Updated Statuses: Understanding Facebook Use through Explicit and Implicit Measures of Attitudes and Motivations

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Abstract:

The overall purpose of these studies was to explore whether underlying motivations could predict frequency of Facebook use, use of social connection features and use of self-expression features. We sought to explain both general and specific uses of Facebook by accounting for the influences of motivations, attitudes and motivation activation systems. In addition to established scales on attitude and motivation, we employed the Mini-MAM scale which is a new tool intended to index two separate motivational systems that exist in each human. In brief, those who have higher appetitive scores are more likely to seek novel stimuli while those who have higher in defensive scores tend to avoid novel stimuli. Study one showed that our adopted measure of attitudes only predicted Facebook use in general while motivations only predicted specific uses of Facebook. In contrast, we found that the MiniMAM-scale predicted most of our dependent variables, pointing out surprising and interesting relationships. Study two was run in an effort to add support and validation to study one.

Keywords: Social media, implicit measures, explicit measures, attitude, motivation, Mini-MAM

Introduction

There is a large body of work attempting to explain the motivations people have for using media. The idea behind this quest is to understand what drives people to choose one type of media over another and be able to tailor media products to these drives. Researchers in the uses and gratifications tradition have developed a nearly exhaustive list of gratifications that are purported to satisfy media users and drive their choices.

The uses and gratifications paradigm assumes an active audience that makes conscious decisions about what media to use based on the gratifications the media provides (Katz, 1974). The uses and gratifications paradigm has also been extended in an attempt to understand the motivations involved with using emerging technologies such as social networking websites (eg. Bonds-Raacke && Raacke, 2010; Chen, 2011; Park, Kee, & Valenzuela, 2009). However, despite this renowned body of work, there are few definitive answers as to why people use the media they do. It seems, then, that a new method may be appropriate for exploring motivations for media use with the hope to glean better understanding of underlying motives.

The nascent research in a new motivation-activation measurement scale (MAM scale) has shown promising results with a few studies,classifying people as those who score higher in approach system activation (ASA) or those who score higher in defensive system activation (DSA) and linking their scores to specific media choices (Bolls, Shoenberger, Schillenger, Almond, & Williams, 2011; Potter, Lee, & Rubenking, 2011).It is believed that these scores are representative of the two underlying motivational systems that are distinct and that vary by individual. For example, those with high appetitive scores and low aversive scores preferred hard rock music.Hard rock is associated with a sensation seeking type of personality and consistent with the underlying idea of biologically based approach-related behavior (Potter et al., 2011). Research using the MAM scale has also found that sensation-seeking and risk-taking behaviors were positively correlated with ASA scores and negatively with DSA scores. It is thought that the motivational activation score an individual gets may correlate with the, and even predict the type of, media an individual will use (Bolls et al., 2011; Lang, Kurita, Rubenking, & Potter, 2011). The present studies were designed to build on this growing body ofresearch and explores the relationships between biologically based motivational drives and self-reported responses for social media use, particularly Facebook.

Literature Review

Involvement with social media is now ubiquitous. According to research put out by the Pew Internet and American Life Project, 72% of American young adults between the ages of 18-29 maintain a profile on a social networking site (Lenhart, Purcell, Smith, & Zichuhr, 2010). In 2010 alone, the most popular social networking site, Facebook, attracted 250 million new users, bringing the total number of Facebook usersto 600 million. It does not come as a surprise, therefore, that social scientists have spent time and resources understanding why people are drawn to social media.

Motivations

Studies have enumerated the different reasons for social media use. For instance, social media facilitate communication and resource sharing (Thelwall, 2008). The most common uses of Facebook include sending messages to friends, viewing photos, keeping in touch with old friends, making plans and checking out people (Stern & Taylor, 2007). College students use Facebook and Myspace for efficient and convenient communication, to satisfy curiosity about others, to be popular, and to form and reinforce relationships (Raacke & Bonds-Raacke, 2008). Social media also satisfy multiple needs by offering "entertainment, information exchange, surveillance, diversion and social utility functions simultaneously" (Ray, 2007). The use of social media for self-disclosure and self-presentation have also received substantial attention in the literature (Ellison, Steinfield, & Lampe, 2007; Gibbs, Ellison, & Heino, 2006; Hogan, 2010; Ledbetter et al., 2011; Peluchette & Karl, 2010; Zhao, Grasmuck, & Martin, 2008). These motivations are assumed to increase social media use. For instance, a study of 77 undergraduates found that gratifications obtained such as pastime and social information positively predicted frequency of Facebook use (Quan-Haase & Young, 2010).

Attitudes

But motivations and gratifications sought are not the only predictors of social media use. Ledbetter and colleagues (2009; 2011) have come up with attitudes, conceptualized as relatively enduring beliefs, toward online uses. They referred to attitudes toward online self-disclosure (OSD) and online social connection (OSC) and looked at how they affected online and offline media use, guided by the scales adopted from Scott and Timmerman (2005). In brief, higher OSD referred to a favorable attitude about sharing information online while

higher OSC referredtouse of social media to further connect to preexisting social ties(Ledbetter, 2009; Ledbetter et al., 2011). Those who use social media for online self-disclosure may suffer social anxiety and as a result, use it to avoid face-to-face communication and exert more control over their self-presentation. However, those who use social media for online social connection may be better communicators offline as well and are simply using the social networking site to further strengthen existing ties(Ledbetter et al., 2011). A survey of 325 undergraduates found that OSC increased the frequency of Facebook communication while OSD had a negative relationship with Facebook communication frequency, a surprising finding which requires confirmation(Ledbetter et al., 2011). In the following studies, we test their original hypothesis on the effects of OSD.

MAM Scale

The studies we have so far reviewed have been mostly guided by the uses and gratifications approach that dates back to more than three decades ago (Blumler & Katz, 1974). It asserts that individuals use the media to fulfill certain needs, satisfying a drive for a gratifying experience (Blumler & Katz, 1974). The assumptions of the theory remain relevant even with the rise of the online media. For instance, Debatin (2009) found three dimensions of needs satisfied by social networking sites (SNS): the need for diversion and entertainment; the need for (para-social) relationships; and the need for identity construction. But these uses and gratifications were uncovered mostly from self-reported measures, or of what users perceive about themselves.

The uses and gratifications approach has four basic categories of motivations or gratifications elicited from media use: diversion, having to do with a drive to escape the doldrums of daily life; personal relationships, a drive to use media to forge companionship; personal identity, a drive to use media in a way to understand and express oneself; and surveillance, a drive to use media pursue information about the environment (Katz, Blumler&Gurevitch, 1974). These four categories are related to recent work by social psychologists indicating that human beings have two motivational systems that operate independently of one another and are the result of selection processes geared toward a species' survival (Cacioppo, Gardner, & Berntson, 1999). These motivational systems still assume individual differences in the selection of media which is consistent with the uses and gratifications tradition. But the differences are thought to be biologically based and dependent on far fewer "gratifications."

The human appetitive system underlies approach behavior and is most evident under neutral or non-threatening environmental conditions(Potter et al., 2011). This is necessary for survival so that the person will seize upon opportunities to gather food and procreate. The aversive system, or fight or flight response, is usually activated when the environment becomes threatening and motivates the person to survey her environment (Potter et al., 2011). The systems operate independent of one another and according to previous research they have different patterns in graphical representations of their activation (Lang, Shin, & Lee, 2005).While they are separate systems, it is theorized that given a neutral environment, people are biased toward approach activation which is called positivity offset (Potter et al., 2011). For example, when there appears to be no danger in the environment, a person will be likely to leave his shelter for food. However, when a stimulus presents itself that is perceived as dangerous, negativity bias or the aversive system rapidly increases its activation which allows the person to quickly respond to threats (Potter et al., 2011).

Based on the theoretical framework of the dual-motivational systems and dimensional emotions, Lang and colleagues (2005) developed the MAM scale as a way to index positivity offset and negativity bias. In the original MAM, participants saw 90 pictures selected from the International Affective Picture System (IAPS) which they had to rate based on how aroused, how positive and how negative each photo made them feel (Lang et. al, 2011). In an effort to streamline the collection of MAM scores, Lang and colleagues (2011) created the MiniMAM scale that used only 41 of the original 90 pictures. In an experiment, they found that the shorter version was reliable and a "suitable substitute when time matters" (Lang et. al, 2011, p. 146). For this study, we adopt this shorter version of the MAM scale.

Individual differences in MAM scores drive people to choose stimuli that are motivationally relevant to them. In general, people with higher ASA scores will be more likely to approach new and intriguing stimuli in contrast with those who score lower in ASA. Those with higher DSA scores are more likely to avoid such stimuli (Potter et al., 2011). That said, the theory assumes that those with high ASA scores will be more approach-oriented while people with high DSA scores are conceptualized as those who feel the need to frequently survey their environment for threats (Lang, 2006; Potter et al., 2011). Previous work has found that those higher in ASA have higher appetitive activation and report a higher positive emotional experience while using media and are also less aroused by media use(Lang, Bradley, Sparks,

& Lee, 2007; Lang et al., 2011). Those higher in DSA have been found to be more aroused by and report higher negative emotions while using media. They are less likely to attend to negative media and have higher aversive activation while using media (Lang et al., 2007; Lang et al., 2011). Additionally, DSA has been found to be a significant negative predictor of using social media for excitement while ASA has been found to positively predict using social media as a method of escaping the routine of daily life(Bolls et al., 2011).

In study one, we measured the ASA and DSA scores of college students, for whom the social media terrain is no longer novel,supported by the fact that it is utilized by 72% of college aged people (Lenhart et al., 2010). Because Facebook is made up of a user's friends, it is a friendly platform akin, in some ways, to a visit to a friend's house. Students signing into Facebook can be confident that the experience will be a rather consistent one, with friends posting pictures of their families and friends and updating about their lives. While there is some negative emotional content, the platform has remained an overall positive emotional experience and pervades a huge percentage of their lives. In addition, we measured attitudes toward online self-disclosure (OSD) and online social connection (OSC)as well as motivations for Facebook use.Thus, we test the following hypotheses and pose a research question:

Study One

H1a: ASA will positively predict frequency of logging on Facebook.

H1b: DSA will positively predict frequency of logging on Facebook.

H1c: OSD will positively predict frequency of logging on Facebook.

H1d: OSC will positively predict frequency of logging on Facebook.

RQ1. Which motivations of Facebook use increase the frequency of logging on Facebook?

However, we realize that while many college students log on to Facebook, what they do while on Facebook could be quite different. Approach-oriented people may post photos of risky behaviors or update their status more often than risk-averse people. In contrast, risk-averse people, scoring high on DSA, are likely to sign on to survey the landscape of friends' and acquaintances' posts while less frequently, if ever, venturing to post their own pictures or updates.Higher OSD scores are also assumed to be among those people who have social

anxiety and thus desirous of a way to communicate without the risk of face-to-face communication while higher OSC scores are linked to using social media to further strengthen connections. Thus, we also propose the following hypotheses and research question:

H2a. ASA will positively predict use of Facebook's self-expression features.

H2b. DSA will negatively predict use of Facebook's self-expression features.

H2c. OSD will positively predict use of Facebook's self-expression features.

H2d. OSC will positively predict use of Facebook's self-expression features.

RQ2. Which motivations of Facebook use increase the frequency of using self-expression features of Facebook?

Facebook also offers features for social connection. Through wall posts and comments on others' walls, users can interact with their friends online. People can also send friend requests and interact with people they do not know. Those high in ASA have been found to be more likely to seek ways to optimize their arousal by engaging in activities that offer stimulation and excitement (Lang et al., 2011). Interaction with others, mainly those you don't know in an online public forum can be conceptualized as a form of risk-taking or exciting. Thus, those high in ASA may seek new connections through social connection features. Those high in DSA may be more apt to use social connection features less frequently and are more likely to use social media to interact with known friends and acquaintances, not seeking excitement. In addition, despite the difference in underlying motivation for those with high OSD and high OSC scores, they are both likely to use social connection features. Thus:

H3a. ASA will positively predict use of Facebook's social connection features.

H3b. DSA will negatively predict use of Facebook's social connection features.

H3c. OSD will positively predict use of Facebook's social connection features.

H3d. OSC will positively predict use of Facebook's social connection features.

RQ3. Which motivations of Facebook use increase the frequency of using social connection features of Facebook?

Methodology

Whenever measures of motivational activation are used, theoretical considerations have to be made for the population involved. Here, the population consisted of college students between 17 and 22 years old. This age group is likely to have higher ASA scores and lower DSA

scores than older and younger populations simply because college students are in a stage of their lives when they deal with newfound independence and novel experiences.

The online experiment had 150 participants recruited from a large Midwestern university but 27 responses were discarded for being incomplete. The respondents completed the online questionnaire in exchange of course credit. The online survey,usingQualtrics' software, took between 30 minutes and an hour to finish. The respondents first completed the scales measuring perceived attitudes toward online social connection and online self-disclosure, rated their motivations in using social media and then completed the MAM scale. The items on each scale were randomized for each participant.

Dependent Variables

Frequency of Facebook use: This was measured by a single item that asked participants to rate in a 5-point Likert scale, with 5 being very frequent, how often they logged on Facebook.

Self-expression use: This was an additive index with three items that participants had to rate in a 5-point Likert scale, with 5 being very frequent. The items asked the participants how often they uploaded pictures, updated their profile status and expressed themselves on Facebook. The scale was reliable, Cronbach's alpha = .80.

Social connection use: This was an additive index with two items. The participants rated in a 5-point Likert scale how frequently they wrote comments and viewed someone else's profile on Facebook. The scale was reliable, Cronbach's alpha = .84 (after one item was excluded).

Predictors

Motivation for Facebook use: We combined the scales used in previous studies (J. Kim & Haridakis, 2009; Quan-Haase & Young, 2010) and included three new items to come up with 29 items that measure different motivations. The participants rated each item in a 5-point Likert scale with 5 as strongly agree. Factor analyses yielded eight factors and four items had to be dropped for loading in multiple factors (see Table 1). The factors we found are affection, bandwagon, self-expression, entertainment, escape, companionship, excitement, and sociability.

Table 1: Factor Analysis of Motivations

Affection *Eigenvalue 13.057* *Variance explained 26%*	To let others know I care about them To show others encouragement To belong to a group with the same interests To show others that I am concerned about them
Bandwagon *Eigenvalue 4.153* *Variance explained 14.83%*	To not look old-fashioned To look stylish To be "in"
Self-Expression *Eigenvalue* 3.130*;* *Variance explained 11.178%*	To express what I feel To share what I think To let others know things about myself To get a response from others
Entertainment *Eigenvalue* 1.985; *Variance explained 7.089%*	Because it is entertaining Because I enjoy it Because it is fun Because it is entertaining
Escape *Eigenvalue* 1.695; *Variance explained* 6.053*%*	To get away from pressures and responsibilities To get away from what I am doing To put off something I should be doing
Companionship *Eigenvalue* 1.411; *Variance explained 5.040%*	Because I need someone to talk to or be with Because I just need to talk about my problems sometimes To forget about my problems Because I need someone to talk to or be with

Excitement *Eigenvalue* 1.242; *Variance explained* 4.436%	Because it is exciting Because it is thrilling
Sociability *Eigenvalue* 1.066; *Variance explained* 3.4%	To make friends of the opposite sex To meet people (new acquaintances)

Note. Some of these statements were adopted from scales used in previous studies (J. Kim & Haridakis, 2009; Quan-Haase & Young, 2010) and combined with new statements.

Online self-disclosure: We adopted Ledbetter and colleagues' (2011) scale. Seven items were rated in a 5-point Likert scale: I feel less nervous when sharing personal information online; I feel like I can be more open when I am communicating online; I feel like I can sometimes be more personal during Internet conversations; When online, I feel more comfortable disclosing personal information to a member of the opposite sex; I feel less shy when I am communicating online; I feel less embarrassed sharing personal information with another person online (reversed); It is easier to disclose personal information online. The scale is reliable, Cronbach's alpha = .86.

Online social connection: We also used Ledbetter and colleagues' (2011) scale and found that it was reliable, Cronbach 's alpha = .80. The following statements were rated in a similar 5-point Likert scale: If I couldn't communicate online, I would feel 'out of the loop' with my friends; If I lost Internet access, I think I would probably lose contact with many of my friends; Without the Internet, my social life would be drastically different; I would communicate less with my friends if I couldn't talk with them online; Losing Internet access would not change my social life at all (reversed); Online communication is not an important part of my social life (reversed).

Mini-MAM. We used a tested but shorter version of the MAM scale recently validated as a reliable index of variation in ASA and DSA (Lang et al., 2011). The scale consists of 41 images selected from the International Affective Picture System which is a compilation of pictures that have been coded for motivational arousal and valence in a systematic fashion

across thousands of participants and many (Bradley & Lang, 2007). Images representing certain levels of arousal and valence have been purposely chosen for the miniMAM. Two pictures had to be dropped because of a technical glitch that could bias the data. The calculations for ASA and DSA scores were adjusted accordingly based on the formula provided by Lang and colleagues (2011). The participants were allowed to look at each picture for as long as they want and then are asked to rate how aroused and separately how pleasant and unpleasant they felt for each image.

Participants

The average participant was 18.6 years old and a heavy Facebook user (scoring 4.61 out of 5) having some 722 friends on Facebook. Of the 123 participants, close to 62% were females. Our MAM scores were lower than what Lang et. al (2011) found: the average ASA score was 1.64 (*SD = 1.42*) while the average DSA score was 3.48 (*SD = 3.48*).

Results

In this research we sought to explain frequency of Facebook use by looking at the effects both explicit and implicit measures of personality and attitudes. We explored attitudes toward social media by using the scales on attitudes toward online self-disclosure (OSD) and online social connection (OSC). We also tapped into perceived motivations in using Facebook by combining two earlier used scales and uncovering eight factors. Finally, we tapped into individual differences by using a new implicit measure, the motivation activation measure (MAM) scale.

Logging onto Facebook

Having checked that our data meets the assumptions of multiple regression analysis (e.g. normality of residuals), we proceeded to conduct the test. We found when we ran diagnostics that a case had a standardized residual greater than 3, indicating it was a possible outlier. But checking Cook's distance revealed it does not influence the model (see Field, 2009, p. 241). Thus, we decided to keep the case.

We used hierarchical regression to enter our variables in blocks based on the literature. But since the final block, where we added the motivations for Facebook use, does not significantly increase the variance explained, we decided to use the fourth block, *F (12, 99) =*

9.80, α< .01; *adjusted* R^2= 32%. We found that, consistent with the literature, age negatively predicted frequency of use, *β = -.355, t = -4.164, α*< .01.

After controlling for the effects of age and gender, we found that H1ais not supported. ASA does not predict frequency of logging on Facebook. However, H1b is supported; DSA positively predicts frequency of logging on Facebook, in line with our expectations, *β =.202, t = 2.271, α*< .05. H1c is also rejected as OSD negatively predicts frequency of logging on Facebook *β = -.178, t = -2.029, α*< .05. H1d is supported as OSC is a significant and positive predictor, *β =.242, t = 2.570, α*< .01 (see Table 2).To answer RQ1, we found that none of the motivations predicted frequency of logging on Facebook.

Table 2: Factor Analysis of Motivations: Study Two

Affection(QuanHasse, 2010) *Eigenvalue 1.276* *Variance explained 3.5%*	To let others know I care about them To show others encouragement To belong to a group with the same interests To show others that I am concerned about them
Bandwagon (QuanHaase, 2010) *Eigenvalue 1.756* *Variance explained 5.1%*	To not look old-fashioned To look stylish To be "in"
Self-Expression *Eigenvalue* 4.150*;* *Variance explained 13.9%*	To express what I feel To share what I think To let others know things about myself To get a response from others To influence how others feel
Entertainment *Eigenvalue* 1.437;	Because it's exciting Because I enjoy it

Variance explained 4.097%	Because it is fun
	Because it is thrilling
Escape (separated from QuanHaase's Pastime or our Entertainment)	To get away from pressures and responsibilities
Eigenvalue 10.235;	To get away from what I am doing
Variance explained 35.4%	To put off something I should be doing
	To kill time
	Allows me to unwind
Companionship (QuanHaase, 2010)	Because I just need to talk about my problems
Eigenvalue 1.888;	sometimes
Variance explained 5.581%	To forget about my problems
	Because I need someone to talk to or be with
	To meet new people
	To meet people of the opposite sex

Note. Some of these statements were adopted from scales used in previous studies (J. Kim & Haridakis, 2009; Quan-Haase & Young, 2010) and combined with new statements.

Self-Expression Uses

The data again met the assumptions of regression. The final block is used, accounting for more than 40% of the variance in the frequency of using self-expression functions. The model is significant, $F\ (12, 99) = 7.216$, $\alpha < .01$. Its residuals are normally distributed and no outliers were detected. Age is again a negative predictor, $\beta = -.226$, $t = -2.788$, $\alpha < .01$. Gender is also a significant predictor, with females more likely to use self-expression functions than males, $\beta = .217$, $t = 2.417$, $\alpha < .05$.

H2a is supported as ASA positively predicts self-expression use, $\beta = .183$, $t = 2.197$, $\alpha < .05$. H2b is not supported, however. DSA is not a significant predictor. Neither are OSD and OSC, so H2c and H2d are not supported.RQ2 asked which motivations increased frequency for using self-expression functions on Facebook. We found that using Facebook for escape ($\beta = .172$ $t = 2.085$, $\alpha < .05$), sociability ($\beta = .210$ $t = 2.233$, $\alpha < .05$) and self-expression ($\beta = .313$ $t = 3.275$, $\alpha < .01$) predicted the use of the self-expression functions on Facebook. Not surprisingly, the motivation of self-expression is also the strongest predictor of using the self-expression functions of Facebook (see Table 3).

Table 3: Predicting Facebook Use

	β	t
Age	-.355*	-4.164
Gender	-.097	-1.066
ASA	.151	1.793
DSA	.202**	2.271
OSD	-.178**	-2.029
OSC	.242**	2.570

Note. *α < .001; **α < .05; *The model is significant, F (12, 99) = 9.80*, explaining about 32% of the variance.*

Social Connection Uses

Finding that our data meet the assumptions of regression, that our model's residuals are normally distributed, and that no outlier significantly influenced our model, we ran our analysis to account for frequency of using Facebook's social connection functions. The final block is used and it explains more than 47% of the variance, $F (12, 99) = 9.425$, $\alpha < .01$. Age is again a significant negative predictor, $\beta = -.415$, $t = -5.470$, $\alpha < .01$.

Having controlled for age and gender, we found that H3a is supported. ASA positively predicts frequency of using the social connection functions of Facebook, $\beta = .275$, $t = 3.526$, $\alpha < .01$. However, H3b is rejected, as DSA is also a positive, although slightly weaker, predictor of using social connection functions, $\beta = .213$, $t = 2.582$, $\alpha < .05$. H3c and H3d are not supported.

RQ3 asked about the effects of Facebook use motivations on using social connection functions. We found that using Facebook for entertainment ($\beta = .179$ $t = 2.087$, $\alpha < .05$) and for escape ($\beta = .202$ $t = 2.609$, $\alpha < .05$) positively predicted using the social connection functions of Facebook (see Table 4).

Table 4 Predicting use of Facebook Self-Expression Uses

	B	t
Age	-.226*	-2.788
Gender	.217**	2.417
ASA	.183**	2.197
DSA	.173	1.964
OSD	.107	1149
OSC	.053	0.554
Self-Expression	.313*	3.275
Entertainment	.157	1.710
Companionship	-.086	-.901
Excitement	-.082	-.873
Sociability	.210**	2.233
Escape	.172**	2.085

Note. *$\alpha < .001$; **$\alpha < .05$; *The model is significant, F (12, 99) = 7.216*, explaining about40.2% of the variance in social expression use.*

Discussion

The overall purpose of this study was to explore whether underlying motivations could predict frequency of Facebook use, use of social connection features and use of self-expression features.

The Influence of Motivations

None of the eight motivations we uncovered through our factor analysis predicted frequency of Facebook use in general. A few of them, however, predicted self-expressionuses and social connection uses of Facebook. This is not surprising, considering that Facebook is used in several ways and these uses often occur almost simultaneously for some or independently for others. Thus, if we examine specific uses, we should also be able to examine the influence of specific motivations. This is what we found in this study—motivations are geared toward specific uses of Facebook.

Self-expression features are used by people who scored high in self-expression, sociability and escape motivations. Social connection features are used by people scoring high in entertainment and escape motivations. That use of self-expression features is predicted by self-expression motivation can be argued as tautological and therefore devoid of explanatory value. This is a major criticism of uses and gratifications research. If one is motivated to use Facebook for self-expression, it does follow that he or she will use the features that allow self-expression. That is a valid argument. However, some of the specific uses were not predicted by the corresponding motivation. For instance, the use of self-connection features is not predicted by either sociability or companionship motivations, or at least in our data. Instead, social connection features are used by people high in entertainment and escape motivations. These allow us to understand social connection features on Facebook in a different light. A plausible interpretation of what we found is that reaching out to people online through different features on Facebook is seen primarily not as a way to strengthen or build relationships but rather as a form of entertainment and even escape. This might superficially devalue social connections online, but it is plausible that other Facebook features, or other activities, better fulfill sociability and companionship motivations. A possible extension of this argument is that Facebook does not quite replace offline connections in fulfilling the basic need to socialize, contrary to fears of a diminishing social

capital, although this is an interesting empirical question that current studies are exploring (for more discussion, see S. Kim, 2007; Putnam, 1995, 2000).

The Influence of Attitudes

A positive attitude toward online social connection (OSC) predicted frequency of use as expected. This is consistent with what Ledbetter et al (2011) found. In contrast, the attitude toward online social disclosure (OSD)was a negative predictor of frequency of use. This negative relationship had baffled Ledbetter and colleagues (2011). Like them, we had expected that high OSD would predict frequency of Facebook use.

It is supposed to be almost tautological that a positive attitude toward self-disclosure online would predict actual use of Facebook, especially if Facebook is to be understood as a social media platform known for its features for self-presentation and identity construction—unless it is used not so much for self-presentation as for mere entertainment. Ledbetter and colleagues (2011) argued that social anxiety was a driving force for online communication. However, that might not really describe the kind of communication that actually happens on Facebook. It may be that social anxiety applies to both Facebook and face-to-face communication. It is also possible that those that who score high for attitude toward online self-disclosure finds other newer and better platforms than Facebook at least for our respondents. What we want to argue, however, is how OSD is conceptualized. A high OSD score is linked to a person using online self-disclosure as a way to avoid social anxiety and build a presentation of the self through the less intimidating online environment. However, it may be that those who score high in OSD use self-disclosure not as a way to avoid the stress of real relationships but to entertain themselves or escape their daily lives. Is self-disclosure an ongoing horizontal process or activity? Or does it progress until it reaches a peak or a level of saturation and hence attain completion? A plausible explanation, we argue, is that for users who have grown accustomed to Facebook and no longer treat it as new, self-disclosure is a completed activity. The profiles they have represent a constructed identity and new pictures or status updates seek to reinforce, no longer to build, that identity. There remains no strong incentive to keep building something already built, something already out there in the online world, and hence a possible slowing down in the use of Facebook for self-disclosure, even if the positive attitude remains.

The problem with attitudes captured by scales like what we adopted is that they rely on self-perceptions, of making people think about what they think they are thinking. Though this is a valid criticism, it does not render useless scales that have been validly constructed, repeatedly tested and found reliable in capturing attitudes. An example of which is how our data ran against a logical expectation that higher OSD predicts higher frequency of Facebook use. Our finding leads us to think about online self-disclosure in a somehow different light. Still, a way to confirm if we are indeed capturing people's characteristics is to compare relationships we have covered in the past by relying on what people think they think to implicit measures that tap on motivational systems.

Appetitive or Aversive?

In this study we also used a newly developed scale which indexes individual differences in the baseline activation functions of the appetitive and aversive motivational systems. As expected, DSA predicted frequency of Facebook use. This makes sense as we expect those high in DSA to log on to Facebook frequently as a way to survey the landscape of friends. It also provides justification for our conceptualization of Facebook as a medium that is relatively consistent and safe, free from large doses of negative emotional elements, and no longer novel. In contrast, ASA did not predict Facebook use frequency.A plausible explanation is that those looking for a more thrilling experience or an escape fromtheir boring daily lives—characteristic of high ASA people—will not log on to Facebook as often for the same reason someone high in DSA would.For people high in ASA, Facebook has resembled an offline community no longer novel and after a certain amount of log-ins could become relatively boring.

DSA wasalso positively linked to using the social connection features of Facebook, contrary to what we expected. We predicted that those with higher DSA scoreswould shun connecting with others online. A possible explanation, however, is that the risk involved with connecting online is far diminished when the platform is no longer novel and the people a user is connectingwith are usually friends and family or at the very least, acquaintances that have been met offline(Ellison et al., 2007). The uncertainty of the social media landscape is far diminished compared with that of face-to- face communication. An interesting future study is to look at the relationship between DSA and ASA on one hand, and offline social interactions on the other.

ASA was a positive predictor of both frequency of use of social connection and self-expression features on Facebook. These findings were consistent with those by Bolls and colleagues (2011) that found those higher in ASA used social media for excitement and to escape reality.We would expect those high in ASA would utilize self-expression features as a variation of approach and a way to seek excitement. A new post by a friend, a new comment, or feedback from a new status update could be providing new adventure. Thus, we see that DSA does not predict self-expression uses, a possible manifestation of risk-averse people being more cautious about what they disclose about themselves.

Study Two

In an effort to validate the results from study one, we conducted the same analysis on a second group of data collected after study one was complete. Because our goal was to compare our results between studies, the hypotheses and research questions remained the same.

Methodology

The online experiment had 149 participants recruited from a large Midwestern university but 6 responses were discarded for being incomplete. The respondents completed the online questionnaire in exchange of course credit. The online survey, using Qualtrics' software, took between 30 minutes and an hour to finish. The respondents first completed the scales measuring perceived attitudes toward online social connection and online self-disclosure, rated their motivations in using social media and then completed the MAM scale. The items on each scale were randomized for each participant.

Dependent Variables

Frequency of Facebook use. This was measured by a single item that asked participants to rate in a 5-point Likert scale, with 5 being very frequent, how often they logged on Facebook.

Self-expression use: This was an additive index with three items that participants had to rate in a 5-point Likert scale, with 5 being very frequent. The items asked the participants how often they uploaded pictures, updated their profile status and expressed themselves on Facebook. The scale was reliable, Cronbach's alpha = .80.

Social connection use: This was an additive index with two items. The participants rated in a 5-point Likert scale how frequently they wrote comments and viewed someone else's profile on Facebook. The scale was reliable, Cronbach's alpha = .84 (after one item was excluded).

Predictors

Motivation for Facebook use: We again combined scales used in previous studies (J. Kim & Haridakis, 2009; Quan-Haase & Young, 2010) and included three new items to come up with 29 items that measure different motivations. The participants rated each item in a 5-point Likert scale with 5 as strongly agree. Factor analyses yielded six factors.(see Table 6). The factors we found are affection, bandwagon, self-expression, entertainment, escape, companionship.

Table 6: Predicting Social Connection Use

	B	t
Age	-.415*	-5.470
Gender	.079	0.946
ASA	.275*	3.526
DSA	.213**	2.582
OSD	-.095	-1.097
OSC	.019	0.216
Self-Expression	.125	1.398
Entertainment	.179**	2.087
Companionship	-.044	-.491
Excitement	.072	.820
Sociability	.099	1.129
Escape	.202**	2.609

Note. *$\alpha < .001$; **$\alpha < .05$; *The model is significant, F (12, 99) = 9.425*, explaining about 47.7% of the variance in social connection use.*

Online self-disclosure: Using Ledbetter and colleagues' (2011) scale, items were rated in a 5-point Likert scale. The scale is reliable, Cronbach's alpha = .86.

Online social connection: Again, we used Ledbetter and colleagues' (2011) scale and found that it was reliable, Cronbach 's alpha = .80.

Mini-MAM. We again used a tested but shorter version of the MAM scale recently validated as a reliable index of variation in ASA and DSA (Lang et al., 2011). The participants were allowed to look at each picture for as long as they want and then are asked to rate how aroused and separately how pleasant and unpleasant they felt for each image.

Participants

The average participant was 20 years old and a heavy Facebook user (scoring 4.61 out of 5) with 60 percent of participants indicating that they had over 500 friends on Facebook. Of the 141 participants, 70% were females. Again, our MAM scores were lower than what Lang et. al (2011) found: the average ASA score was 1.5710(*SD = 1.51*) while the average DSA score was 2.42 (*SD = 1.17*).

Results

Like study one, we sought to explain frequency of Facebook use by looking at the effects both explicit and implicit measures of personality and attitudes.

Logging onto Facebook

We used hierarchical regression to enter our variables in blocks based on the literature. Again the block, where we added the motivations for Facebook use, does not significantly increase the variance explained thus we decided to use the fourth block, $F\ (6, 99) = 6.82,\ \alpha < .01$; *adjusted* $R^2 = 23\%$. We found that, consistent with the literature, age negatively predicted frequency of use, $\beta = -.138,\ t = -3.287,\ \alpha < .01$.

After controlling for the effects of age and gender, we found that H1a and H1b are not supported. ASA and DSA did not predict frequency of logging on Facebook. However, H1c is supported; OSD positively predicts frequency of logging on Facebook $\beta = .281,\ t = 3.601,$

α< .05. H1d is not supported. To answer RQ1, we found that none of the motivations predicted frequency of logging on Facebook.

Self-Expression Uses

The data again met the assumptions of regression. The final block is used, accounting for 41% of the variance in the frequency of using self-expression functions. The model is significant, *F (12, 99) = 9.237,* α< .01. Its residuals are normally distributed and no outliers were detected. Gender is a significant predictor, with females more likely to use self-expression functions than males, β =*-.589, t = -3.600,* α< .01.

H2a, H2b and H2c are not supported. However, OSD is a positive predictor (β=*.312, t=2.134,* α< .05).

RQ2 asked which motivations increased frequency for using self-expression functions on Facebook. We found that using Facebook for affection (β =*.190, t = 3.412,* α< .05), bandwagon (β =*-.172, t = -2.403,* α< .05), self-expression (β =*.336, t = 3.412,* α< .01) and entertainment (β =*.399, t = 3.887,* α< .01) predicted the use of the self-expression functions on Facebook.

Social Connection Uses

Finding that our data meet the assumptions of regression, that our model's residuals are normally distributed, and that no outlier significantly influenced our model, we ran our analysis to account for frequency of using Facebook's social connection functions. The final block is used and it explains more than 44% of the variance, *F (12, 99) = 8.633,* α< .01. Gender is again a significant predictor with women more likely to use social connection features than men, β = *-.486=, t = -3.260,* α< .01.

Having controlled for age and gender, we found that H3a is not supported. ASA negatively predicts frequency of using the social connection functions of Facebook, β =*-.097, t = -2.138,* α< .05. H3b, H3c and H3d are not supported.

RQ3 asked about the effects of Facebook use motivations on using social connection functions. We found that using Facebook for self expression (β =*.197 t = 2.201,* α< .05) and

for entertainment ($\beta = .319$ $t = 3.406$, $\alpha < .01$) positively predicted using the social connection functions of Facebook

Study Two Discussion

The overall purpose of this study was to validate the results from study one.

The Influence of Motivations

None of the six motivations we uncovered through our factor analysis predicted frequency of Facebook use in general. A few of them, however, predicted self-expression uses and social connection uses of Facebook.

Self-expression features are used by people who scored high in affection, bandwagon, self-expression and entertainment motivations. Social connection features are used by people scoring high in entertainment and self-expression motivations. The use of self-expression features by those who scored high in affection can be explained as a way for people to express this affection for friends and family who may be on the site. For those who scored high in entertainment motivations, expressing oneself on social media may be a source of fun and those scoring high on the bandwagon motivation are likely to use self-expression features on social media as a way to stay up to date with their social group. These results seem to point to the interpretation that people use self-expression features to show their concern for others and also to remain part of their social crowd or using such features because "everyone else is." Social connection features being used by those who scored high in both self-expression and entertainment motivations can also be explained in the light of using such features to fit into a group. Also, both functions are reported to be used as a form of entertainment.

The Influence of Attitudes

A positive attitude toward online social connection (OSC) predicted frequency of use as expected. This is consistent with what Ledbetter et al (2011) found. In contrast, the attitude toward online social disclosure (OSD) was a positive predictor of frequency of use. This finding was in complete contrast to both Ledbetter and studies one's findings. This puzzling result may be a reason not to include this measure in future studies.

However, OSD did positively predict use of self-expression features on Facebook. This is not a surprising finding because one would assume that if a person's attitude toward online self disclosure is positive that that person would also be likely to use features on that platform that would allow for self-disclosure.

Appetite and Aversive?

In this study, only ASA was predictive of use of social connection features on Facebook. The lack of predictability of DSA was not a surprise as we had seen in study one that this age range of participants have lower DSA scores and college students are less likely to find the social media context one which is highly exciting or dangerous. Again, these results provide justification for a re-conceptualization of Facebook as a consistent, safe medium devoid of extreme emotional responses.

Conclusion

In thesetwo studies, we sought to explain both general and specific uses of Facebook by accounting for the influences of motivations, attitudes and motivation activation systems and compare results from one study to another. Our adopted measure of attitudes only predicted Facebook use in general while motivations only predicted specific uses of Facebook. In contrast, we found that the Mini-MAM-scale predicted most of our dependent variables in study one while failing to predict in study two.

These findings, we hope, can contribute not only to how we understand social media but also how we understand the different ways we try to capture and measure personality variables which are at the heart of trying to understand human behavior in general. These different ways have their inherent strengths and weaknesses. But pulled together, they can provide a more complete picture of what we are trying to understand and beg for new and more accurate measures of concepts.

Facebook is not a new phenomenon and social media may have lost its glimmer as a "new" media. This argument does not make it less appealing in trying to understand people's behavior but calls for new ways to understand the relationships that we predict and find. We have reached a point where we have to assess how the relationships we have uncovered in the

past and those we are seeing now, both online and offline, inform and are connected to each other. This stream of research, we humbly argue, is ripe for a much-needed status update.

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