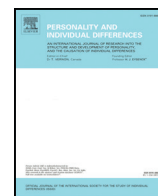




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## A picture tells a thousand words: What Facebook and Twitter images convey about our personality

Monica Therese Whitty<sup>a,b,\*</sup>, James Doodson<sup>c</sup>, Sadie Creese<sup>d</sup>, Duncan Hodges<sup>e</sup><sup>a</sup> Cyber Security Centre, University of Warwick, WMG, Warwick, United Kingdom<sup>b</sup> Media and Communications Department, Melbourne University, Melbourne, Australia<sup>c</sup> Department of Media and Communications, University of Leicester, Leicester, England, United Kingdom<sup>d</sup> Cyber Security Centre, Department of Computer Science, University of Oxford, Oxford, Oxfordshire, United Kingdom<sup>e</sup> Centre for Electronic Warfare, Information & Cyber, Cranfield University, Defence Academy of the United Kingdom, Shrivenham, United Kingdom

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## 1. Introduction

Social networking sites (SNSs) have become a popular medium for communication and networking for individuals of all ages (Nadkarni & Hofmann, 2012; Subrahmanyam, Reich, Waechter, & Espinoza, 2008; Valkenburg & Peter, 2009). These sites can potentially provide valuable information about a person that could assist in authentication and identification. Moreover, they might provide the user with rich information (e.g., about potential dates or employees). In contrast, of course, users can perform different versions of the 'self' on these platforms (e.g., Turkle, 1995) or, as others would contend, express their 'true selves' in this space (e.g., Marriott & Buchanan, 2014; McKenna & Bargh, 2000). Although researchers are beginning to learn more about what online personal data presented on SNSs might tell us about a person, there is scope to learn much more about digital identities and what they reveal about the person behind the profile. This study focused, in particular, on whether personality predicts profile choices as well as image choice behaviour on two different SNSs: Twitter and Facebook.

Drawing from Goffman's (1959/1997) work, it has been theorised that SNSs provide an ideal environment for impression management. SNS users can be very selective in the information they choose to present on these sites, including, for example, their interests, activities, opinions and emotions. It has been argued that some users consciously select information to present in order to convey a certain impression (Wu,

Change, & Yuan, 2015). Equally, however, some details might *leak* additional personal information about a person, unintended and sometimes unbeknownst to the user; for example, ethnicity, education or class (Whitty & Young, 2017).

Individuals who score higher on certain types of personality characteristics might choose to represent themselves in distinct ways (e.g., Back et al., 2010; Krämer & Winter, 2008). Extraverts, for example, are: more likely to select self-representative photographs (Wu et al., 2015), less likely to post conservative pictures of themselves, have a greater number of online friends, and are more likely to use the communication function on SNSs (Krämer & Winter, 2008; Wang, Jackson, Zhang, & Su, 2012). Neurotic individuals are more likely to use the status update feature and agreeable individuals are more likely to write comments on others' profiles (Wang et al., 2012). Women low in agreeableness are more likely to use the instant messaging features on social networking sites, while men low in openness play more games via social networking sites (Muscanell & Muscanell & Guadagno, 2012). Individuals who score high on narcissism are more likely to select pictures that are more physically attractive (Kapidzic, 2013; Wu et al., 2015).

Images and photographs, in and of themselves, might be used intentionally to convey a particular identity, including personality features (e.g., Wu et al., 2015). Kapidzic and Herring (2015), for example, found that females are more likely than males to select a seductive photograph as their profile picture. Zheng, Yuan, Chang, and Wu (2016) found that women are more likely to emphasize emotional expression in their profile pictures compared with men, whilst men were more likely to emphasize having fun. Users, however, might also unintentionally *leak* aspects about a person; such as age, ethnicity, hobbies, relationship status (Lee-Won, Shim, Joo, & Park, 2014). For example and perhaps unsurprisingly, it has been found that individuals who upload dyadic profile pictures on Facebook report feeling more satisfied with their relationship and closer to their romantic partners compared with individuals who do not (Saslow, Muise, Impett, & Dublin, 2012). Tifferet and Vilnai-Yavetz (2014) have found that men were more likely to have profile pictures which accentuate status and risk taking, while women were more likely to have photographs which including familial relations and showed emotional expression.

The research presented in this paper builds upon this previous literature by examining whether personality predicted users' profile image

\* Corresponding author at: Cyber Security Centre, University of Warwick, WMG, Warwick, United Kingdom.

E-mail address: [MW@warwick.ac.uk](mailto:MW@warwick.ac.uk) (M.T. Whitty).

choices on SNSs. We focused on two different types of SNSs in our study, which serve different social purposes — Facebook and Twitter. Facebook is more privately oriented with a focus on maintaining connections with existing friendship groups and communicating with them via multiple methods (Raacke & Bonds-Raacke, 2008). Conversely, Twitter is more publically oriented and users' friends are more likely to be unknown compared with Facebook friends (Hughes, Rowe, Batey, & Lee, 2012; Marwick, 2011). We investigated whether personality predicts: how often users change their profile image; if individuals choose to use an *avatar* (an icon or figure that represents that person, but is not a photograph of that person) or a *photograph of themselves*; if users include a *recent photograph* of themselves; and if users select a profile image they believe *represents their personality*.

### 1.1. Hypotheses

We employed the Five Factor model (Costa & McCrae, 1992; Goldberg, 1990), which is commonly employed to measure personality. We hypothesised that those who score high on extraversion (H1) and conscientiousness (H2) will be more likely to change their images more frequently compared with those who score low on these two scales. Our first hypothesis is based on the assumption that because extraverts are outgoing and social they will be more likely to want to update how they present themselves. Our second hypothesis is based on the assumption that those who score high on conscientiousness will be more motivated to keep their profile up-to-date. It was further hypothesised that individuals who score low on openness to experience (H3) and high on extraversion (H4) will be more likely choose a photograph than an avatar. These hypotheses are based on the assumption that people who score higher on openness tend to be more creative and open to new ideas and therefore an avatar might be perceived as a more creative depiction of themselves, whilst, introverts might choose an avatar in preference to a photograph to divert attention away from themselves. The fifth hypothesis (H5) is that those who score high on conscientiousness will be more likely to include a recent photograph of themselves. Again, this is based on the assumption that conscientious people might be more likely to keep their profile up-to-date. The sixth and final hypothesis (H6) is that individuals who score low on openness to experience will choose an image that more closely represents their self-concept. This is based on the assumption that because individuals low on openness to experience are far less likely to be creative and experimental they will chose an image that more closely represents their self-concept.

## 2. Method

### 2.1. Participants

One thousand, two hundred and twenty four individuals were recruited from a 'Qualtrics' online panel. Of these individuals, 357 individuals reached the end of the study (29% completion rate), in the main due to screener questions, which eliminated participants due to not having a Twitter and a Facebook account (43%). This meant the drop out rate, due to incompletion of the survey was only fairly small (28%). Another 150 individuals were then excluded for no longer using their Facebook or Twitter account (136), for withdrawing their consent for the study (8), for repetitive or inappropriate responding (4), or for incomplete responses (2). After exclusions, the final sample for this study consisted of 207 participants (115 male; 92 female). The mean age of the sample was 40.1 years ( $SD = 13.1$ ) ranging from 19 to 77 years. For men, the mean age was 41.0 years ( $SD = 12.8$ ) ranging from 19 to 68 years. For women, the mean age was 39.0 years ( $SD = 13.3$ ) ranging from 20 to 77 years. All participants had both an active Facebook and Twitter account.

### 2.2. Materials

Data were collected using a questionnaire hosted on the Qualtrics online survey platform.

#### 2.2.1. Big 5

Personality traits were measured using a Five-Factor Personality Inventory validated for use online (Buchanan, Johnson, & Goldberg, 2005). This 41-item inventory gives measures of Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. The subscales have high reliability and have been successfully used in a range of Internet-mediated studies. In our study, Cronbach's  $\alpha$  ranged from 0.69 to 0.84.

#### 2.2.2. Self-rating items

Participants were asked several questions about their Facebook and Twitter activities, including: frequency of use (on a 7-point scale from 'once a year or less' to 'more than once a day'); how regularly they changed their profile image (on a 7-point scale from 'once a year or less' to 'more than once a day'); whether the profile image was an *avatar* or a *photograph of themselves* (with three categories to choose from: 'yes, the image includes a recent photograph of me from the last six months'; 'yes, the image contains a photograph of me, although is more than six months old'; 'no, the image does not contain a photograph of me'); and how closely their profile image represented their personality with three categories to choose from ('not at all representative'; 'somewhat representative'; 'very representative') (see Table 1 for correlations between these items).

We appreciate that the question that asks participants how closely their profile image represented their personality might not be interpreted as personality representativeness per se. However, by this question we were more interested in the participants' perceptions of self-concept. We opted to use this phrasing given our piloting of questions suggested that participants felt more comfortable with the term personality, as this term was more commonly used in 'everyday speech'. Furthermore, we believed it was important to ask this question to all users (i.e., those who included an avatar or a photograph). This is based on previous research that has examined representation of self via the use of photographs (e.g., Fernandez, Stosic, & Terrier, 2017; Leikas, Verkasalo, & Lönnqvist, 2013) and avatars (e.g., Dunn & Guadagno, 2012).

### 2.3. Procedure

We commissioned Qualtrics to recruit participants from their online panel. Participants were required to reside in the UK and have both a Facebook and a Twitter account. Participants were presented with information about the study and asked to indicate informed consent before proceeding. On the subsequent pages they were asked to complete a number of demographic items; self-rating items (described above), and complete the Five-Factor Personality Inventory.

## 3. Results

Our first two hypotheses were concerned with the frequency participants updated their profile image on Facebook and Twitter. To test our hypotheses a forced-entry multiple ordinal regression was calculated with the frequency of avatar change as the outcome variable and the Big Five personality traits as the predictor variables. Ordinal regression was considered appropriate given that the frequency of avatar change measure was ordered-categorical in nature. Separate regression models were calculated for Facebook and Twitter (frequency of participants' updates is shown in Table 2). The frequency with which participants used an online service was also controlled for in the regressions because participants who more frequently used a service would have more

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