Big Five Personality Traits Reflected in Job Applicants’ Social Media Postings

J. William Stoughton, MS, Lori Foster Thompson, PhD, and Adam W. Meade, PhD

Abstract

Job applicants and incumbents often use social media for personal communications allowing for direct observation of their social communications “unfiltered” for employer consumption. As such, these data offer a glimpse of employees in settings free from the impression management pressures present during evaluations conducted for applicant screening and research purposes. This study investigated whether job applicants’ (N = 175) personality characteristics are reflected in the content of their social media postings. Participant self-reported social media content related to (a) photos and text-based references to alcohol and drug use and (b) criticisms of superiors and peers (so-called “badmouthing” behavior) were compared to traditional personality assessments. Results indicated that extraverted candidates were prone to postings related to alcohol and drugs. Those low in agreeableness were particularly likely to engage in online badmouthing behaviors. Evidence concerning the relationships between conscientiousness and the outcomes of interest was mixed.

Introduction

Organizational scientists, practitioners, and employers have a long history of assessing job applicants’ and incumbents’ knowledge, skills, abilities, and other characteristics directly—for example, through assessment centers, structured and unstructured employment interviews, and self-report screening instruments. Unfortunately, many of these measures are at risk for faking and socially desirable responding as people strive to manage the impressions they create.1–3

Outside of the workplace, many job applicants and incumbents use social media for personal communications unintended for employers, often leaving public traces of their social communications in cyberspace through forums such as blogs, tweets, and posts on social networking Web sites such as Facebook.4,5 These potentially rich sources of data, which typically have not been “filtered” for employer consumption, offer a glimpse of employees in settings free from the high stakes commonly associated with work-related evaluations.6–8

Employers have arguably been quicker than organizational scientists to realize social media’s assessment potential. Numerous reports have emerged concerning employers’ use of social media to screen job candidates and monitor employees’ “off-the-clock” behaviors.7–11 As social media surveillance becomes increasingly commonplace, questions emerge regarding precisely what types of people employers are screening out when they eliminate and terminate candidates and incumbents engaging in online communications deemed undesirable.

Among organizational researchers, there is a growing interest in the measurement possibilities that social media may have to offer.12 As noted by Orchard and Fullwood,13 online behavior generally mimics the behavior expected by one’s offline disposition. Thus, the capacity to link data from social networking sites to variables of interest in research (e.g., personality, attitudes, integrity) holds promise. Indeed, the degree of behavioral autonomy offered by social media may render Facebook, Twitter, and other such forums optimal sources of such information. As noted by Robie and Ryan,14 “the higher the autonomy, the fewer demands or pressures to conform, the more discretion an individual has in determining which behaviors to undertake (i.e., the ‘weaker’ the situation), and the more individual differences in dispositional characteristics are likely to influence the specific behavior a person adopts.”

The purpose of the present study is to examine whether job applicants’ personality characteristics can be inferred through the content of their social media postings. This research focuses on two broad types of postings: (a) criticisms of superiors and peers (so-called “badmouthing” behavior); and (b) photos and text-based references to alcohol and drug use—two of the more common behaviors cited by hiring managers as red flags for applicants.15 Hypotheses and research
questions center on the personality traits likely to be reflected by such behaviors, with a particular focus on the Big Five personality variables: openness to experience, conscientiousness, extraversion, agreeableness, and emotional stability.

Badmouthing Behavior

Badmouthing refers to criticisms and disparaging remarks that can be directed at superiors, peers, customers, subordinates, and/or organizations. The popular press has reported individuals being fired for engaging in such behavior on Facebook. Badmouthing is detrimental in the workplace because it has been shown to prompt cynicism among peers exposed to an employee’s badmouthing behavior. Badmouthing through social media may be particularly harmful, given its potential to reach wide audiences in a short period of time. As of 2012, Facebook had 1 billion active users, and Twitter averaged 400 million Tweets per day.

Badmouthing behavior is expected to reflect two personality variables: agreeableness and conscientiousness. People high in agreeableness are generally characterized as: courteous, flexible, trusting, good-natured, cooperative, forgiving, soft-hearted, and tolerant. Theory suggests that people high in agreeableness are unlikely to harbor the critical, cynical, and disparaging viewpoints that prompt badmouthing behavior. In addition, past research demonstrated a strong (i.e., −0.36) meta-analytic correlation between interpersonal deviance and agreeableness. Facebook badmouthing has been identified as a form of interpersonal deviance, and previous research suggests that unfriendly Facebook behavior is unlikely to be engaged in by individuals that view the same behavior as “unfriendly” in social interaction. Moreover, previous research hypothesized a relationship between agreeableness and amount of information disclosed on Facebook accentuating agreeable traits. Accordingly, we expect badmouthing through social media to reflect an individual’s agreeableness.

H1: Agreeableness will be negatively associated with badmouthing through social media.

Conscientiousness has been defined by a variety of adjectives, including careful, thorough, responsible, organized, systematic, deliberate, hardworking, self-disciplined, and persevering. Noting that there has been some disagreement regarding the essence of this dimension, Barrick and Mount indicate that conscientiousness has also been called “conformity,” “dependability,” and the “will to achieve.” Highly conscientious individuals have been found to be more reactive to electronic performance monitoring than those lower in conscientiousness, which is believed to reflect a relation between conscientiousness and impression management. Employer screening of social media constitutes a form of electronic surveillance. Warnings abound cautioning job seekers to “clean up” their online presence by deleting and refraining from potentially objectionable social media postings.

Previous research suggests that individuals are aware of the negative associations with badmouthing on Facebook. It is also likely that awareness of Facebook norms against such behavior is more salient for highly conscientious individuals due to the conformity inherent to the trait. Due to the dispositional characteristics described above, coupled with the norms governing posting, those higher in conscientiousness are expected to badmouth less, irrespective of any animosity they may harbor toward would-be targets.

H2: Conscientiousness will be negatively associated with badmouthing through social media.

From a purely exploratory standpoint, there is value in examining whether badmouthing behavior reflects other Big Five personality characteristics:

RQ1: Are openness to experience, extraversion, and emotional stability associated with badmouthing through social media?

Substance Use Postings

Social media tools such as Facebook are commonly used to document and recount social events occurring offline. Anecdotally, it is common for such postings to include photographs of, and references to, alcohol and drugs, which play a prominent role in some individuals’ social networking sites. Employers screening applicants’ social networking sites have described references to drinking and drug use as red flags contributing to their decision not to hire a prospective employee. In fact, reports have indicated that employers may be more likely to screen out job candidates who boast about their drinking behavior than candidates with poor communication skills.

Extraversion has been defined as “being sociable, gregarious, assertive, talkative, and active.” One notable aspect of extraversion concerns sociability and is revealed in exhibitionism and expression. Consistent with this characterization, Krämer and Winter found that extraverts are more likely to post less conservative and more “experimental” pictures on social networking Web sites. While there may be little social pressure to present one’s self as extraverted, reported that extraverts believed perceptions of popularity to be paramount on Facebook. Therefore, it is likely that extraverts would be more likely to highlight demonstrations of extraversion (e.g., substance use, partying, etc.) on social networking Web sites, using the Web sites to enhance their already social lives. Further, previous work indicates that high self-monitors prefer robust Facebook profiles, while self-monitoring has been found to be highly related to extraversion.

H3: Extraversion will be positively associated with social media substance use posting.

As noted earlier, highly conscientious people are expected to heed the widely articulated warnings to avoid using social media in ways that may be deemed inappropriate or unprofessional. Conscientious persons are likely to take a more guarded or modest approach to their postings. Examination of Facebook self-disclosure highlights that those more likely to take a guarded tone have a lower propensity for problematic behavior. Accordingly, conscientious individuals should be less likely to post references to alcohol and drugs on their social media sites.

H4: Conscientiousness will be negatively associated with social media substance use posting.
Given the lack of research in this area, the possibility that substance use posting behavior reflects other Big Five personality characteristics will also be explored.

**RQ2:** Are openness to experience, agreeableness, and emotional stability associated with substance use posting behavior through social media?

### Method

#### Participants

Participants (N=175; 63% female) were individuals enrolled at a large Southeastern university who applied for a temporary, paid, research assistant position. The average age of the sample was 19.19 years (SD=3.14). The sample was 73% Caucasian, 8% African-American, 8% Asian-American, 5% Hispanic, and approximately 6% reported another ethnicity.

#### Design and procedure

Applicants were recruited from a larger pool (N=976) of psychology students who had volunteered to participate in a pilot study. Participants in the pilot study were informed that a university affiliated firm had asked the university’s Industrial Organizational Psychology program to help select temporary research assistants for an assignment. This position was described as one that pays the selected individuals $75 to spend 1 hour online providing opinions about a series of web pages. As part of this initiative, the psychology department was said to have developed an online application and assessment survey (i.e., selection battery), which participants were asked to complete. The selection battery gathered names, e-mail addresses, and information about each individual’s grade point average (GPA), Big Five personality characteristics, Internet experience/knowledge, and responses to an item embedded in the Internet knowledge scale, asking “Which of the following social networking Web sites do you use on a regular basis?” This item was used to determine eligibility for the current study, which was limited to active Facebook users.

Pilot study participants were asked if they wanted to be considered for the temporary position. A total of 506 (52%) of the participants expressed interest in the job. After completing the selection battery, all applicants were informed that the research team would contact them within 2–3 weeks to let them know if they were finalists for the position.

Of the 506 applicants, 502 individuals indicated they used Facebook on a regular basis and were therefore retained for this experiment. After 2 weeks had passed, they were contacted through e-mail and informed that the university team had completed its portion of the assessment and the organization would make the selection decision from a list of finalists. The e-mail provided a link to a university sponsored applicant reactions survey, which measured the criteria of interest in this study—badmouthing behavior and substance use postings. Participants were asked to complete this survey in exchange for entry into a raffle for $100. Participants were assured that the hiring organization would not be told who did and did not complete the survey and that the results would only be presented in aggregate form after the hiring decision was made and the job completed. In addition to gathering reactions to the selection procedures, this follow-up survey asked participants to report on the contents of their social media sites.

Overall, 35% of the 502 eligible individuals completed the survey described above, yielding a sample size of 175 for the current study. At the conclusion of data collection, all participants were debriefed as to the true nature of the study in compliance with APA guidelines for protection of human subjects; no adverse events were reported as a result the study’s use of deception.

#### Measures

Table 1 summarizes the measures used to assess each variable in this study. All scales were within acceptable ranges for skewness and kurtosis.

### Results

Table 2 provides descriptive means, standard deviations, and correlations among the study variables. The correlations shown in Table 2 support hypotheses 1 and 2, which predicted that those lower in agreeableness and conscientiousness would engage in more online badmouthing behaviors. Openness to experience, extraversion, and emotional stability were not significantly related to badmouthing (RQ1). A multiple regression analysis (see Table 3) revealed that the Big Five personality variables together explained 7% of the variance in online badmouthing, $F(5, 169) = 2.61, p = 0.026$. Although conscientiousness had a significant bivariate relationship with badmouthing (Table 2), it fell short of statistical significance when analyzed in conjunction with the other Big Five personality variables (Table 3), while agreeableness remained significant.

Hypotheses 3 and 4 anticipated that those higher in extraversion and lower in conscientiousness would report more online references to alcohol and drug use. As shown in Table 2, the data supported hypothesis 3 but not hypothesis 4. Beyond extraversion, no other personality variables were significantly associated with the tendency to post references to substance use on social media (Table 2; RQ2). Multiple regression (Table 3) revealed that the Big Five personality variables together explained 8% of the variance in substance use posting frequency, $F(5, 169) = 2.82, p = 0.018$, with extraversion emerging as the only significant predictor.

### Discussion

This research was designed to examine whether job applicants’ personality characteristics can be inferred through the content of their social media postings. To be clear, this is not a study about which character traits are related to negative behaviors. Rather, it is a study about which personality characteristics are related to leaving traces of such behaviors in a public, online, social space. While this subject matter is relevant across a wide range of contexts, we framed our consideration of the topic in the context of job applicants. This was done in order to begin to provide a theory-driven evidence base upon which researchers, applied psychologists, and employers confronted with the prospect of social networking employment screening can draw. Abundant popular press reports of screening job applicants through social networking Web sites suggests a high level of concern for this topic.

Overall, our findings suggest that self-reported substance use postings correlate with extraversion, while badmouthing
negatively correlated with agreeableness and conscientiousness. Accordingly, online badmouthing behaviors can be used to infer relatively low agreeableness. In addition, postings related to alcohol and drug use can be said to be online manifestations of extraversion. However, evidence concerning the relationship between conscientiousness and the outcomes of interest was mixed. Specifically, conscientious applicants were less likely to badmouth, but no relationship was found between conscientiousness and substance use posting behaviors.

The inconsistency regarding conscientiousness is particularly interesting. We argued that conscientious individuals should be the most likely to comply with warnings against inappropriate behaviors on social media. Highly conscientious individuals may avoid badmouthing in general because it is frowned upon in settings beyond the employment context. Partying, however, differs from badmouthing; whether it is viewed as inappropriate likely depends on one’s social media audience. Popular press claims indicate that applicants and incumbents do not necessarily view their Facebook profile as relevant to employers. 6–8 Perhaps many applicants do not consider their social media usage through the eyes of employers. That is, surveillance by prospective employers is not typically salient to applicants, and this salience may moderate whether conscientiousness relates to substance use postings.

Limitations and Future Research

The use of a student sample added unique complications that might be avoided with a nonstudent sample. For instance, the measure of badmouthing (see Table 1) was not restricted to an employment context but also included references to professors and classmates. However, including professors and classmates is a realistic proxy for supervisors and co-workers for this sample. Moreover, employers investigating the social media sites of college students and recent graduates likely look for this type of badmouthing.7,15 It is assumed that when screening applicants, most hiring managers would view badmouthing of professors and classmates as unfavorably as employers and coworkers. However, this assumption was not tested. Whether badmouthing academic (e.g., classmates) and work-related (e.g., co-workers) targets is equally indicative of low agreeableness remains an open question.

Additionally, it should be noted that our assessments of personality and reports of social media postings were separated in time. The assessment of different measures separated in time is typically a positive aspect of a study, 39 serving to increase participant candor with sensitive subject matters such as those investigated in this study. However, when viewing social media as an avenue with which to make inferences about personality, this temporal lag may have attenuated the observed correlations. Similarly, the different

<table>
<thead>
<tr>
<th>Variable</th>
<th>No. items</th>
<th>Example item</th>
<th>Response scale</th>
<th>( \alpha )</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Badmouthing</td>
<td>2</td>
<td>“…how often have you (a) criticized your employer or professors? (b) criticized your coworkers or classmates?”</td>
<td>1 (&quot;never&quot;) to 5 (&quot;very often&quot;)</td>
<td>0.75</td>
<td></td>
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<tr>
<td>Substance use posting</td>
<td>6</td>
<td>“…during the past year, how often have you posted photos of yourself drinking alcohol?”</td>
<td>1 (&quot;never&quot;) to 5 (&quot;very often&quot;)</td>
<td>0.81</td>
<td></td>
</tr>
<tr>
<td>Extraversion</td>
<td>10</td>
<td>“I am the life of the party”</td>
<td>1 (&quot;strongly disagree&quot;) to 5 (&quot;strongly agree&quot;)</td>
<td>0.89</td>
<td>Goldberg’s 42 International Personality Item Pool</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>10</td>
<td>“I sympathize with others’ feelings”</td>
<td>1 (&quot;strongly disagree&quot;) to 5 (&quot;strongly agree&quot;)</td>
<td>0.80</td>
<td>Goldberg’s 42 International Personality Item Pool</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>10</td>
<td>“I am always prepared”</td>
<td>1 (&quot;strongly disagree&quot;) to 5 (&quot;strongly agree&quot;)</td>
<td>0.86</td>
<td>Goldberg’s 42 International Personality Item Pool</td>
</tr>
<tr>
<td>Emotional Stability</td>
<td>10</td>
<td>“I am relaxed most of the time”</td>
<td>1 (&quot;strongly disagree&quot;) to 5 (&quot;strongly agree&quot;)</td>
<td>0.88</td>
<td>Goldberg’s 42 International Personality Item Pool</td>
</tr>
<tr>
<td>Openness to Experience</td>
<td>10</td>
<td>“I have a rich vocabulary”</td>
<td>1 (&quot;strongly disagree&quot;) to 5 (&quot;strongly agree&quot;)</td>
<td>0.83</td>
<td>Goldberg’s 42 International Personality Item Pool</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>( r )</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Badmouthing</td>
<td>1.32</td>
<td>0.51</td>
<td>(0.75)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Substance use</td>
<td>1.26</td>
<td>0.41</td>
<td>0.29**</td>
<td>(0.81)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Extraversion</td>
<td>3.56</td>
<td>0.74</td>
<td>0.05</td>
<td>0.23**</td>
<td>(0.89)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Agreeableness</td>
<td>4.23</td>
<td>0.50</td>
<td>-0.21**</td>
<td>-0.04</td>
<td>0.35**</td>
<td>(0.80)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Conscientiousness</td>
<td>3.73</td>
<td>0.65</td>
<td>-0.18*</td>
<td>-0.11</td>
<td>0.02</td>
<td>0.30**</td>
<td>(0.86)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Emotional stability</td>
<td>3.39</td>
<td>0.78</td>
<td>-0.03</td>
<td>0.01</td>
<td>0.16*</td>
<td>0.03</td>
<td>0.15*</td>
<td>(0.88)</td>
<td></td>
<td></td>
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<tr>
<td>7. Openness to experience</td>
<td>3.80</td>
<td>0.60</td>
<td>-0.02</td>
<td>0.03</td>
<td>0.24**</td>
<td>0.21**</td>
<td>0.08</td>
<td>0.26**</td>
<td>(0.83)</td>
<td></td>
</tr>
</tbody>
</table>

Note. N=175. Numbers on the diagonal are Cronbach’s \( \alpha \) reliability coefficients. *\( p<0.05 \) (two-tailed); **\( p<0.01 \) (two-tailed).
response scales used for the social media items (behavioral frequency response) and the personality items (Likert type) likely further attenuated the correlation between the two. Future researchers could avoid the need for self-report by directly measuring social media profiles, using coding schemes of observable behaviors. Hopefully, the results of the present study will guide researchers interested in constructing behavioral checklists to investigate more fully the latent constructs represented by social media postings.

It should be noted that the job examined in this study was a short-term, temporary assignment. This context is presumably similar to that experienced by individuals seeking employment with temporary work agencies. Such individuals comprise a nontrivial segment of the labor force with more than 15 million workers employed in some nontraditional capacity (e.g., contractors, on-call workers, contingent workers). Future research examining the degree to which this study’s findings generalize to permanent, full-time employment contexts would be fruitful. It is quite possible that the magnitude of the effects uncovered in this study would be even larger in higher stakes situations.

Conclusion

For organizational researchers and others, questions have been raised about whether personality can be assessed based on an individual’s Facebook page. The present study provides data relevant to such discussions. While this study’s regression models demonstrated modest variance explained, results suggest that inferring certain personality characteristics from social media postings may be a viable area for further scientific study. It is hoped that the present results will be used to inform subsequent inquiry into the measurement of personality via social media.

Notes

a. The present study was part of a larger data collection effort that incorporated additional variables irrelevant to the current investigation.

Author Disclosure Statement

No competing financial interests exist.

Table 3. Regression Models for the Study Variables

<table>
<thead>
<tr>
<th>Criterion: Badmouthing</th>
<th>b</th>
<th>R²</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression model</td>
<td>0.07</td>
<td>2.61*</td>
<td></td>
</tr>
<tr>
<td>Extraversion</td>
<td>0.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agreeableness</td>
<td>-0.22**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>-0.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emotional stability</td>
<td>-0.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Openness to experience</td>
<td>0.01</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Criterion: Substance use</th>
<th>Regression model</th>
<th>0.08</th>
<th>2.82*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraversion</td>
<td>0.28**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agreeableness</td>
<td>-0.12</td>
<td></td>
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</tr>
<tr>
<td>Conscientiousness</td>
<td>-0.08</td>
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</tr>
<tr>
<td>Emotional stability</td>
<td>-0.02</td>
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<tr>
<td>Openness to experience</td>
<td>0.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. N = 175. * p < 0.05; ** p < 0.01.

References

30. Utz S. Show me your friends and I will tell you what type of person you are: how one’s profile, number of friends, and type of friends influence impression formation on social network sites. Journal of Computer-Mediated Communication 2010; 15:314—35.

Address correspondence to:
J. William Stoughton
Department of Psychology
640 Poe Hall, Campus Box 7650
Raleigh, NC 27695-7650
E-mail: jwstough@ncsu.edu
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