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Social Networking Websites, Personality Ratings, and the Organizational Context: More Than Meets the Eye?[1]

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We examined the psychometric properties of the Big Five personality traits assessed through social networking profiles in 2 studies consisting of 274 and 244 social networking website (SNW) users. First, SNW ratings demonstrated sufficient inter-rater reliability and internal consistency. Second, ratings via SNWs demonstrated convergent validity with self-ratings of the Big Five traits. Third, SNW ratings correlated with job performance, hirability, and academic performance criteria; and the magnitude of these correlations was generally larger than for self-ratings. Finally, SNW ratings accounted for significant variance in the criterion measures beyond self-ratings of personality and cognitive ability. We suggest that SNWs may provide useful information for potential use in organizational research and practice, taking into consideration various legal and ethical issues.

Recognizing the potential for process and outcome improvements, many organizations have begun to incorporate technological advances afforded by the World Wide Web into organizational practices (e.g., Llorens & Kellough, 2007; Maurer & Liu, 2007; Rothstein & Goffin, 2006). From the job seeker's perspective, the Web can be used to learn about specific position openings and broader information about the organization as a whole. Such information has been shown to influence applicants' perceptions of potential fit with the organization and their application intentions (Dineen, Ash, & Noe, 2002). From an organization's perspective, the Web can be used to improve

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efficiency, enable new assessment tools, increase applicant convenience, and promote a core image (Chapman & Webster, 2003).

As a medium by which salient, organizationally relevant information can be exchanged, the Web affords a level of interactivity not formerly possible. Because organizations are interested in attracting high-quality employees who fit within the culture of the organization, researchers have begun to investigate factors that affect website attractiveness and effectiveness (e.g., Dineen & Noe, 2009; Walker, Feild, Giles, Armenakis, & Bernerth, 2009). In addition to attracting better recruits, organizations are also interested in using the Web interface to better understand employees after they have been attracted.

Rather than simply harvesting information from online applications, organizations are exploring the Web as a means of gathering information about current and future employees. A prime example of this involves social networking websites (SNWs), which have recently gained attention as a potential source of job applicant information (Havenstein, 2008; Taylor, 2007). At the same time, organizational scholars have urged caution in using SNW-derived information (Davison et al., 2009; Schings, 2009) because its suitability in recruitment and selection processes has not been systematically scrutinized.

The need for research on SNWs is heightened by their rapidly increasing utilization. SNW use has quickly become the fourth most popular online activity, surpassing the use of e-mail (Nielsen.com, 2009). As SNW popularity has continued to increase, organizational representatives have increasingly used them to evaluate current and potential employees. Reason dictates that these representatives perceive the data available on SNWs as providing valuable, organizationally relevant information. Yet, unexplored is a theoretically grounded approach to the study of SNW information relevant to specific organizational practices, such as screening potential employees or understanding flows of human and social capital in the organization.

With the present study, we seek to begin systematically addressing issues pertaining to organizationally relevant information available from SNWs. Organizations routinely seek information from job applicants to begin making general determinations of their suitability and fit. Although such determinations are based on various person characteristics, applicant personality is one that garners particular interest. Personality traits can function as indicators of behavioral tendencies in organizational contexts (e.g., Goldberg, 1990; Ones, Dilchert, Viswesvaran, & Judge, 2007; Tupes & Christal, 1992).

Information pertaining to applicant personality may be collected formally or informally from different sources within and outside the organization. Of relevance for the present study, some researchers have examined whether

SNWs might be such a source, finding evidence that they manifest aspects of users' personalities (e.g., Marcus, Machilek, & Schütz, 2006). However, research is needed on measurement characteristics of SNW-based personality evaluations to determine their suitability in connection with processes such as recruitment and selection.

Investigations of SNW-based personality evaluations should employ (a) an agreed-upon personality structure; and (b) a reliable rating process. Studies pertinent to the personality structure line of discovery have successfully used the well established Big Five personality framework (Barrick & Mount, 1991; Hurtz & Donovan, 2000). In addition, assessing personality via SNWs requires that evaluators demonstrate the capacity to produce meaningful "other" ratings of personality. Although much is known about self-rated personality in the organizational context, other ratings of personality have been less scrutinized.

Ones et al. (2007) recently noted that other ratings exhibit criterion-related and incremental validity beyond self-reports, and called for research exploring other personality ratings in recruitment and selection. Thus, using other ratings to delve into SNWs as a viable source of personality information appears tenable. In two studies, we examine the psychometric qualities of other SNW-based ratings of Big Five traits, such as internal consistency, interrater agreement, and convergence with self-reported personality ratings. We also investigate the relations between SNW-based other ratings and outcomes of interest in organizational research: supervisor-rated job performance, hirability ratings, and academic success.

Social Networking Websites and Personality

The fundamental purpose of SNWs is to connect individual users with others. The linking mechanisms made available at these sites may differ, but most allow the posting of personal information, which reveals tastes in pictures, music, and videos; keeping blogs; and sharing links. Although SNWs vary in user demographics and may cater to niche markets, the most popular SNW is Facebook.

Facebook was developed in February 2004 for students at Harvard University; quickly expanded to other universities, high school students, and other organizations; and was eventually opened to any individual 13 years of age or older with a valid e-mail address in September 2006. Facebook became the largest SNW, overtaking MySpace, in April 2008 (Treadway & Smith, 2010) and boasts over 500 million active users as of July 2010. On college campuses in the United States, up to 90% of all students are registered on Facebook (Van Der Werf, 2006).

SNWs have become widely accepted (Nielsen.com, 2009). The volume of personal information shared on SNWs sites should continue to increase, and studies have documented that this information is accessed for purposes beyond users' original intentions or the site's charter. For instance, employers attending college career fairs have used online technology—including search engines and SNWs—to screen candidates (Shea & Wesley, 2006). Moreover, it has been estimated that approximately 45% of employers use Internet searches of job applicants' personal information to screen employees, more than double the percentage from just a year earlier (Haefner, 2009).

The concept of using SNWs as a source of information about applicant personality tendencies has a theoretical basis in Funder's (1995) realistic accuracy model (RAM). This theory of rating accuracy identifies processes by which personality is more correctly observed. Specifically, rating accuracy is enhanced when target information is conveyed in a rich, yet representative enough manner to project consistent behavioral tendencies and patterns. A range of information reflective of the traits being rated is essential, allowing the rater to form a schema of the target (Foti & Lord, 1987). It is equally important that an array of observable cues be available to the observer. In line with the tenets of RAM theory, we suggest that personality-related information available from social networking profiles may be of sufficient quantity and quality as to permit others viewing this information to draw reasoned inferences concerning target individuals' Big Five personality traits. In addition, self- and peer-rated personality rely on memory recall, which introduce various biases (Highhouse & Bottrill, 1995; Srull & Wyer, 1989) that are not present when rating SNWs.

Gosling, Ko, Mannarelli, and Morris (2002) identified mechanisms through which personality may be expressed in the environment. Individuals select and modify their social environment to be congruent with and to reinforce their dispositions through identity claims and behavioral residue. *Identity claims* consist of observable behaviors in which individuals engage to reinforce their personal preferences or to display their identities to others (Gosling et al., 2002). In SNWs, displaying one's identity to other users can be an integrating act. For example, users indicating favorite books, music, and movies reinforce personal preferences, which are driven by their particular personality traits. *Behavioral residue* refers to the physical traces of activities conducted in the environment. Gosling et al. asserted that an individual who is high on a particular personality trait will engage in more activities that are prototypical of that trait than will an individual low on the same trait. Examples include conversations with other users within the SNW, and photos taken elsewhere and posted in the user's profile, each of which may provide telling information about underlying personality traits.

Related research on this topic has begun to appear in the literature. Other assessments of personality based on e-mail (Gill, Oberlander, & Austin, 2006) and résumés (Cole, Feild, & Giles, 2003; Cole, Feild, & Stafford, 2005) have provided initial evidence that the content found in these formats can provide indications about an individual's personality. Vazire and Gosling (2004) reported using personal websites to draw inferences regarding the Big Five personality traits. Although personal websites bear similarities with SNWs, they are used by such a small percentage of potential applicants as to be impractical for widespread analysis. Finally, Buffardi and Campbell (2008) found a correlation between SNW user self-rated narcissism and SNW evaluator ratings of narcissism. Although narcissism and the Big Five framework pertain to personality and are driven by similar theoretical mechanisms in the SNW context, the Big Five framework is better established in organizational research.

Social Networking Websites and Other Ratings

Studies designed to evaluate and explore the role of personality as a predictor of organizational outcomes such as job performance are numerous (e.g., Barrick & Mount, 1991; Frei & McDaniel, 1997; Ones, Viswesvaran, & Schmidt, 1993; Salgado, 1998; Tett, Jackson, & Rothstein, 1991). Some such studies have utilized meta-analytic procedures and have provided some support for the criterion-related validity of self-reported personality traits. However, less is known in this regard about other-rated personality. This is particularly relevant, as self and other ratings may tap different aspects of individuals' personality.

Self-ratings may incorporate less observable information about motives, intentions, feelings, and past behaviors (Mount, Barrick, & Strauss, 1994), whereas other ratings stem from observed target behaviors or trace artifacts associated with these behaviors. Researchers have argued that ratings generated by having others assess observed behavior may be more predictive of future behaviors (e.g., job performance, academic performance) than are self-assessments of personality (Hogan, 1991; Motowidlo et al., 1996; Mount et al., 1994; Small & Diefendorff, 2006). Other ratings have also been applied directly to employment selection in the form of personality-based interviews (Barrick, Patton, & Haugland, 2000; Van Iddekinge, Raymark, & Roth, 2005). These findings generally demonstrate criterion validities greater than those generated using self-reports (Ones et al., 2007).

McCrae and Weiss (2007) identified three conditions under which other ratings of personality are particularly valuable. The first condition arises when targets are not available to make self-reports, a common issue in

organizational research. Personality assessment via SNWs may be possible when targets are not available for self-ratings. The second condition is when multiple assessments of the target can be readily gathered and aggregated, which can produce better measurement characteristics that subsequently increase the predictive utility of the assessment process. Information-rich SNWs provide an ideal platform from which to collect multiple assessments.

The third condition occurs when self-reports are vulnerable to intentional or unintentional biases. In a variety of organizational contexts, such as employment selection (e.g., Morgeson et al., 2007), self-reports could be affected by faking/socially desirable responding. Kluemper and Rosen (2009) argued that SNW evaluations of personality may be less susceptible to socially desirable responding than are self-reports. The information present on SNWs is accumulated over years and is shared with friends of the user. Intentionally faking information would run counter to the fundamental purpose of SNWs; that is, maintaining online social relationships. Thus, motivation to fake is likely less than with employment selection tests. In addition, some SNW information may be difficult to fake, such as information posted to a user's website by others within the network, or user-generated information, such as the number of friends a user has within the network. However, some SNW content can be manipulated by users to present themselves in a more positive manner, particularly if they become aware that their SNW content could be evaluated. Thus, there is potential for socially desirable responding and impression management.

Assessing Big Five personality traits through SNWs could be possible, particularly in light of past research utilizing word use (Fast & Funder, 2008), attire (Burroughs, Drew, & Hallman, 1991), and photographs (Robbins, Gosling, & Donahue, 1997) to accurately assess personality information. In the SNW context, social information processing theory has been used to describe how individuals compensate for a lack of nonverbal cues to form impressions of interaction partners (Walther, 1992). Impressions are formulated via perceptions of multiple types of online information (Walther & Parks, 2002), which is consistent with the tenets of RAM theory.

Examples of how information available through SNWs might allow for the evaluation Big Five traits are not difficult to conceive. Individuals low in conscientiousness, for example, might be distinguished by a failure to demonstrate self-discipline and cautiousness in online conversations or postings. Individuals low in emotional stability might post content demonstrating a tendency toward large swings of personal or emotional experiences. Those high in agreeableness are trusting and get along well with others, which may be represented in the extensiveness of personal information posted. Openness to experience is related to intellectual curiosity and creativity, which could be

revealed by the variety of books, favorite quotations, or other posts showing the user engaged in new activities and creative endeavors. Extroverts more frequently interact with others, which could be represented by the number of SNW friends a user has.

Initial evidence for some of these relationships has begun to emerge. Karl, Peluchette, and Schlaegel (2010) found that SNW users high in conscientiousness were less likely to post problematic content (e.g., substance abuse, sexual content), while Amichai-Hamburger and Vinitzky (2010) found a relationship between self-rated extraversion and number of Facebook friends. Given the variety of information potentially available on SNWs, we propose that social networking profiles will yield viable, other-rated measures of Big Five personality traits.

Overview of the Present Studies

We conducted two studies to evaluate the use of SNWs to assess Big Five personality traits. The primary purpose of Study 1 is to assess psychometric properties of evaluator ratings, including internal consistency reliability, interrater reliability across evaluators, and convergent validity with self-rated personality ratings. We then assessed the degree to which self- and other-ratings of personality affect evaluator assessments of hirability ratings. A small follow-up sample in Study 1 also examined the criterion-related and incremental validity of other- versus self-rated personality in predicting supervisor-rated job performance.

Study 2 constitutes a constructive replication (Lykken, 1968) of Study 1, and considers the incremental validity of other-rated personality in the prediction of academic performance while accounting for cognitive ability and self-rated personality. It should be noted that the features and functionality of Facebook are periodically modified by its proprietors. The data for this manuscript were collected from Facebook profiles in 2007 (Study 1) and 2008 (Study 2).

Study 1

Method

Study Context

Facebook served as the SNW in both studies. In Facebook terminology, all personal information is arranged in a user *profile*. Profiles include four

different content areas: Main Profile frame, The Wall, Info, and Photos. These four sections are common to all Facebook profiles, yielding a somewhat standardized format that facilitates comparisons across different users. The Main Profile frame contains the user's name, demographic information, status message (what the user is currently thinking, feeling, or doing), profile picture (usually but not always of the user), list of friends (acknowledged acquaintances with other Facebook users), notes (a type of blog), and an add-on applications list. This section also contains The Wall, Info, and Photos as separate embedded tabs.

The Wall is the major content area, containing public messages posted by the user and friends of the user. It also contains information that the user is sharing with all friends, including pictures, videos, and links to other sites. Because The Wall can include posts from both the user and the user's friends, an observer can follow conversations occurring in this public forum. The Info section holds additional user information, including activities; interests; favorite quotations, books, movies, television shows, and music; educational institutions attended; employers; and interest groups. This section also contains an About Me section where the user can reveal more about himself or herself. The Photos section contains pictures that the user and friends have added. If a user's friend has added a picture of the user, the picture is "tagged" with the user's name. This section may also contain friends' comments about the content of the photos.

Participants and Procedure

The sample consisted of 586 undergraduate students (188 males, 398 females) from a university in the midwestern United States. Students participated on a voluntary basis, completing a survey consisting of demographic variables, a personality measure, and a check-off allowing their Facebook profiles to be viewed for research purposes. As an incentive, $500 was awarded to study participants through a raffle consisting of 10 cash prizes of $50 each.

In terms of demographic characteristics, participants were 89% Caucasian (the 11% minorities were evenly distributed among African Americans, Hispanics, Asians, Native Americans, and Other), and had a mean age of 21 years (range = 18–53 years). Of the 586 study participants, 515 (88%) had live Facebook accounts. Of these 515 participants, 274 (53%) of the profiles were accessible to the general public and thus were evaluated for the present study. Of the 274 participants (88 males, 186 females), 90% were Caucasian, and their mean age was 20.3 years. There were no gender, race, or age differences between volunteer and nonvolunteer groups.

Three individuals who served as evaluators were recruited solely to produce ratings from the 274 Facebook profiles. One evaluator, a 46-year-old Caucasian male, was an active SNW member, had 8 years of work experience in human resources and information technology, and was a faculty member in the Management Department of a small university in the eastern United States. The two remaining evaluators had completed a senior-level employee-selection course at a large university in the southeastern United States and were proficient in using Facebook. One evaluator, a 22-year-old Caucasian female, was a Human Resource Management major and Society for Human Resource Management member. Another evaluator, a 22-year-old Caucasian male, was an Information Systems and Decision Science major.

Each evaluator participated in a 2-hr training session that involved a review of the Big Five traits and general rating procedures, familiarization with the rating forms, and practice in rating two random Facebook profiles. Each of the evaluators rated all 274 Facebook profiles. To minimize fatigue, evaluators worked no more than 1 hr per day and 5 hr per week. They were instructed to use as much time as needed to make a good assessment of each individual's Big Five traits using the full range of available Facebook profile information. According to time logs maintained by the evaluators, each evaluator spent an average of about 5 min perusing a profile, and then rendered Big Five trait and hirability ratings.

The 274 participants who completed the initial survey were contacted for a follow-up survey 6 months later. Participants were asked to participate only if they were currently employed, and they were asked to provide contact information for their employer. As an incentive, $500 was awarded to study participants through a raffle of 10 cash prizes of $50 each. Of the 274 participants, 69 (25%) participants responded with supervisor contact information. These supervisors were contacted by e-mail and were asked to complete an online job performance survey. Those supervisors who did not respond within 2 weeks were sent a survey in the mail, followed by telephone calls a month later. In total, 56 (81%) usable responses were obtained for supervisor–subordinate dyads, consisting of three forms of job performance (i.e., task performance, organizational citizenship toward individuals, organizational citizenship toward the organization).

Although small in number, those employees responding did not differ from nonrespondents in gender, race, or age. Demographically, the sample was 33% male and 91% White; mean age was 21 years, and mean total work experience (part-time or full-time) was 4.9 years. As would be anticipated with a college student sample, average job tenure was 1.2 years, and average hours worked was 26 hr per week. The job types covered a variety of professions, involving largely clerical, customer service, and sales.

Measures

Self-reported personality. Participants completed the International Personality Item Pool (IPIP; Goldberg et al., 2006) to assess the Big Five personality traits. The entire scale is 50 items with 10 items for each of the five dimensions (i.e., neuroticism, extraversion, openness to experience, agreeableness, conscientiousness). Participants were asked to answer questions such as "I often feel blue" (neuroticism), "I am the life of the party" (extraversion), "I have a vivid imagination" (openness to experience), "I respect others" (agreeableness), and "I am always prepared" (conscientiousness) using a 5-point Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Other-rated personality. Evaluators also used the IPIP (Goldberg et al., 2006) to assess the Big Five personality traits. Using multiple raters is akin to lengthening a test, and combined scores should be more reliable because of reductions in idiosyncratic rater biases (Campion, Pursell, & Brown, 1988) and canceling out random errors as a result of aggregation (Dipboye, 1992). Personality measures with as few as one item per trait have been used successfully in the literature (see Gosling, Rentfrow, & Swann, 2003), and may be beneficial when raters evaluate a large number of targets. However, because of our interest in the evaluation of internal consistency reliability, three items were selected for each Big Five trait using a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Hiring recommendations. Hirability ratings made by individuals responsible for evaluating applicants have been shown to predict organizational hiring decisions (Cable & Judge, 1997) and job offers (Dipboye, 1994), as well as subsequent job performance (Campion, Palmer, & Campion, 1997). Hirability is judged partly through evaluator perceptions of the applicant and may be based on wide-ranging characteristics (McDaniel, Whetzel, Schmidt, & Maurer, 1994), including an applicant's personality (Dunn, Mount, Barrick, & Ones, 1995). Research has shown that personality ratings correlate with hiring recommendations based on résumés (Cole et al., 2003), biodata (Brown & Campion, 1994), and structured and unstructured employment interviews (Cortina, Goldstein, Payne, Davison, & Gilliland, 2000).

As hirability ratings are common to employment practice, we examined correlations of self- and other-ratings with hirability ratings provided by our SNW evaluators. Hirability assessments were measured using three items drawn from Stevens and Kristof (1995). Those items are "How qualified is this person for the job?"; "How attractive is this applicant as a potential employee of an organization?"; and "How likely would you be to offer this person a job?" The items were rated on a 5-point scale ranging from 1 (*low*) to 5 (*high*). Evaluators were instructed to base hirability ratings on the job of an entry-level manager in a service industry.

Correlations between each of the Big Five traits and hirability ratings were calculated in three ways. First, correlations were computed between self-reported personality and the average hirability rating of the three evaluators. These correlations are referred to as *self-report correlations*. Second, other-rated personality–hirability correlations were computed avoiding same-source data in an effort to minimize common method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). This was done for each trait by correlating the (a) personality ratings from Rater 1 with the average of the hirability ratings from Raters 2 and 3 (b) personality ratings from Rater 2 with the average of the hirability ratings from Raters 1 and 3; and (c) personality ratings from Rater 3 with the average of the hirability ratings from Raters 1 and 2. These three sets of correlations were then averaged (using Fisher's z transformations) to produce different source correlations. Third, other-rated personality–hirability correlations were computed using personality ratings and hirability ratings obtained from the same source. This was done by calculating the correlation between personality ratings and hirability ratings for each of the evaluators. These three sets of correlations were then averaged (using Fisher's z transformations) to produce same-source correlations. Same-source correlations permit covariation between evaluators' hiring recommendations and their idiosyncratic perceptions of the target's personality traits. This condition is likely more typical of how hirability ratings are made in practice.

Supervisor-rated job performance. Supervisors of follow-up study participants rated their subordinates' performance using 15 items drawn from Williams and Anderson (1991). The five items with the highest factor loadings from the original published measure were taken from each of the three dimensions of in-role behavior (IRB), organizational citizenship behavior–individuals (OCBI), and organizational citizenship behavior–organization (OCBO). Sample items include "Adequately completes assigned duties" (IRB), "Helps others who have been absent" (OCBI), and "Attendance is above the norm" (OCBO) using a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). We collapsed the OCB and in-role performance scales into one measure ($\alpha = .91$).

Results

Internal Consistency and Interrater Reliability

Table 1 displays descriptive statistics and reliability estimates for the study variables. Coefficient alphas ranged from .72 for self-rated agreeableness to .91 for supervisor-rated job performance. Interrater reliability of the other-rated personality dimensions was estimated using Intraclass Correlation

Table 1

Descriptive Statistics for Self- and Other-Rated Study Variables: Studies 1 and 2

	Study 1				Study 2			
Variable	*M*	*SD*	α	ICC[a]	*M*	*SD*	α	ICC
Personality ratings								
Extraversion								
Other-rated	3.80	0.79	.85	.72	3.70	0.47	.85	.47
Self-rated	3.70	0.64	.85		3.70	0.44	.79	
Agreeableness								
Other-rated	3.70	0.73	.76	.67	3.90	0.35	.82	.67
Self-rated	3.80	0.42	.72		3.50	0.38	.64	
Conscientiousness								
Other-rated	3.70	0.68	.81	.48	3.80	0.50	.85	.57
Self-rated	3.90	0.47	.85		3.70	0.45	.83	
Emotional stability								
Other-rated	4.00	0.80	.78	.47	3.70	0.36	.71	.43
Self-rated	3.50	0.66	.86		3.30	0.55	.73	
Openness								
Other-rated	3.60	0.84	.80	.54	3.40	0.59	.85	.64
Self-rated	3.60	0.65	.81		3.50	0.36	.64	
Performance[b]	4.40	0.52	.91		3.00	0.54		
Cognitive ability[c]					24.20	4.42		

Note. Study 1, $N = 274$ (except for job performance, $N = 56$); Study 2, $N = 244$. Means and standard deviations in Study 2 for other-rated personality (rated on a scale ranging from 1 to 9) were divided by 9 and multiplied by 5 to present equivalent scores to self-ratings (which were rated on a scale ranging from 1 to 5).
[a]ICC = Intraclass correlation coefficient two-way random effects model average measure reliability ICC (2, 3; McGraw & Wong, 1996). [b]In Study 1, performance was rated by supervisors. In Study 2, performance was the student's cumulative grade point average. [c]Cognitive ability assessed using the Wonderlic Personnel Test (Wonderlic & Associates, 2002).

(ICC) 2 (2, 3; e.g., Van Iddekinge et al., 2005), which ranged from .48 for conscientiousness to .72 for extraversion and averaged .58 across the five traits. These ICCs correspond well with values generally found with other-rated personality in various studies. Connolly, Kavanagh, and Viswesvaran

(2007) reported in a meta-analysis of other-rated Big Five traits that average ICCs ranged from .48 for emotional stability to .66 for extraversion, with an average ICC across the Big Five traits of .56. For hirability ratings, the coefficient alpha for this measure was .83, and an ICC value of .64 was obtained across raters.

Convergent and Criterion-Related Validity

Intercorrelations among Study 1 variables are shown in Table 2. Correlations between other-rated personality and self-rated personality were statistically significant ($p < .05$) for each of the Big Five traits. Correlations between self- and other-ratings of these traits were .30, .23, .40, .44, and .42, respectively, for conscientiousness, emotional stability, agreeableness, extraversion, and openness to experience. These results correspond very well with meta-analytic findings in self- and other-rated personality research in psychology. Connolly et al. (2007) revealed that uncorrected correlations between self- and other-ratings (e.g., close friends, family members) ranged from .27 for emotional stability to .41 for extraversion.

Correlations between Big Five traits and hirability ratings for self-ratings, different source, and same source, respectively, were as follows: conscientiousness, .23, .35, and .54; emotional stability, .07, .22, and .29; agreeableness, .31,

Table 2

Intercorrelations Among Study Variables: Studies 1 and 2

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Performance	—	.17	.27*	.31*	.24	−.06	.05	.05	.08	.28*	−.07
2. Con (Other)	.27*	—	.35*	.70*	.13*	.22*	**.30***	.14*	.27*	.07	−.03
3. EmSt (Other)	.21*	.50*	—	.34*	.60*	−.15*	.14*	**.23***	.07	.26*	−.11
4. Agr (Other)	.19*	.58*	.58*	—	.21*	.17*	.22*	.06	**.40***	.04	.05
5. Ext (Other)	.08	.17*	.26*	.31*	—	−.10	.18*	.16*	.06	**.44***	.01
6. Ope (Other)	.28*	.61*	.32*	.32*	.38*	—	.20*	.19*	.02	.17*	**.42***
7. Con (Self)	.24*	**.19***	.09	.05	−.04	.11	—	.25*	.41*	.24*	−.02
8. EmSt (Self)	.05	.18*	**.21***	.09	.02	−.01	.23*	—	.15*	.42*	.03
9. Agr (Self)	.12*	.14*	.13	**.26***	.07	.15*	.32*	−.01	—	.18*	.17*
10. Ext (Self)	−.03	−.08	−.01	−.02	**.28***	−.05	.32	.23*	.20*	—	.16*
11. Ope (Self)	.15*	.07	−.04	.05	.10	**.16***	.47*	.02	.36*	.34*	—
12. CogAbil	.20*	.04	−.05	.07	−.03	.12	.07	.03	−.03	−.03	.21*

Note. Study 1 (above the diagonal), $N = 274$ (except for job performance, $N = 56$); Study 2 (below the diagonal), $N = 244$. Correlations in boldface represent correlations between other-rated and self-rated personality. Other = other-rated personality; Self = self-rated personality; Ext = extraversion; Agr = agreeableness; Con = conscientiousness; EmSt = emotional stability; Ope = openness to experience; CogAbil = cognitive ability.
*$p < .05$.

.42, and .57; extraversion, .07, .17, and .22; and openness to experience, .04, .09, and .14. Correlations of .13 and above are statistically significant ($p < .05$). A clear pattern of results indicates that same-source correlations were higher than were different-source correlations, which, in turn, were higher than self-report correlations. Across all three types of correlation, agreeableness was the strongest correlate of hirability ratings, followed by conscientiousness, emotional stability, extraversion, and openness to experience.

Evidence of criterion-related validity was gleaned from the follow-up study involving other-ratings of personality and supervisor-rated job performance. We found correlations between supervisor-rated job performance and other-rated emotional stability ($r = .27$, $p < .05$) and other-rated agreeableness ($r = .31$, $p < .05$). For self-rated personality, only extraversion was correlated with supervisor-rated job performance ($r = .28$, $p < .05$). In addition, hirability ratings correlated .28 ($p < .05$) with supervisor-rated job performance.

Incremental Validity

Table 3 reports a series of hierarchical regression analyses that we conducted to assess the incremental validity of other-rated personality beyond self-rated personality in predicting supervisor-rated job performance. The left column displays the results of these analyses. Each self-rated personality trait was individually entered into the first stage of a hierarchical regression analysis. In the second step, the corresponding other-rated personality trait was entered into the model. In the right column of the table, the order of entry was reversed. The results indicate significant incremental validity for other-rated emotional stability ($\Delta R^2 = 7\%$, $p < .05$) and agreeableness ($\Delta R^2 = 9\%$, $p < .05$) beyond self-ratings in predicting supervisor-rated job performance. Conscientiousness and extraversion each explained an additional 3% of the variance, but were not statistically significant. When the analyses were conducted entering other-rated personality traits first, followed by self-rated traits, none of the self-rated traits explained additional variance.

Study 2

Method

Participants and Procedure

The sample for Study 2 consisted of 782 undergraduate students (360 males, 422 females) from a large university in the southern United States. The

Table 3

Hierarchical Regression Analyses for Other-Rated Versus Self-Rated Personality: Study 1

	Incremental validity of Facebook ratings[a]		
Rating source	R^2	ΔR^2	p
Conscientiousness			
Self-rated	.00		.70
Other-rated	.03	.03	.23
Emotional stability			
Self-rated	.00		.70
Other-rated	.07	.07	.05
Agreeableness			
Self-rated	.01		.55
Other-rated	.10	.09	.03
Extraversion			
Self-rated	.08		.04
Other-rated	.10	.03	.23
Openness to experience			
Self-rated	.01		.61
Other-rated	.01	.00	.84
	Incremental validity of self-ratings[b]		
Conscientiousness			
Other-rated	.03		.20
Self-rated	.03	.00	.95
Emotional stability			
Other-rated	.07		.04
Self-rated	.07	.00	.89
Agreeableness			
Other-rated	.10		.02
Self-rated	.10	.00	.71
Extraversion			
Other-rated	.06		.08
Self-rated	.10	.04	.11
Openness to experience			
Other-rated	.00		.69
Self-rated	.01	.00	.70

Note. $N = 56$.

[a]Incremental validity of other-ratings assessed through hierarchical regression analyses with self-rated personality entered in the first stage, and other-rated personality in the second stage. [b]Incremental validity of self-ratings assessed with other ratings in the first stage of the regression, then self-ratings of personality in the second stage.

students participated for extra credit on a voluntary basis by completing a survey consisting of demographic variables, personality and intelligence measures, and a check-off to allow access to grade point average (GPA) data from the university registrar.

With regard to ethnicity, 85% were Caucasian, 7% were African American, 3% were Asian, 4% were Hispanic, and 2% were "other." Participants' mean age was 21 years (range = 18–34 years). Of the 782 study participants, 244 (31%) permitted the researchers to access information on their Facebook profiles. Of that group, 38% were male, 87% were Caucasian, and their mean age was 21 years. Comparing the volunteer and nonvolunteer groups, there were no differences between the groups in academic performance, cognitive ability, Big Five personality traits, race, or age. However, men more often allowed access to their Facebook pages (62% vs. 46%, respectively).

Three evaluators were trained to rate the 244 Facebook profiles. A Caucasian male Ph.D. student in Management completed ratings of Facebook profiles as part of his graduate assistant duties. In addition, two MBA students (a Caucasian female and an African American male) were hired as research assistants. After undergoing the same training as that described in Study 1, at least two evaluators rated each of the 244 Facebook profiles under the same rating protocol used in Study 1. According to evaluators' time logs, each spent an average of 10 min reviewing a Facebook profile, after which they made Big Five trait ratings.

Measures

Big Five personality. As in Study 1, self-reported personality was measured with the 50-item IPIP (Goldberg et al., 2006). Evaluators assessed the Big Five personality traits with 15 items (3 items for each trait) from the bipolar adjective checklist (IPIP; Goldberg, 1992), using a 9-point scale. A sample item for conscientiousness consists of bipolar adjectives ranging from 1 (*very disorganized*) to 9 (*very organized*).

Cognitive ability. Cognitive ability has been shown to be highly predictive of both academic success (Sibert & Ayers, 1989) and job performance (Schmidt, 2002). As it is important to establish the incremental validity of personality traits beyond cognitive ability (Barrick & Mount, 1991), we used cognitive ability as a control variable by using the Wonderlic Personnel Test (WPT; Wonderlic & Associates, 2002).

Academic performance. Cumulative overall GPA data were obtained from the university registrar approximately 3 months after participants completed the study surveys. Studies have found relationships between GPA and job performance (Roth, BeVier, Switzer, & Schippmann, 1996), as well

as other career success criteria, such as starting salary (Bretz, 1989); promotions (Colarelli, Dean, & Konstans, 1987); and appraisal ratings (Day & Silverman, 1989; Lavigna, 1992). Thus, GPA may serve as a reasonable proxy for later job performance. Interestingly, relations of cognitive ability and self-reported Big Five traits with GPA appear to be similar in magnitude to respective relations with job performance (Barrick & Mount, 1991; Hunter & Hunter, 1984; Hurtz & Donovan, 2000; Wolfe & Johnson, 1995).

Results

Internal Consistency and Interrater Reliability

Table 1 displays descriptive statistics and reliability estimates for the study variables. Coefficient alphas ranged from .64 for both self-rated agreeableness and emotional stability to .83 for both self- and other-rated conscientiousness. Interrater reliability of other-rated personality dimensions was estimated using ICCs (Van Iddekinge, Raymark, & Roth, 2005), which ranged from .43 for emotional stability to .67 for agreeableness, and averaged .56 across the five traits. These ICCs again corresponded to values found through meta-analysis of other-ratings (Connolly et al., 2007).

Convergent and Criterion-Related Validity

Correlations among Study 2 variables are displayed in Table 2. Correlations between self- and other-ratings of these traits were as follows: conscientiousness, .19; emotional stability, .21; agreeableness, .26; extraversion, .28; and openness to experience, .16. All of the correlations were significant ($p < .05$). Criterion-related validity was examined for other-ratings of personality and performance. Specifically, other-rated conscientiousness ($r = .27$, $p < .05$), emotional stability ($r = .21$, $p < .05$), agreeableness ($r = .19$, $p < .05$), and openness to experience ($r = .28$, $p < .05$) predicted academic performance. Academic performance was also predicted by self-ratings of conscientiousness ($r = .24$, $p < .05$), agreeableness ($r = .12$, $p < .05$), and openness ($r = .15$, $p < .05$), in addition to cognitive ability ($r = .20$, $p < .05$).

Incremental Validity

Table 4 reports a series of hierarchical regression analyses that we conducted to assess the incremental validity of other-rated personality beyond

Table 4

Hierarchical Regression Analyses for Other-Rated Versus Self-Rated Personality: Study 2

	Incremental validity of Facebook ratings[a]		
Rating source	R^2	ΔR^2	p
Cognitive ability	.08*		.00
Conscientiousness			
Self-rated	.14*	.06*	.00
Other-rated	.20*	.06*	.00
Emotional stability			
Self-rated	.08	.00	.85
Other-rated	.11*	.04*	.01
Agreeableness			
Self-rated	.10*	.02*	.03
Other-rated	.13*	.03*	.01
Extraversion			
Self-rated	.08*	.01	.18
Other-rated	.10*	.02	.05
Openness to experience			
Self-rated	.08*	.00	.46
Other-rated	.15*	.08*	.00
All 5 traits			
Self-rated	.17*	.09*	.00
Other-rated	.24*	.07*	.00
	Incremental validity of self-ratings[b]		
Cognitive ability	.08*		.00
Conscientiousness			
Other-rated	.16*	.09*	.00
Self-rated	.20*	.03*	.01
Emotional stability			
Other-rated	.11*	.03*	.01
Self-rated	.11*	.00	.43
Agreeableness			
Other-rated	.12*	.04*	.00
Self-rated	.13*	.01	.18
Extraversion			
Other-rated	.09*	.01	.16
Self-rated	.10*	.02	.06
Openness to experience			
Other-rated	.15*	.08*	.00
Self-rated	.15	.00	.94
All 5 traits			
Other-rated	.24*	.06*	.02
Self-rated	.18*	.10*	.00

Note. $N = 244$.
[a]Incremental validity of other-ratings assessed through hierarchical regression analyses with cognitive ability entered in the first stage, self-rated personality entered in the second stage, and other-rated personality entered in the third stage. [b]Incremental validity of self-ratings assessed with cognitive ability first; then, other ratings; and finally, self-ratings of personality.

cognitive ability and self-rated personality in predicting performance. The left column displays the results of these analyses. Cognitive ability was entered first for each of the 12 independent analyses, and thus is only reported once at the top of the table. Next, we entered each self-rated personality trait individually in the regression analysis. In the final step, the corresponding other-rated personality trait was entered into the model. We conducted an all-inclusive analysis, entering cognitive ability and all five self-rated personality traits together, followed by the simultaneous inclusion of all five other-rated personality traits in the final stage of the regression analysis. In the right column of the table, the order of entry was reversed to determine the potential incremental validity of self-rated personality beyond cognitive ability and other-rated personality.

Controlling for cognitive ability and self-rated personality, the results indicate incremental amounts of unique variance explained for other-rated conscientiousness ($\Delta R^2 = 6\%$, $p < .05$), emotional stability ($\Delta R^2 = 4\%$, $p < .05$), agreeableness ($\Delta R^2 = 3\%$, $p < .05$), extraversion ($\Delta R^2 = 2\%$, $p < .05$), and openness to experience ($\Delta R^2 = 8\%$, $p < .05$). In addition, the set of five other-rated personality traits predicted additional incremental variance beyond cognitive ability and the set of five self-rated traits ($\Delta R^2 = 7\%$, $p < .05$). When the analyses were conducted entering cognitive ability and the set of other-rated personality traits first, followed by the set of self-rated traits, only conscientiousness ($\Delta R^2 = 3\%$, $p < .05$) and all five self-rated traits together ($\Delta R^2 = 6\%$, $p < .05$) explained additional variance.

General Discussion

The present studies offer some insight into the suitability of using SNW-related information to indicate personality. Gosling et al.'s (2002) work suggests how study participants can embed indications of their personalities in their Facebook profiles. These researchers posited that individuals may externalize personality tendencies to their environments partly through the expressive mechanisms of identity claims and behavioral residue. We suggest that there is evidence that both of these mechanisms could be operating in an SNW context.

Further, the realistic accuracy model (Funder, 1995) provides a theoretical explanation of how other-ratings might function in relation to personality characteristics. This model suggests that observers intuitively evaluate personality cues emitted by others with a functional level of diagnostic accuracy. Early work within this domain suggests that this accuracy may be based more on the accurate processing of numerous low-validity cues pertaining to a target's personality, as opposed to just a select few high-validity cues

(e.g., Funder & Sneed, 1993). This quality may underlie the ability of the evaluators in our studies to infer information from Facebook profiles. SNW information may be arrayed in a rich and, in the case of Facebook, somewhat standardized fashion.

The results reveal ICCs consistent with past studies using other ratings of the Big Five personality traits (Connolly et al., 2007). This indicates that evaluators can reach independent agreement as to personality-related phenomena posted on Facebook. The results also show that the evaluators exhibited an acceptable degree of internal consistency reliability. Together, these results suggest that evaluators trained to assess participant profiles can provide reasonably reliable estimates of Big Five personality traits from SNWs.

Other-ratings of the Big Five personality traits also exhibited convergent validity with self-rated personality traits across both studies. The magnitude of correlations between self- and other-rated traits assessed from Facebook profiles parallels that found in previous studies involving self- and other-rated personality. Connolly et al.'s (2007) meta-analysis showed that uncorrected correlations between self- and other-ratings (e.g., significant others, parents, close friends) ranged between .27 for emotional stability and .41 for extraversion. The average correlations between self- and other-ratings across our two studies ranged from .23 for emotional stability to .34 for extraversion. Thus, other-ratings via social networking profiles closely parallel well established findings of self- and other-rating correlations. Stated differently, observer ratings of personality traits via SNWs are roughly as accurate as ratings made by individuals who have detailed knowledge of the ratee, such as their significant others and close friends.

An array of perceived information is necessary for a rater to form a schema of the target (Foti & Lord, 1987), and some SNW information is likely germane to rater perceptions of specific personality traits. Such SNW information could range from the more subjective (i.e., degree of self-discipline and cautiousness in online postings as a representation of conscientiousness) to the more objective (i.e., number of Facebook friends as a representation of extraversion). To illustrate this notion, in Study 1, we also had an independent evaluator code the number of Facebook friends of each SNW user. We then examined whether number of friends was associated with self- and other-reported extraversion. The analyses reveal that the number of Facebook friends was correlated with self-rated extraversion ($r = .38$, $p < .05$) and other-rated extraversion ($r = .62$, $p < .05$). In this instance, an "objective" SNW indicator displayed shared variance with self- and other-rated extraversion.

Although further research would be necessary, it is plausible that SNW information is considered by evaluators to be in line with the tenets of RAM

theory (Funder, 1995). Of course, other SNW information may not be as easily quantifiable as the number of friends. In any event, future research could more extensively examine the cueing mechanisms at work in SNWs through which personality or other person constructs are conveyed by users and potentially evaluated by interested observers.

With regard to criterion-related validity, correlations between self-reported personality and performance measures in both Study 1 and 2 were relatively low in magnitude, which corresponds with previous meta-analytic findings (Barrick & Mount, 1991; Hurtz & Donovan, 2000). For example, Hurtz and Donovan found an average true-score validity coefficient of .13 across the Big Five traits, which is similar in magnitude to average validity coefficients of .11 and .15, respectively, for Studies 1 and 2. Validity coefficients between other-rated personality and job performance are less established in the literature. However, Mount et al. (1994) showed an average observed validity of .21 between other-rated personality and job performance ratings. This corresponds to an average observed validity of .21 between other-rated personality and performance in both Studies 1 and 2. Thus, the magnitude of other-rating/performance correlations was generally stronger than those between self-ratings and outcomes.

Correlations between same-source SNW ratings of the Big Five traits and hirability ratings were relatively high for agreeableness and conscientiousness (.57 and .54, respectively). Agreeableness and conscientiousness also predicted hirability ratings when measured with both different-source ratings (.42 and .35, respectively) and self-ratings (.31 and .23, respectively). Several implications can be drawn from these results. First, hirability ratings were apparently driven by the raters' perceptions of two particular Big Five traits: agreeableness and conscientiousness. Second, correlations between different-source ratings and hirability indicate SNW-derived information concerning these traits is readily perceived by raters, and that this information affects perceived hirability. Third, correlations between self-ratings and hirability ratings provide evidence that the relationships between personality traits and hirability ratings generalize beyond the social networking context. Finally, hirability ratings correlated with supervisor-rated job performance (.28, $p < .05$), highlighting the job relevance of SNW-rated hirability ratings.

In assessing incremental validity, self-rated personality traits explained limited amounts of performance variance beyond cognitive ability and their other-rated counterparts. Only conscientiousness in Study 2 explained an additional 3% of variance beyond cognitive ability and other-rated conscientiousness. In contrast, other-ratings more consistently accounted for incremental variance. Specifically, in Study 1, emotional stability and agreeableness predicted incremental variance beyond their respective self-rated counterparts (7% and 9%, respectively). In Study 2, conscientiousness,

emotional stability, agreeableness, and openness to experience explained incremental variance beyond both cognitive ability and their self-rated counterparts (6%, 4%, 3%, and 8%, respectively). These findings provide initial evidence for the use of other-rated personality traits via SNWs as a potential predictor of organizational criteria. Future research should evaluate the potential of SNWs as reservoirs of personality salient data. Such information might find use in selection and placement, higher education admissions, or a wide variety of organizational contexts (e.g., self-managed teams, leadership).

Particularly relevant is the use of SNWs in employment selection, as an increasing number of HR practitioners are using SNW information to aid in decisions made at early stages of the selection process, though little formal research has been published focusing on the substance or measurement qualities of such information. It is likely that there is substantial variation in the way organizations approach and handle information gleaned from SNWs. It would be surprising if protocols were not being developed to identify applicants' potential to contribute positively to organizational success, given the prevalence of use of SNWs by hiring managers (Havenstein, 2008) and concerns about legal issues (Lau, 2009).

We stress that although SNW profiles may provide useful screening information, clearly there are issues to be faced when dealing with social networking information. Information readily available on SNWs might not be legal to ascertain or could increase the liability of an organization because of the potential for adverse impact. Although some employers might attempt to focus on job-related social networking information, there is also non-job-relevant information that could be used inappropriately for evaluating applicants (Fuller, 2006), resulting in biased hiring decisions (Purkiss, Perrewé, Gillespie, Mayes, & Ferris, 2006). During a job interview, an employer may avoid asking questions regarding race, religion, sexual preference, or marital status because of potential legal issues. However, such information may be posted or obvious in an SNW (Kowske & Southwell, 2006).

The ethics and legality of screening via SNWs has become an important issue for HR practitioners (Zeidner, 2007), and it should be an area of concern for employers. As HR departments increasingly use SNWs, legal challenges to this practice are likely to emerge. Our findings should not be used by organizations as unbridled support for using SNWs in employment selection. Without more evidence of criterion-related validity and comparability with established employment selection methods, the use of SNW information for hiring purposes is tenuous. In addition to the potential for employment discrimination, there are privacy rights and ethical issues associated with accessing personal information. Clearly, research investigations of such issues lag current informal HR practices. This study takes an initial

step in illuminating the range of issues associated with SNWs and HR selection and development.

Our studies are not without limitations. Although the relationships examined between other-ratings and self-ratings of personality in Study 1 were based on a sample size of 274, correlations pertaining to supervisor-rated job performance were based on a small sample ($n = 56$). Also in Study 1, evaluators of hirability were instructed to base ratings on an entry-level managerial position in the service industry. Specific job descriptions were not provided because we wanted to tap into broad impressions of hirability.

The participants in the studies were all college students, because they represent the largest demographic cohort using SNWs. As other, more professionally oriented SNWs (e.g., LinkedIn) grow in popularity, it may be possible to replicate similar types of studies with other demographic groups.

Finally, SNWs are constantly changing. Future changes may alter the types of information available on SNWs. Moreover, changes in the use of SNWs may impact user decisions to use more caution when granting access to online information.

A practical implication of this research relates to the less time-intensive nature of screening personality via SNWs. Whereas interview-based personality assessments are time-consuming, the average assessment of a social networking profile took 5 to 10 min and did not require a respondent's presence. Evaluating personality via SNWs may be more cost-effective than more traditional methods. However, while the practice of evaluating SNWs in the screening process is currently being conducted by many HR departments on a regular basis, as applicants become more aware of this practice, there could be repercussions. Negative applicant reactions upon discovering that their personal information was used in the hiring decision could become problematic and could diminish the potential benefits of SNW assessment.

Future research should examine the potential issues of adverse impact in using personal information from SNWs. The potential for legal liability is great, considering the dearth of research regarding whether SNW-derived information validly predicts job performance. Until this is established, employers should use caution when using websites such as Facebook to make hiring-related decisions. One remedy that should be investigated is the use of outsourcing the screening of online information for job-relevant content, thereby limiting potentially discriminatory content from the hiring process.

Additionally, more work is needed to compare assessments grounded in SNWs to other employment selection methods (e.g., interviews). It would also be interesting to address the potential for socially desirable responding and self-presentation on SNWs, particularly when users are aware of pending evaluations of their online information. Currently, some employers ask applicants if they can view their SNWs, whereas others do so without

permission. Finally, considering that not everyone uses SNWs, future studies should also assess the degree to which SNWs help or hurt applicants, relative to those for whom social networking information is not available.

We suggest that SNW-based personality assessment may provide a useful tool for organizational research, but only if further validation research is conducted and consideration of legal risks fully considered. In the context of employment selection, the current practice of using SNWs should be scrutinized more carefully by those who make employee selection decisions. However, equally important is the need for further academic study and guidance regarding emerging technologies such as SNWs in the context of a wide range of applications to organizational research.

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