	1.10	0.27
Vulnerable	2.22	1.10	2.14	1.08	0.50	0.62
Critical	2.51	1.09	2.72	1.27	-1.07	0.29
Humble*	2.78	0.83	3.04	1.10	-1.67	0.10
Selfish	1.97	0.86	2.09	1.10	-0.71	0.48
Scared	1.79	0.96	1.63	1.01	1.02	0.31
Sad	1.82	0.81	1.88	1.09	-0.39	0.69
Confused	1.80	0.95	2.05	1.15	-1.46	0.15
Angry	1.33	0.62	1.48	0.84	-1.29	0.20

*Difference significant at the p < 0.10 level (two-tailed)

**Difference significant at the p < 0.05 level (two-tailed)

Table 5.1 (continued)
***Difference significant at the p < 0.01 level (two-tailed)

Effects of Facebook self-affirmation on social connectedness

Although participants reported feeling more connected after viewing their own Facebook profile than a stranger's profile in the previously described affect questionnaire, the social connectedness scale did not reveal this effect [$M_{\text{own profile}}$ = 44.99, $SD_{\text{own profile}}$ = 7.83; $M_{\text{stranger's profile}}$ = 43.54, $SD_{\text{stranger's profile}}$ = 8.76; $t(155)$ = 1.09, *ns*]. None of the individual items revealed significant differences between the conditions.

Mediational analyses

Based on the literature, several potential mediators to self-affirmation effects were proposed: 1) positive affect; 2) social connectedness; and 3) implicit state self-esteem. Recall that Baron & Kenny's mediation procedure includes four criteria, the first two of which are that the independent variable (i.e., self-affirmation manipulation) predict both the dependent variable (i.e., task performance) and the potential mediators. The previous analyses confirm that the self-affirmation manipulation predicts task performance, thus fulfilling Baron & Kenny's first criterion. In a regression model with attempted answers as the dependent measure and condition as the predictor, the beta-coefficient for condition was highly significant (β = -0.22, p = 0.006). The same was true for the correct answers dependent measure (β = -0.22, p = 0.007). However, the analyses above also show that the self-affirmation manipulation only predicts two of the proposed mediators: positive affect (specifically, feeling loving, joyful, connected, loved, supported) and implicit state self-esteem. Further analyses are hence continued only with these potential mediators.

Baron & Kenny's third criterion is that the proposed mediator be a significant predictor in a regression model with the dependent and independent variables included. Consider first attempted answers as the dependent variable. In a regression model with experimental condition as the independent variable and gender, major and GPA as covariates, the potential mediators were introduced one at a time. The majority did not achieve significance (for loving, $\beta = -0.01$, *ns*; for joyful, $\beta = -0.06$, *ns;* for connected, $\beta = -0.03$, *ns;* for implicit self-esteem, $\beta = -0.02$, *ns*). Feeling "supported" did achieve marginal significance ($\beta = 0.15$, $p = 0.06$). However, the introduction of this new predictor did not reduce the beta-coefficient for self-affirmation compared to step 1 of the procedure ($\beta = -0.28$, $p = 0.006$). Thus, the data is inconsistent with either partial or full mediation.

Consider next correct answers as the dependent variable. In a regression model with experimental condition as the independent variable and gender, major and GPA as covariates, the potential mediators were introduced one at a time. None achieved significance (for loving, $\beta = -0.05$, *ns*; for joyful, $\beta = -0.07$, *ns;* for connected, $\beta = -0.07$, *ns;* for supported, $\beta = -0.09$, *ns;* for implicit self-esteem, $\beta = -0.03$, *ns*).

Considered together, these data provide no evidence for mediation by affect or implicit self-esteem on the effect of self-affirmation on task performance.

Discussion

The purpose of Study 3 was to paint a more complete picture of the self-affirming properties of Facebook profiles identified in Study 1. Specifically, it sought to elucidate how Facebook self-affirmation affects perceptions of the self, not just perceptions of external events, and to investigate how Facebook self-affirmation affects actual behaviors, not just attitudes and perceptions. Additionally, one of the goals of Study 3 was to continue the search for mediators of Facebook self-affirmation, which had proved elusive in Study 1.

Facebook self-affirmation was manipulated using the same procedure developed in Study 1: participants were either self-affirmed by examining their own Facebook profiles for five minutes, or were *not* self-affirmed by examining a stranger's profile. Importantly, non-affirmed participants, as a group, were exposed to the same profiles as the affirmed participants. This procedure ensured that participants in the two conditions were exposed to the same information and, perhaps more critically here, that control participants examined an average profile, rather than the profile of a clearly superior or inferior other. Since upward or downward social comparison has been shown to influence both self-evaluation (Festinger, 1954) and task performance (Johnson et al., 2008), it was important that these confounding processes not be elicited in this study.

The first question posed by this study concerned the effect of Facebook exposure on participants' self-evaluations. An implicit measure of state self-esteem was used to gauge participants' self-evaluative responses immediately after examining their own, or an average stranger's Facebook profile. Based on the argument that Facebook users should be motivated and able to present themselves in a flattering yet credible manner in their profiles, it was hypothesized that exposure to one's own profile should temporarily raise self-esteem. Consistent with expectations, results show that the act of reviewing the attractive and socially connected version of the self encapsulated in the Facebook profile resulted in a surge in positive self-evaluations. These results complement Study 1's findings that exposure to one's own Facebook profile results in increased self-directed positive affect (i.e., feeling "loved," "connected," "supported" and "proud") using a more sophisticated measure of self-evaluations. Together, this set of findings provide an extension to Walther's Hyperpersonal model of impression formation (1996) by examining the effects of the selective self-presentation enacted in Facebook profiles (see Chapter 2 for an

extensive discussion of this topic) on self-perceptions rather than others' perceptions of the self. Just like others' impressions of the self are likely to be intensified following interaction in online spaces (Walther, 1996), self-impressions are also intensified – presumably because the version of the self captured by the profile is thoughtfully constructed to reflect the best aspects of the self.

This study's examination of implicit state self-esteem following Facebook exposure also has important implications for self-affirmation theory. An ongoing disagreement in the field concerns the role of state self-esteem in self-affirmation processes (see Sherman & Cohen, for a review). Theoretically, self-affirmation should operate by raising state self-esteem, because it is thought to increase perceptions of one's overall adequacy, competence and integrity as an individual (Tesser, 2000). Yet a series of studies have found no increase in state self-esteem following self-affirmation (Galinsky et al., 2000; Schmeichel & Martens, 2005). However, this research has been criticized for using explicit measures of self-esteem (Tesser, 2000), which are known to be subject to social desirability bias (Baumeister et al., 1989). The present study used implicit measures of self-esteem to address the same question. Implicit measures are preferable not only because they reduce social desirability bias, but also because they tap attitudes that may not be accessible to the conscious mind (Greenwald & Farnham, 2000). As discussed earlier, the findings showed that Facebook self-affirmation was indeed accompanied by a raise in state self-esteem, but that this raise was not responsible for the behavioral effects of self-affirmation. This is consistent with Koole and colleagues' (1999) findings that self-affirmation raises state self-esteem (implicitly measured using the name-letter effect), but that this raise does not necessarily affect self-affirmation outcomes. Together, the present study and Koole et al.'s (1999) work provide compelling evidence that self-affirmation is accompanied by elevated state self-esteem, but that the two processes are independent

90

of each other, supporting Sherman and Cohen's (2006) similar conclusion. Future work is necessary to untangle the conceptual and operational meaning of self-integrity, the building block of self-affirmation theory, and self-esteem. In what way are these two processes different, and what is the relationship between them?

The second goal of this study was to examine the effect of Facebook self-affirmation on behavioral outcomes, specifically task performance. This was important for two reasons. First, Facebook use is an everyday activity whose ubiquity (i.e., the average user spends 55 minutes on Facebook daily) has raised questions about its effects on users' offline lives (Karpinski, 2009). Second, the self-affirmation literature has given disproportional attention to perceptual rather than behavioral outcomes of self-affirmation, and it is rather scarce on the latter topic. In fact, the effect of self-affirmation on task performance, an important type of behavior, has only recently been explored and conclusions have been inconsistent with each other.

Prior work on the effect of self-affirmation on task performance has suggested that self-affirmation boosts performance by reducing the negative effect of stereotype threat (Schmeichel & Martens, 2005), and that it hampers performance by reducing the motivational boost of upward comparison threat (Johnson & Stapel, 2007; Johnson et al., 2008). The first account is based on the assumption that self-affirmation improves the *ability* to perform, while the second assumes that self-affirmation decreases *motivation* to perform. Although incompatible on the surface, these claims are jointly plausible as long as their boundary conditions are explicated. The present study represents a first step in exploring these boundary conditions. While prior research has only analyzed the effect of self-affirmation on performance when participants were operating under some type of identity threat, the present study took a step back and investigated the effect of self-affirmation when no prior threat was present. Similar to the previous studies on this topic, this study also considered

91

performance on a task of medium difficulty (i.e., rapid serial subtraction by intervals of seven from a large number). Indeed, participants rated the task as moderately threatening (about 3.5 on a scale from 1 – not at all threatening to 7 – very threatening) and expected their performance to be below average (about 3 on a scale from 1 – not at all successful to 7 – very successful). Under such neutral circumstances, does self-affirmation primarily affect participants' ability or motivation to perform?

Results show that affirmed participants performed significantly worse than non-affirmed participants. Importantly, this decreased performance appeared to be due to a lack of effort rather than of ability: affirmed participants attempted fewer answers on the serial subtraction task, but their error rate was no different from that of their non-affirmed counterparts. This pattern of results is consistent with Johnson and colleagues' (Johnson & Stapel, 2007; Johnson et al., 2008) contention that self-affirmation can harm performance by decreasing motivation to expend effort on the task. If the integrity and adequacy of the self is already secured by a self-affirmation exercise, there is little psychological need to prove oneself by performing well in an unpleasant yet diagnostic task. For participants in this study (i.e., Cornell University students), maintaining an elevated academic self-concept is typically an important endeavor, and performing well on an academic task represents a means to this end – that is, the subtraction task can be conceptualized as an opportunity to self-affirm. But this type of self-affirmation can be rendered superfluous by a prior self-affirmation exercise – in this case, reviewing one's Facebook profile. This is consistent with Tesser and Cornell's (1991) conclusion that the self is satisficing, rather than maximizing: people seek to maintain a "good enough" self-concept rather than take any opportunity available to self-enhance. In this study, Facebook use can be substituted for high-quality academic task performance in maintaining participants'

92

self-concept, which showcases the psychological importance of this online activity.

This study shows that when participants do not experience any prior threat and the task at hand is only moderately difficult, self-affirmation hampers performance. It is plausible, however, that if the task were more stressful, self-affirmation might boost rather than harm performance. Recall that one line of research suggests that self-affirmation reduces both psychological (Schmeichel & Martens, 2005) and physiological stress (Cresswell et al., 2008). Future work is necessary for examining this claim as well as for elucidating the boundary conditions of the relationship between self-affirmation and performance.

What do these results mean for the everyday use of Facebook? As mentioned earlier, Facebook has been criticized for being associated with decrements in school performance by both college and graduate students (Karpinski, 2009) and more generally for being a time sink and procrastination tool (Hodkinson, 2008; Koloff, 2008; Stone, 2007). While current results do underscore negative effects of Facebook use on academic performance, they need to be interpreted with caution. First, results show that a certain type of Facebook activity (i.e., examining one's own profile) decreases performance relative to another type of Facebook activity (i.e., examining an average student's profile). It is impossible, then, to compare the effect of Facebook use to that of other daily activities, or to no use at all. Second, the performance examined here (i.e., subtraction task) is only meaningful in that it could affect participants' self-image; however, it has no repercussions on participants' actual academic performance or success in school. If the stakes of the performance were higher, it is unclear how Facebook self-affirmation would have affected it. Future work is necessary to more fully examine the impact of Facebook use, including a more varied spectrum of Facebook activities (i.e., social investigation, commenting on

friends' profiles, constructing one's own profile), on motivation and ability to perform well in school and outside of it.

The final goal of this study was to continue to examine the mechanism of Facebook self-affirmation. The mediators examined in Study 1 (i.e., self-directed and other-directed positive affect) were also considered here with a larger sample size, yet they did not reach significance. Together, Study 1 and the current study provide more compelling evidence that, at least in the case of Facebook affirmation, this type of affect is not responsible for self-affirmation outcomes. However, it is important to note that Crocker et al.'s (2008) finding that feeling "loving" towards others and thus transcending the self is responsible for self-affirmation effects was generated in the context of values-essays affirmation. It is plausible that different types of self-affirmations operate through different mechanisms, which is consistent with Steele's (1988) claim that self-affirmation takes myriad forms and with Sherman & Cohen's (2008) claim that several distinct mechanisms are likely responsible for self-affirmation effects. Nonetheless, future work is still necessary to replicate Crocker et al.'s (2008) findings.

New mechanisms of self-affirmation were also considered. The role of implicit state self-esteem was discussed earlier. Additionally, a scale of social connectedness was included given that the single item measuring connectedness in Study 1 approached significance and that, theoretically, Facebook's greatest social affordance is enabling connectedness. However, the connectedness scale was unrelated to the dependent measure in this study, suggesting that a different mechanism is responsible for the effects of Facebook on task performance. Although disappointing, the fact that the current study did not identify mediators of Facebook self-affirmation effects is not surprising. In spite of voluminous research on self-affirmation spanning several decades, it has been notoriously difficult to identify the mechanism of self-affirmation

94

(see Sherman & Cohen, 2006 for a review). There is a need for both theoretical development and empirical work to explicate the psychological mechanism of self-affirmation, in all its incarnations.

Conclusion

The present study uncovered a further benefit of Facebook use: a temporary boost in self-esteem following exposure to one's own profile. However, it also revealed a potential downside of Facebook use: decreased motivation to perform well on unpleasant yet identity-relevant tasks. In so doing, it contributed to self-affirmation theory by providing some clarity on the previously contentious issue of self-affirmation outcomes on task performance. It also shed light on the mediating effect (or lack thereof) of several theoretically meaningful variables, such as state self-esteem, social connectedness and positive affect.

CHAPTER 6

GENERAL DISCUSSION

A long research tradition in psychology has examined the uniquely human motivation to engage in behaviors whose purpose is to secure a sense of self-worth. This sense of self-worth is contingent on representing the self as competent, good, socially desirable and integrated within a network of meaningful relationships (Steele, 1988). The rise of social network sites, a recent Internet phenomenon, has given cause to revisit some of these psychological principles regarding the pursuance of self-worth. Social network sites allow users to create novel self-representations that emphasize the dimensions on which self-worth is typically contingent: social attractiveness, treasured characteristics, values and goals. Most importantly, the raison d'être of social network sites is to facilitate and record personal relationships, perhaps the most critical contingency of self-worth.

The purpose of this dissertation was to examine whether social network sites play a role in self-worth maintenance processes. Does spending time on one's carefully crafted online profile restore a sense of self-worth and self-integrity? Do social network sites fulfill the basic motivation to protect and maintain self-worth, and are they sought after for this reason? If so, what are some of the perceptual and behavioral consequences of social network use?

These questions were examined through the theoretical lens of self-affirmation theory (Steele, 1988; see Sherman & Cohen, 2006 for a recent review), a robust and extensively validated framework for explicating the consequences of achieving a satisfactory perception of self-worth (i.e., being "self-affirmed"), and the circumstances under which people pursue opportunities for self-validation. In short, self-affirmation theory posits that perceiving the self as valuable, worthy and good is a primary human drive, one that can be satiated by engaging in self-affirmation

exercises, such as bringing to awareness positive aspects of the self (i.e., treasured characteristics, values, goals and meaningful personal relationships). Once affirmed thusly, individuals are less likely to engage in other self-protective activities, that would have also fulfilled the need for positive self-regard but perhaps in a less adaptive fashion (e.g., by distorting and dismissing threatening information). According to the theory, the sources of self-affirmation in everyday life are abundant, with any information that represents the self in a positive and meaningful way having self-affirming potential. Another key proposition of self-affirmation theory is that people unconsciously cultivate and seek these opportunities to boost their self-worth, particularly in times of psychological distress.

The empirical studies reported in this dissertation support the notion that Facebook, a prototypical social network site, serves as an everyday source of self-affirmation. Results show that Facebook profile exposure operates similarly to a well-established self-affirmation exercise (Study 1), suggesting that it does offer a boost in perceptions of self-worth. Moreover, this type of self-affirmation is actively sought after in times of psychological need, with users gravitating towards their Facebook profiles following a blow to the ego (Study 2). Consistent with self-affirmation theory, Facebook profile exposure also increases users' state self-esteem, and reduces their motivation to pursue other venues for self-affirmation (Study 3).

This set of results provide several theoretical advancements to self-affirmation theory and they also contribute new insights on the causes and effects of social network site use, a topic that has only begun to be systematically addressed. Below, both types of contributions are discussed in detail.

Self-affirmation Theory Revisited

Although the recipient of much scholarly attention, self-affirmation theory suffers from some noteworthy empirical lacunae. Specifically, two of its key

propositions, both of which pertain to how self-affirmation operates in people's everyday lives, have remained largely ignored by existing research. First, although the theory is clear that everyday life is replete with sources of self-affirmation, the vast majority of studies to date have operationalized self-affirmation as "exercises" designed by social psychologists and administered in lab settings. Specifically, the self-affirming activities most commonly investigated are ranking one's most important values from a pre-determined list and writing essays about them (McQueen & Klein, 2006). While effective in restoring self-worth, these activities are hardly mundane. How, then, do people affirm themselves in their own environments, on an everyday basis? What activities do they find self-affirming?

Emerging research has suggested two such self-affirming activities: receiving positive feedback on tests of personality, social perceptiveness or social skills, although this feedback was false (e.g., Blanton et al., 1997; Cohen et al., 2000, Study 2; Heine & Lehman, 1997) and performing well on a diagnostic task when the opportunity to partake in such a task was offered (e.g., Johnson et al., 2008). Although these activities are plausible in everyday life, they are still contingent on the intervention of an experimenter, and are not common. The present studies contribute to this line of work by identifying an outlet of self-affirmation that is a quintessential self-directed everyday activity: use of social network sites. With 400 million users who spend an average of 55 minutes online every day, Facebook certainly represents an accessible, almost effortless daily activity for buffering self-worth.

Not only did Study 1 establish that Facebook profile exposure is equivalent to a classic self-affirmation manipulation in reducing defensive responses following an ego threat, but it also compared the two self-affirming activities in their ability to elicit positive affect. By and large, similar amounts of self-directed and other-directed positive feelings were elicited, suggesting that bringing to awareness important values

98

is psychologically similar to bringing to awareness positive representations of the self (i.e., selective self-presentation on Facebook) coupled with reminders of meaningful relationships (i.e., "friends," as defined by Facebook, and communications with those friends in the form of "wall posts," etc.).

The level of psychological similarity between examining one's carefully constructed Facebook profile and writing about one's most important values can shed some further light on the nature of self-affirmational processes. On the one hand, this similarity may be due to the fact that both activities primarily affect the same aspect of the self-concept: meaningful personal relationships with friends and family. As noted in a meta-analysis of self-affirmation studies (McQueen & Klein, 2006), participants in experimental studies typically identify personal relationships as their most important value, and write essays replete with examples of memorable interactions with friends and family. Indeed, this was also the case in Study 1. Similarly, the raison d'être of Facebook is to preserve and record personal relationships with friends, even though the interactions captured on Facebook are of a more mundane nature. This suggests that a renewed sense of personal connection with friends and family members may have been driving the self-affirmational effects observed in these studies, and, generally speaking, that it is an especially potent self-affirmational activity.

On the other hand, it is possible that Facebook's self-affirmational appeal is due to boosting other aspects of the self-concept, in addition to personal relationships. Recall that Facebook users are in a position to engage in selective self-presentation (Walther, 1996; 2007) – that is, they are motivated and able to put their best foot forward by selectively representing themselves at their best. For instance, users tend to showcase their treasured activities (i.e., traveling, reading, etc.), physical attractiveness, and sense of humor. If affirming these aspects of the self is psychologically similar to writing about one's most important values, we may draw

conclusions regarding the *fluidity* of the self-concept (Steele, 1988; Tesser, 2000) in a new way than previously theorized. The fluid compensation hypothesis argues that the domains of the self on which self-worth is contingent are substitutable for one another, in the sense that if one domain is threatened, affirming a different, unrelated domain can restore perceptions of self-worth. If affirming the self via selective self-presentation of important attributes on Facebook is the psychological equivalent of writing essays about important values, we may also conclude that the positive aspects of the self may be substitutable for one another, not simply that a positive domain substitutes for a negative, threatened one. As will be discussed shortly, future research is necessary to establish whether the different domains of the self (i.e., personal relationships, values, goals) have similar self-affirmational potential, or whether some are more potent than the others in reducing defensiveness.

Even though Facebook profile exposure appears to be the psychological equivalent of writing essays about important values, it is also important to note the differences between these activities. One interesting difference is that the latter is a self-generated piece of writing, whereas the former is jointly created by the self and by others (i.e., "friends" in the system). Thus, although all affirmations examined in prior research have been self-produced, it appears that this is not a necessary condition for affirmation to occur. Another difference is that the values-essay affirmation involves a relatively effortful task (i.e., writing), whereas the level of effort involved in Facebook affirmation is minimal (i.e., browsing). This suggests that the "process of bringing to awareness important aspects of the self," as self-affirmation is defined, can be relatively easily accomplished and requires little cognitive effort.

Together, these differences between the classic self-affirmation manipulation and Facebook further clarify the question of what constitutes an everyday source of self-affirmation. It appears that self- as well as other-generated statements that are

100

processed in a cognitively effortless manner fit the bill for self-affirmation. These insights can prove useful as future research identifies other everyday sources of self-affirmation.

Another lacuna that this dissertation addressed concerns the empirical testing of a key proposition of self-affirmation theory: that self-affirmation will be actively (albeit unconsciously) sought after in an effort to maintain and repair self-worth. As Sherman and Cohen's (2006) extensive and detailed review of self-affirmation theory reveals, existing empirical work on this theoretical framework has favored effects rather than causes of self-affirmation, and positive rather than negative such effects. This is understandable given the sizeable benefits (e.g., reduced stereotyping, acceptance of potentially life-changing health information, decreased bias in a variety of situations) conferred by what appears to be a very simple psychological intervention. But it is equally important to determine under what circumstances these benefits materialize. When do people pursue self-affirmation? What causes them to seek ego-restorative activities?

Having established that Facebook profile exposure is self-affirming (Study 1), this dissertation investigated self-affirmation theory's claim that self-affirmation will be pursued in times of psychological need (Study 2). Consistent with expectations, exposure to one's Facebook profile was sought following a blow to the ego, providing much-needed empirical support to this fundamental proposition of self-affirmation theory. Together, Study 1 and Study 2 are unique in showing not only that a certain activity *can* be affirming, but also that it *is* actively pursued for the purpose of affirming the self.

Further research is needed to replicate these findings and to provide boundary testing for the conditions under which people seek self-affirmations. For instance, when given the opportunity to directly address the threat or affirm the self in an

unrelated domain, which option do people prefer? Given a choice of outlets for self-affirmation, which one is preferred? Self-affirmation makes specific claims regarding these issues, thus providing a rich and detailed framework for guiding future research. Additionally, it is necessary to establish how self-worth is *maintained*, not simply repaired. How much such maintenance do people perform on a daily basis, and what prompts it? In the present research, participants whose self-worth was not threatened (i.e., control condition) did not show a preference for affirming the self versus engaging in activities unrelated to feelings of self-worth. It is possible that self-worth maintenance processes are less frequently enacted, perhaps once or twice a day, freeing the self to pursue other activities. In Study 2, participants in the control condition who were presumably bored after receiving neutral feedback on their performance showed a preference for engaging in exciting activities. It appears then that mood management processes (see Zillmann, 1988) trumped self-worth maintenance processes in this instance. Future research is needed to investigate when self-worth maintenance processes take priority over other activities benefiting the self.

Earlier it was pointed out that extant research on self-affirmation has been paying a disproportionate amount of attention to the benefits, rather than the pitfalls, of self-affirmation. While revealing a plethora of benefits of Facebook self-affirmation, the present research has also uncovered potentially problematic aspects of self-affirmation: specifically that it may harm performance on a subsequent difficult yet identity-relevant task (Study 3). Results suggests that once a perception of self-worth has been achieved through a self-affirmation exercise, the motivation to engage in other behaviors that may boost self-worth, such as performing well on a challenging task, is reduced. By acting as a de-motivator of behaviors that could otherwise validate the self, self-affirmation can have negative consequences – of course, to the extent that the behaviors it de-motivates are positive. Emerging research has also provided

102

evidence for this claim, with self-affirmed participants performing more poorly on a verbal abilities task than non-affirmed participants (Johnson & Stapel, 2007; Johnson et al., 2008). Future work is necessary on the conditions in which self-affirmations might backfire. What kinds of behaviors does a prior self-affirmation de-motivate? In both the current study and Johnson and colleagues' work, the task participants were asked to complete following the self-affirmation exercise was unpleasant and relatively difficult. It is possible that self-affirmation might only de-motivate such aversive tasks, without affecting behaviors on identity-relevant yet pleasant or effortless tasks, such as spending time with friends and family members.

Together, the results of Study 2, where *negative* perceptions of self-worth motivated the seeking of self-affirming outlets, and the results of Study 3, where *positive* perceptions of self-worth de-motivated the seeking of self-affirming outlets, provide compelling evidence that current perceptions of self-worth are a vital motivator of spontaneous self-affirmations. Moreover, these spontaneous self-affirmations appear to operate through a dual mechanism: *approach* activities that can restore the self following daily threats (i.e., Facebook profiles) and *avoid* activities that are costly to perform and irrelevant to current perceptions of self-worth (i.e., perform well on an aversive task). Thus, spontaneous self-affirmations emerge as motivated acts that maximize psychological well-being while minimizing costs to the self.

The final contribution brought by this set of studies to self-affirmation theory concerns the mechanism of self-affirmation. While Studies 1 and 3 both failed in identifying the mediators of self-affirmation via Facebook profiles, they offered evidence that positive affect and state self-esteem, two theoretically compelling mediators, were *not* in fact responsible for self-affirmation effects. This corroborates prior findings to this effect and provides support for claim that self-affirmation is different in a subtle but important way from state self-esteem and positive affect (see

Sherman & Cohen, 2006). While it is up to future research and theorizing to disentangle these processes, it appears that the subjective experience of self-integrity and self-worth, while accompanied by positive feelings, has more profound ramifications for the self, and it is those ramifications that translate into the perceptual and behavioral effects noted here and elsewhere.

The moderating role of trait self-esteem was also explored. Although subject to opposing predictions in the literature, trait self-esteem emerged as insignificant in self-affirmation effects: it did not impact perceptual outcomes of self-affirmation (Study 1), or the likelihood of pursuing self-affirmation to repair self-worth (Study 2). This speaks to the universality of self-affirmational processes, and is consistent with Steele's initial conceptualization (1988), that made no differentiation between groups of people in their ability to benefit for self-affirmation.

Motives, Benefits and Costs of Facebook Use

Why and to what effects people use Facebook, whose popularity has reached unprecedented levels, is a subject of great interest and a cause of much speculation (Hodgkinson, 2008; Koloff, 2008; Stone, 2007). Academic research has begun to address these questions by identifying users' self-reported motivations for joining the site (Joinson, 2008) and contributing content to the site (Burke, Marlow, & Lento, 2009). Research has also uncovered a series of correlations between Facebook use and positive psychological and social outcomes, such as increased social capital (Ellison et al., 2008); increased life satisfaction, social trust, civic engagement and political participation (Valenzuela, Park, & Kee, 2009); and increased college student motivation, affective learning, and positive classroom climate (Mazer, Murphy, & Simonds, 2007).

Broadly speaking, the present studies contribute to this body of work by identifying psychological motivations for Facebook use that occur beyond conscious

awareness, and by examining how Facebook shapes users' psychological worlds in a plurality of ways: how it affects their self-perceptions, their perceptions of others and even their behaviors. Methodologically, these studies contribute to existing work by singling out a specific type of Facebook activity (i.e., profile browsing), rather than aggregating the various activities that are possible on Facebook, and by testing the effects of this activity in a controlled experimental setting that allows for causal inference. In particular, the experimental approach constitutes an important addition to the existing literature that has mostly employed correlational measures.

At the heart of this research lies the premise that the Facebook profile constitutes a representation of the self at its most desirable and socially attractive. This enhanced self-representation is rendered possible by two key affordances: (1) the ability to amass and correspond with social connections – that is, to represent the self as embedded into a network of meaningful relationships; and (2) the ability to engage in selective self-presentation (Walther, 1996; 2007) – that is, to paint a self-portrait that strategically displays flattering yet credible aspects of the self. Due to these affordances, the present research conceptualized the Facebook profile as a warm, comforting and psychologically secure space, which may bestow psychological benefits upon its users[2].

Indeed, a series of psychological benefits resulting from a brief exposure to one's flattering and socially connected Facebook profile were revealed. Study 1 demonstrated that this brief exposure has a profound impact on the self-concept, as it restores a self-perception of integrity, worth, and intrinsic value. In other words, the Facebook profile affirms the self. In turn, this Facebook-induced self-affirmation

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[2] A noteworthy caveat is that even though the present studies, as well as other recent work (e.g., Ellison et al., 2007; Kramer, 2010; Sas et al., 2009), have found Facebook to be a psychologically warm and secure environment, there certainly are exceptions to this rule – as highlighted in the media and in recent research on cyber bullying (e.g., Shariff, 2008).

translates into a series of other psychological benefits, such as a more open mind and a more secure attitude towards threatening events. In Study 1, participants who were affirmed by spending time on their own Facebook profiles were more likely to take responsibility for their perceived failure on a task, and less likely to blame others. This reduced defensiveness is conducive to learning from one's mistakes and to reduced rumination, although these further benefits were not directly investigated here.

In addition to affirming the self, Facebook profile exposure offered other noteworthy psychological benefits. Both Studies 1 and 3 showed that spending time on one's own Facebook profile resulted in increased positive affect, both directed towards the self (i.e., feeling loved, supported, connected, content, proud) and directed towards others (i.e., feeling giving, loving). More importantly, Facebook profile browsing also temporarily raised owners' self-esteem – that is, it led them to view themselves more favorably. Considered together, these results support the notion that the Facebook profile is a psychologically comforting space, that is capable of improving both mood and self-esteem, and also of encouraging prosocial sentiments. Interestingly, these psychological benefits were experienced both on a conscious level (i.e., participants report warm feelings following profile exposure) and on an unconscious level (i.e., the experience of elevated self-worth is unconscious, and it is possible that the same is true of increased state self-esteem). The results are consistent with prior research that has correlated Facebook use, broadly defined, with positive psychological outcomes, such as increased social capital, social trust and life satisfaction (Ellison et al., 2008; Valenzuela et al., 2009), and advance this research by suggesting that these psychological benefits may start with the basic experience of spending time on the profile.

But are there any psychological costs of Facebook use? Paradoxically, the increase in self-worth induced by Facebook profile exposure were shown to backfire

106

by reducing users' motivation to perform well in a subsequent difficult, but important task. By affirming the self, Facebook may render such efforts to prove oneself superfluous. While media accounts and emerging studies have also proposed that Facebook has negative consequences for school performance, they have blamed these performance decrements on Facebook's use as a procrastination tool or as an activity that takes time away from studying (Hodgkinson, 2008; Koloff, 2008; Stone, 2007). The present work offers a more sophisticated, if narrower, view on Facebook's effects: by providing psychological comfort, certain Facebook activities may be de-motivating for task performance. This is the first account that examines Facebook's effect on users' motivation to engage in subsequent tasks. Future research is necessary to examine this effect on a more diverse array of behavioral outcomes.

Precisely because it is a psychological space associated with warm feelings and an elevated sense of self-worth, Facebook was also assumed to be inviting and alluring to its users. This hypothesis was supported. Study 2 demonstrated that users were motivated to spend time on their Facebook profiles following a blow to the ego, but, interestingly, that they did so unconsciously. This finding illuminates users' motivation to access Facebook in a new way: Facebook use is seen as being prompted by external circumstances (in this case, bad news regarding one's abilities as a public speaker) and by users' unconscious goals to restore a wounded ego. By highlighting how situational factors interact with implicit goals in determining Facebook use, this study represents an important addition to the literature on motivation to access social network sites, that has so far focused on self-reported motivations (e.g., Acquisti & Gross, 2006; Ellison, Steinfield, & Lampe, 2007).

Additionally, this work may provide a previously unexplored explanation for the allure of Facebook. While studies to date have emphasized the appealing nature of many of Facebook's affordances (i.e., social investigation, meeting new people, etc.),

these affordances do not fully account for Facebook's tremendous popularity, as they are shared by many other social network sites. By conceptualizing the Facebook profile as a venue for self-affirmation, the present work suggests that powerful, unconscious motives to maintain and restore self-worth operate by attracting users to repeatedly access the site. From this perspective, Facebook's success partially lies in offering users the ability to construct a version of the self that is attractive and socially connected, and hence irresistible.

Future Directions

In addition to the avenues for theoretical clarification already suggested, this dissertation raises several other important questions regarding the self-affirming effects of Facebook in particular, and the uses and effects of Facebook more generally. Perhaps the key question that remains elusive is which components of the Facebook profile drive self-affirmation effects. As mentioned earlier, Facebook offers several opportunities for self-affirmation, chief among them being the representation of social connectivity and the ability to engage in a selective self-presentation of the most flattering and positive attributes of the self. It is possible that only one of the two is responsible for the self-affirmation effects observed here, or that both jointly operate to produce the observed effects. Future research is necessary to disentangle these processes. For instance, is reading the Facebook "wall," where friends post comments, sufficient to produce self-affirmation effects? How does this activity compare with viewing one's flattering collection of profile photographs, also presumed to induce self-affirmation?

Relatedly, profile browsing is only one of many activities possible on Facebook. Users also frequently update their own profiles, communicate with friends, and investigate others. Are any of these other activities self-affirming? It is possible that the very act of self-presenting (i.e., uploading photographs, writing status

updates), as well as directly communicating with others (i.e., accepting friend requests, posting comments on friends' walls and photographs) constitute venues for self-affirmation? Such an analysis could more fully explain the psychological effects of Facebook use, and could also expand the search for everyday venues of self-affirmation, thus contributing to self-affirmation theory.

If the goal is to more broadly explicate Facebook's effects on the self-concept, it is also necessary to examine what other psychological processes are elicited by the various activities possible on Facebook. For instance, examining others' profiles could elicit social comparison processes, which in turn can motivate subsequent behavior. Comparing the self with a clearly superior other could have a negative effect on state self-esteem and mood, but could enhance performance on subsequent tasks in order to restore damaged feelings of self-worth. Conversely, comparing the self with a clearly inferior other could provide a temporary boost in self-esteem yet de-motivate future performance.

With respect to the causes of Facebook use – or what compels users to gravitate towards Facebook, it is important to examine users' motivation when they are *not* subjected to an ego threat. Earlier the possibility that ego *maintenance*, not just ego repair, processes might motivate users to spend time on Facebook was suggested. To what extent does a desire to maintain an elevated perception of self-worth drive Facebook use? Are there any other unconscious motivations that draw users towards Facebook? For instance, mood management theory (Zillmann, 1988), also posits that an unconscious desire to regulate mood states explains people's choice of mediated messages, and it is likely that such motivations are also responsible for Facebook use under certain circumstances.

An exciting set of findings in this dissertation pertains to the psychological benefits of Facebook profile browsing, such as elevated state self-esteem and positive

affect. How long do these benefits last? Also, are there any effects associated with this boost in mood? For instance, positive mood has been shown to lead to more positive interactions with others and to more helpful behaviors (George & Brief, 1992).

Conclusion

In showing that Facebook profiles constitute an everyday venue for self-affirmation that is actively pursued by users in times of psychological need, this dissertation has contributed important insights both to self-affirmation theory and to an understanding of the uses and effects of social network sites. As far as self-affirmation theory is concerned, the present studies have provided some initial evidence as to how self-affirmation operates in people's everyday lives. Most notably, they have identified the novel representation of the self that is enabled by social network sites as a source of self-affirming information, and in doing so have begun to clarify the nature of daily self-affirmations that occur outside of the well-validated writing task administered by social psychologists. Results show that naturally occurring communication activity produced by the self and by others, that is processed in a relatively effortless manner, has similar self-affirming properties to the more cognitively taxing reminiscence of important values that has been the gold standard in psychology studies. This suggests that daily self-affirmations may be a lot more common and easier to access than previously thought – perhaps as easy as browsing through personal photographs for a couple of minutes, or visiting one's website.

With respect to the uses and effects of Facebook, this dissertation has highlighted the soothing and revitalizing properties of the Facebook profile, although it has also identified some psychological costs associated with it. Despite these costs, the Facebook profile emerges as a psychological space that is conducive to emotional well-being and invites repeated use.

APPENDICES

Feedback (Study 1)

You seemed somewhat uncomfortable and nervous while delivering your speech. I understood your arguments, but I thought that they could have been stronger. Compared to others, I thought that you are using quite a few disfluencies ("ums" and "ahs") and you seem to have some doubts about your social competence. Overall, I'd say that you need some work to improve your public speaking skills.

Rosenberg's Self-esteem Scale

Please indicate the extent to which you agree with each of the following statements on a scale from 0 (strongly disagree) to 3 (strongly agree).

1. I feel that I am a person of worth, at least on an equal basis with others.

2. I feel that I have a number of good qualities.

3. All in all, I am inclined to feel that I am a failure.

4. I am able to do things as well as most other people.

5. I feel I do not have much to be proud of.

6. I take a positive attitude toward myself.

7. On the whole, I am satisfied with myself.

8. I wish I could have more respect for myself.

9. I certainly feel useless at times.

10. At times I think I am no good at all.

Affect Measure

Please use a scale from 1 (not at all) to 5 (extremely) to rate how much you are
currently feeling:

1) loving

2) joyful

3) giving

4) empathic

5) connected

6) loved

7) supported

8) sympathetic

9) grateful

10) proud

11) content

12) clear

13) vulnerable

14) critical

15) humble

16) selfish

17) scared

18) sad

19) confused

20) angry

Dependent Measures (Study 1)

All responses are recorded on 9-point Likert scales that used the anchors listed after
each item.

Perceived Accuracy of the Feedback

1. How accurate do you think the feedback was? *(extremely inaccurate-accurate)*

2. How much could a stranger learn about your public speaking abilities from reading
this feedback? *(nothing at all-a great deal)*

3. How much did you agree with the feedback? *(strongly disagreed-strongly agreed)*

4. How well thought out do you think the feedback was? *(not well thought out-
extremely well thought out)*

5. How much did the evaluator learn about your public speaking abilities by watching
you give the speech? *(nothing at all-a great deal)*

Manipulation check

1. How positive did you think the feedback was? (*not at all – a great deal*)

Perceived Competence of Evaluator

Rate where you think the person who gave you feedback would fall on the following
traits by circling a number.

1. judge other people's public speaking abilities *(extremely unable-extremely able)*

2. be an accurate evaluator of others' public speaking abilities (same as 1)

3. be an objective/fair evaluator of others' public speaking abilities (same as 1)

Evaluation of the Diagnosticity of the Task

1. How useful do you think videoconferencing is for assessing people's public
speaking abilities? (*not at all – a great deal*)

2. How much do you think an observer can learn about somebody's public speaking
abilities just by watching that person give a speech on a webcam? (same as 1)

Attribution to Self and to Other

1. To what extent do you think the feedback you received today was a result of your actual public speaking abilities? *(Not at all a result of my behavior-totally a result of my behavior)*

2. To what extent do you think the feedback you received was NOT a result of your public speaking abilities, but a result of the evaluator's personal way of judging others? *(Not at all a result of his/her way of judging others-totally a result of his/her way of judging others)*

3. To what extent do you think the feedback you received was NOT a result of your public speaking abilities, but a result of the technology involved in this task?

Attraction to the Evaluator

1. How much do you think you would like the person who wrote this feedback? *(would not like this person at all-would like this person a great deal)*

2. Describe your general reaction to the person who wrote the feedback. *(extremely negative-extremely positive)*

Measures of Facebook Use (Study 1)

A 1 to 5 scale is used for all these measures.

1. How well does your Facebook profile represent who you are as a person? (*not at all well – very well*)

2. How well does your Facebook profile represent your values and attitudes? (*same as 1*)

3. How well does your Facebook profile represent your activities and hobbies? (*same as 1*)

4. How well does your Facebook profile represent your social connections? (*same as 1*)

5. How well does your Facebook profile represent your physical appearance? (*same as 1*)

6. How accurate is your Facebook profile? (*extremely accurate – extremely inaccurate*)

7. How comprehensive is your Facebook profile? (*not at all – very*)

8. How positive is your Facebook profile? (*very negative – very positive*)

9. How many times do you log on to Facebook on a typical day?

10. How much time do you spend on Facebook on a typical day? (___hours; ____minutes)

<u>Negative:</u>

You seemed somewhat uncomfortable and nervous while delivering your speech. I understood your arguments, but I thought that they could have been stronger. Compared to others, I thought that you are using quite a few disfluencies ("ums" and "ahs") and you seem to have some doubts about your social competence. Overall, I'd say that you need some work to improve your public speaking skills.

<u>Neutral:</u>

I appreciated the time and effort you put into this speech. Compared to your peers, you seemed relatively comfortable and confident while delivering your speech. Your arguments were moderately persuasive, and they were organized fairly clearly. You appeared to be fluent (you used some disfluencies, such as such as "ums" and "ahs," but only occasionally) and you seemed reasonably competent. Your gestures and eye contact were okay. Overall, I'd say that your public speaking skills are adequate.

Dependent Measure (Study 2)

<u>Instructions:</u>

Thank you for participating in the Distance Education Study. We now ask for your participation in ONE other short study.

There are currently 5 studies going on in the Computer-Mediated Communication Lab. Each of them only takes 5 minutes and they are equal in their difficulty level. Please RANK these studies in the order of your preference (1 – you would MOST prefer to participate in this study; 5 – you would LEAST prefer to participate in this study). We will try to accommodate your preference as much as possible. Thank you!

Here is a brief description of the studies:

FACEBOOK STUDY: You will be asked to examine your own Facebook profile information. Then you will answer a brief questionnaire about your profile.

ONLINE NEWS STUDY: You will be asked to read the headlines on several popular news websites. Then you will answer a brief questionnaire about the news websites.

VIDEOGAME STUDY: You will be asked to play a videogame developed by a group of undergraduate students. Then you will answer a brief questionnaire about the videogame.

YOUTUBE STUDY: You will be asked to watch the most popular YouTube videos of last week. Then you will answer a brief questionnaire about YouTube.

ONLINE MUSIC STUDY: You will be asked to visit a popular music website where you will listen to several songs you haven't heard before. Then you will answer a brief questionnaire about the music website.

Manipulation Check (Study 2)

Think of the feedback you received on your speech. How positive did you think the feedback was? (1 – not at all positive; 7 – very positive)

Website Ratings (Study 2)

1. Think of the studies you had to choose from in the previous step. How much effort do you think each study would require from you? Use a scale from 1 (no effort at all) to 7 (a lot of effort).

        a. Read online news

        b. Watch videos on YouTube

        c. Play videogames

        d. Listen to music

        e. Check your Facebook profile

2. In a typical week, how much time do you spend on the following activities? Use a scale from 1 (not at all) to 9 (a lot of time).

        a. Read online news

        b. Watch videos on YouTube

        c. Play videogames

        d. Listen to music players

        e. Check/update Facebook

3. How engaging/interesting do you find the following activities? Use a scale from 1 (not at all) to 7 (extremely).

        a. Read online news

        b. Watch videos on YouTube

        c. Play videogames

        d. Listen to music players

        e. Check/update Facebook

4. How positive do you find the following activities? Use a scale from 1 (not at all) to 7 (extremely).

     a. Read online news

     b. Watch videos on YouTube

     c. Play videogames

     d. Listen to music players

     e. Check/update Facebook

Measures of Facebook Use (Studies 2 & 3)

1. Please use a scale from 1 (not at all) to 7 (very) to answer the following questions:

      a. How satisfied are you with your self-presentation in your Facebook profile?

      b. To what extent does your Facebook profile present you in a positive way?

      c. How accurate is your Facebook profile?

      d. How comprehensive is your Facebook profile?

2. How many times do you log on to Facebook on a typical day?

3. How many Facebook friends do you have?

4. Approximately how many photographs of yourself are tagged on your Facebook profile?

Social Connectedness Scale (Study 3)

Rate how much the following statements are true of how you are feeling *right now*.
Use a scale from 1 (not at all) to 7 (extremely).

1. I have a sense that I am a part of a larger community.

2. I don't feel that others are concerned about me as a person.

3. I know that other people care about what happens to me.

4. I don't feel like I could share my problems with anyone.

5. I feel connected to people.

6. Right now, it is likely that someone is thinking about me.

7. I don't feel that I really belong with other people.

8. I have no sense of togetherness with my peers.

Task Difficulty (Study 3)

1. How well do you expect to do on the upcoming task? (1 – not at all well; 7 – very

well)

2. How threatening do you expect the upcoming task to be? (1 – not at all threatening;

7 – very threatening)

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