

Disclosing personal information online;

links between Extraversion, Neuroticism, Self-monitoring, Narcissism

and

online privacy awareness

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Abstract

The purpose of this study was to explore the correlation between online privacy awareness and the four psychological constructs of extraversion, neuroticism, self-monitoring and narcissism. Snowball sampling was used to recruit 84 Facebook users over 18 years of age (F=52 M=32). Each participant filled out an anonymous questionnaire with scales for the four constructs in scope and a number of stand-alone questions related to their privacy settings in Facebook. Statistical analysis found a moderate negative correlation between neuroticism and privacy awareness. However no other statistically significant correlations were found. Cross-sectional analysis was performed between participants grouped by their choice of privacy setting and extraversion. No significant difference was found. Overall participants had a high level of privacy awareness and a low level of confidence in the privacy protection offered. More research is needed to explore how privacy awareness can translate into to pro-privacy behaviour.

Introduction

A social networking site is “a dedicated website or other application which enables users to communicate with each other by posting information, comments, messages images etc.” (www.oxforddictionaries.com). With the increasing use of social networking sites such as Facebook, MySpace and LinkedIn individuals are sharing a large amount of information with their social network online. The Office of National Statistics (2011) reported that in the UK 91% of 16-24 year olds had used social networking sites such as Facebook and Twitter and high levels of use was seen at all ages, the level of use among those over 65 being 19%. The Sunday Independent (2013) reported that the number of Facebook users in Ireland increased by 250,000 in two years and there are now 1.75 million users Irish Facebook users. With this level of usage social networking sites collect large amounts of information both on active users and information posted by users on non-users. The boundaries of a social network are not clearly defined and it can be difficult for user to understand how information users share can propagate and be visible to others outside their circle of friends. Most social networks have some method where users can be invited to be friends of existing users; these friends will in turn have their own circle of friends. Friends can typically share information with friends and friends of friends resulting in a given user having a poor understanding of the number and identity of users who may ultimately have access to their social content. It is this web of connections that makes it difficult for users to know the full level of visibility of information they share.

The terms online privacy and online security are not clearly defined and are often considered different terms for the same thing. For the purpose of this study the term online privacy control will be used for any configurable parameter within a social networking site which gives the user control over who can access or use the information they post online. The

meaning of the concept information privacy concern was investigated by Hong and Thong (2013). They investigated how various studies have used the term and how users understand it. They found no agreed definition but found it most often defined in terms how much a user is concerned by how a site collects and uses their personal information. This is the interpretation of online awareness used in this study of i.e. how the sites can collect and use posted information and the settings users have to control this.

Each social networking site has privacy settings with which the user can exert a level of control over the visibility of their profile information including their status and any posts or comments they may make to the site. Each site provides a set of default privacy settings which a user can modify. The default privacy settings allows the social network site to both share and use a lot of personal information as a result it is essential that a user is aware of the implications of the privacy policy. The user needs to understand what permission they are giving the social networking site regarding the processing of their personal information, and to whom that information is made visible. Pitkänen and Tuunainen (2012) surveyed 210 Facebook users and found that even when used thought they understood the privacy controls they had poor awareness of the visibility of their information to people that they did not know. Levels of online information disclosure have been shown to increase the risk of cyber bullying and cyber stalking (e.g. Welsh and Lavoie, 2012). Welsh and Lavoie (2012) compared users levels of online activity and the amount of information disclosed to the user's general tendency to risk taking behaviours and the participant's personal experience of cyberstalking victimisation. They found levels of online information disclosure to be a good predictor of the risk of cyberstalking victimisation. Social engineering techniques such as E-mail phishing are a common technique used by

cybercriminals and often use information gained from social network sites to make phishing mail more effective. Helevi, Lewis & Memon (2013) have shown that personality traits are positively correlated with both the likelihood of responding to phishing mails and with the tendency to share personal information online. Overall they found that users who scored high on the openness trait had the least concerns for online privacy and posted the most information online. They found that users high in neuroticism were most likely to respond to phishing emails and levels awareness of the dangers of phishing were not correlated with actually being phished. The correlation between personality traits, Facebook privacy and the likelihood of responding to phishing mails suggests that personality traits are positively correlated with vulnerability to cybercrime and the tendency to share information online (Halevi et al., 2013). This study further shows that Facebook privacy awareness is a good measurement of overall online privacy and security awareness. In addition to the propagation of personal data to other users of the social network, the sites themselves also make use of the information for marketing purposes in addition to selling the information to third parties. The business model of social networking sites depend on the use of disclosed information for commercial purposes such as advertising (Thelwall, 2009). Blaha (2013) found that users did not trust Facebook to preserve data in line with the applied settings and felt that their information was shared more widely than those indicated. Blaha (2013) further found that the levels of trusts users had in Facebook's use of their data and their expectations for how long Facebook held their data and a direct impact on the amount and nature of information they share online. Users who believed Facebook held information indefinitely were less likely to post sensitive information. Information sharing and use is an integral part of social networks, as users do not pay for the service this is the company's source of revenue and the ultimate purpose of the social networking site. Studies such as

Pitkänen & Tuunainen (2012) discovered a low level of awareness of the risk related to information disclosure. They also found a low level of concern for the risks and found most users considered privacy risks on Facebook to be lower than the risks on the general internet.

In addition to the shift of internet usage to social network related sites (commonly called Web 2.0) there has been an increasing move from static desktop computers to mobile devices such as smartphones, laptop computers and tablets. These new media are fast becoming the main access to social networking sites. Mobile devices make it easier to access and post information (increasing the risk of posting in inappropriate circumstances), while at the same time making it more difficult to manage the user's privacy settings. Gorzig and Frumkin (2013) found that the threats of cyberbullying were increasing with the capabilities and access of mobile devices. They further found that the always on nature of mobile devices presented a characteristic which increased the negative consequences of being cyberbullied. As the mobile phone is constantly on, used on the go and is normally carried with the user there is limits on the time, location and frequency when the victim can be bullied by mobile. Facebook and other social network sites have been working hard to build their mobile user base and purchased Whatsapp for \$19 billion in February 2013 an indication of how important the mobile medium is to social media companies. The office for national statistics in the UK as said that in 2011 71% of 16-24 year olds accessed the internet via a mobile phone a 44% increase in this demographic from 2010. It is thus important to understand the connection between individual personality traits to provide security advice to users on how best to protect themselves from unwelcome consequences of cyberbullying.

Measures of online personality have been shown to be correlate highly with offline personality (Blumer & Doering, 2012; Gosling et al., 2011). As these studies have supported the

view that online manifestation of personality correlates highly with offline personality the use of standard measures of offline personality constructs can be applied to our online personality. The present study will investigate how personality traits correlate with awareness and implementation of social network privacy settings as a method of controlling online information sharing and self-presentation.

Bulgurcu, Cavusoglu and Benbasat (2010) investigated the links between security awareness and rationality-based beliefs. Levels of security awareness were seen to be linked to the benefits of compliance, the cost of compliance and the cost of non-compliance. Users join and use social networking sites in order to post information about themselves and to learn information about others, the more information users share the more they connect on the social networking site but the users have to balance these benefits with the potential costs of exposing their information to unintended recipients and the potential miss-use of this information. The psychological constructs used in this study, extraversion, neuroticism, self-monitoring and narcissism are important in the users choice between the benefits of sharing information and the conflicting interest of privacy. Subjects were heavily influenced by their self-efficacy to comply and the normative levels of compliance. Applying this to online activity user's level of knowledge of the privacy controls and their level of computer knowledge will influence their ability to apply privacy controls. The motivation to use social networks is to connect with others and share information e.g. Pettijohn, LaPiene and Horting (2012), found that individuals high on Narcissism had a greater number of Facebook friends. While they found that the nature of connections and the size of a user's social network were correlated with the constructs of narcissism and Extraversion these factors did not have a significant effect on the level of Facebook intensity (duration and levels of use). "Individuals who consider friends and friend

relationships important to their esteem are more actively engaged and emotionally connected using Facebook” (Pettijohn et al, 2012, p. 2). Applying the findings of Belgurcu et al. (2010), related to the cost of compliance and the cost of non-compliance to the online setting. The cost of compliance is the limitation on how far posted information can be shared potentially restricting the growth of the users social networking and the cost of non-compliance can be equated to the risks association with the miss use of information such as cyber bullying etc.

Extraversion and neuroticism are two of the big five personality traits according to the five factor model of McCrae and Costa (1987), the other three constructs being agreeableness, openness to experience and conscientiousness. According to the model individuals high in extraversion are “sociable, active, talkative, person-orientated, optimistic, fun loving and affectionate” (Pervin and Cervone, 2010. P. 260). Due to these traits it is expected that individuals high on extraversion will have low awareness and concern for privacy settings and will have a goal of creating many online friends with which they will share a lot of information. Korzaan & Boswell (2008) tested the hypothesis that extraversion would have a negative impact on concerns for information privacy, i.e. they felt that those high on extraversion would have a greater concern for privacy awareness. Their results did not support their hypotheses and the actual results are in line with the proposed hypothesis of greater concerns for privacy awareness amongst those on the introversion pole of the construct.

Pervin and Cervone (2010), describe individuals high on neuroticism as worrying, nervous, emotional, insecure, inadequate and hypochondrial. Based on these characteristics it is hypothesized that individuals who measure high on these traits will have a high level of awareness for privacy settings and will place increased though on how they are perceived online.

When investigating the application of privacy settings on Smartphones Uffen, Kaemmerer and Breitner (2013) hypothesized that there would be a negative correlation between Neuroticism and the application of privacy controls they based this on previous studies which had shown users high in Neuroticism avoid taking control of a situation. The same study found users high on Extraversion will be motivated by the desire to gain social status and will not implement privacy controls even when they understand the importance.

To measure the constructs of neuroticism and extraversions this study will use the 44 question version of the big five inventory (John & Srivastava, 1999). As only two of the five personality traits are being measured only the questions related to the traits of extraversion and Neuroticism will be included.

Self-monitoring is “A personality characteristic defined as the degree to which people are sensitive to the demands of social situations and shape their behaviours accordingly.” (Smith & Mackie, 2007, p. 124). In an online setting have individuals high in self-monitoring have greater scope to control how they are presented, privacy settings provide control on who can see they information. Wallace, Buil, de Chermatony and Hogan (2014) found the users high in self-monitoring were more likely to be selective on Facebook, presenting themselves as a brand and have a high interest in receiving Facebook Likes as positive feedback for their posts. As these individuals are sensitive to how they are perceived it is hypothesised that they will have a greater awareness of online privacy and how it can effect who can see what information they post. Self-monitoring refers to the process whereby individuals regulate their own behaviour to showcase traits that are desirable and perceived favourably by others (Snyder, 1974 as cited in Rosenberg & Egbert, 2011). Lin (2008) found that characteristic of self-monitoring was a key trait in moderating users interaction with online web portals, privacy settings give the high self-monitor

an increased acceptance of Facebook because it gives them a sense of control over their interaction. It is thus predicted that high self-monitors will have increased interest in privacy controls. To measure self-monitoring this study will use the 25 question self-monitoring scale developed by Mark Snyder (1974). This scale or the abbreviated 18 item scale by the same author has been used in numerous internet related studies of self-monitoring (e.g. Yates & Noyes, 2007; Jeffrey & Natalie, n.d.).

The final personality construct measured in this study is Narcissism using the NPI-16 measure of subclinical narcissism. Pervin and Cervone (2010) describe the definition of narcissism of varying among the psychodynamic theorists but say the term generally applies to investing mental energy in the self. Individuals high on Narcissism will be concerned with presenting a positive self-image of themselves and will have a requirement to seek the admiration of others. A common technique used in social networking sites is for other users to tag a comment or post as liked or to forward the post essentially sharing this information with other users, the act of being publically liked would appeal to narcissist and encourage them to share more information. Kpadzic (2013), found that narcissism had a significant impact on user profile picture selection on Facebook; Pettijohn (2012), found that narcissism has an impact on the amount of Facebook friends. These two studies show that subjects measuring high on narcissism will be concerned with self-presentation online and it is hypothesized that they will have high privacy awareness as this is an important factor in controlling the visibility and nature of information they post.

To measure privacy awareness a generalised belief measure (GBM) will be used. This will provide a measure of the individual's attitude to privacy. While there are many studies on online privacy awareness (e.g. Hazari & Brown, 2013; Hong & Thong, 2013) most studies used

questions designed specifically for the purpose and lacked the validity and reliability measures needed for this study. The GBM can be used to measure any sort of belief and in most cases users can expect an Alpha reliability of .9 (McCroskey, 2006). In this case it will measure participant's belief in the importance of online data privacy. The results of this scale will be used in the study as a measure of privacy awareness.

In addition to the questionnaire measuring the personality constructs and the general awareness a qualitative question is presented relating to whether or not the users trust the social network site to preserve their data in line with the security settings they apply. According to Hong and Thong (2013), trust in online privacy controls relates to the expectation the users has that the site will handle their information in line the users perception of how they should handle it as define by the chosen controls. Hazari and Brown (2013) studied the relationship between security knowledge and privacy awareness and found a weak negative correlation. They also found that both security knowledge and privacy awareness levels increased with age. In this study a number of standalone questions will also be used to assess the participant's knowledge and implementation of actual security settings. The link between these settings and the personality trait of Extraversion will be investigated.

Rationale

Motivations for using social networking sites and sharing information are strongly related to enhancing social relationships and connecting with others (Jang Hyun, Min-Sun & Yoonjae, 2010). In order to satisfy these goals users need to share personal and interesting information, behaviors which conflict with privacy and controlling access to personal information. Users high in Extraversion and Narcissism are likely to be more interested in the social benefits of networking sites and sharing information resulting in low relative privacy concerns. Users high

in self-monitoring and Neuroticism are by contrast more likely to view the privacy controls more important in controlling the visibility of personal information.

Understanding how personality traits influence the level of online privacy awareness and control the amount and nature of information shared online is important in order to ensure default privacy controls provide adequate levels of protection to individuals from abuse of that information which may lead to bullying, cyber stalking, identity theft etc. This study will use the Big five inventory (John & Srivastava, 1999), Self-monitoring scale (Snyder, 1974), NPI-16 measure of narcissism (Ames, Rose & Anderson, 2006), and a generalized belief measure (McCroskey & Richmond, 1996) to investigate how personality constructs of extraversion, neuroticism, self-monitoring and narcissism are correlated with privacy awareness and the application of privacy settings.

There is a significant amount of research on levels of Facebook use, how people present themselves online and the relationship between online presentation and personality. This study looks at online activities and presentation from the perspective of privacy. Online privacy is a relatively new concept and has no direct offline equivalent. Controlling access to personal information offline is relatively simple, online this is a much more abstract and complicated topic. The research will investigate if personality traits correlate with greater understanding and application of online privacy controls. Understanding of this correlation would provide the first step to understanding the motivation for application of privacy controls and other methods of controlling online presentation.

Studies have shown that privacy awareness has little impact on changing actual behaviours online (e.g. Debatin, Lovejoy, Horn and Hughes, 2009; Malandrino, Scarano &

Spinelli, 2013). Malandrino et al. (2013) however demonstrated that appropriately designed tools which alert users when they are exposing sensitive information and inform them of the consequences were affective in changing behaviour. Understanding what information is important to which user would be important in the development of these tools. In addition to use in cyberbullying data presented online can also be used in such areas as identity theft and social engineering. Understanding how individuals relate to and apply security controls is important in identifying vulnerable individuals, developing and targeting appropriate education.

Hypotheses

This research will mainly focus on the correlation of the four psychological constructs of Extraversion, Neuroticism, Self-monitoring and narcissism with privacy awareness. These characteristics will be tested individually and in combination using multiple regression. The research will also compare the participants implementation of individual security controls and the personality trait of extraversion.

Hypothesis 1

There will be a significant correlation between extraversion and privacy awareness.

Hypothesis 2

There will be a significant correlation between neuroticism and privacy awareness.

Hypothesis 3

There will be a significant correlation between self-monitoring and privacy awareness.

Hypothesis 4

There will be a significant correlation between narcissism and privacy awareness.

Hypothesis 5

There will be a significant correlation between privacy awareness and the combined effect of extraversion, neuroticism, self-monitoring and narcissism.

Hypothesis 6

There will be a significant difference in extraversion between users who use specific privacy controls.

Method

Participants

The participants were Facebook users over 18 years of age. The total number of participants was 84 (32 male and 52 female). Snowball sampling was used by posting on Facebook and Twitter requesting users to both participate themselves and invite others to participate. Apart from age the study did not place any restrictions on the Facebook users who could respond. The questionnaire was limited to Facebook users as the privacy controls chosen for measurement were the privacy controls within the Facebook application and the questions queried the users knowledge of and choice of these controls. Participants were asked to volunteer to fill out the questionnaire and no incentives were used.

Design

This research was a quantitative design using correlation for hypotheses 1 to 5 and a cross sectional design for hypotheses 6. Correlation was used to examine the relationship between attitudes to online privacy as measured by the general belief measure and the four constructs of extraversion, neuroticism, self-monitoring and narcissism. Multiple regression was used to determine the correlation of the combined effect of the four constructs and the user's general attitude to online privacy. A cross-sectional design was used to measure the difference in extraversion scores of those choosing various privacy controls.

Materials

A questionnaire was created in SurveyMonkey requesting general demographic information, gender and age (over or under 18). A number of standalone questions asked where used to query which options users had chosen for the privacy controls available in the Facebook application (these questions are included in appendix A). The user's attitude to privacy awareness and their scores on the four psychological constructs were collected via

SurveyMonkey using the four questionnaires described later in this section. No information which could identify an individual respondent was collected; a common link to the survey was used by all participants resulting in anonymous survey. The questionnaire consisted of 56 questions in total and participants were required to answer all questions.

Big 5 inventory

To measure extraversion and neuroticism the 44 question version of the Big 5 Inventory BFI (John & Srivastava, 1999) was used. The BFI consists of 8 questions each for the traits of Extraversion, Neuroticism and Openness and 9 questions each for the traits of Agreeableness and Conscientiousness. Each question is answered on a five-point Likert scales ranging from disagree strongly to agree strongly. McAbee and Oswald (2013), reported the reliability of the 44 item version of the BFI to be .86 from extraversion and .87 for neuroticism. The questionnaire included the questions in the BFI related to Extraversion and Neuroticism only. The questions used from the BFI were 1, 6, 11, 16, 21, 26, 31 and 35 to measure Extraversions and questions 4, 9, 14, 19, 24, 29, 34 and 39 which measured Neuroticism. In order to calculate the scores questions 6, 21, 31, 9, 24 and 34 were reverse scored into new variables as follows RECODE big5_6 big5_21 big5_31 big5_9 big5_24 big5_34 (1=5) (2=4) (3=3) (4=2) (5=1) INTO big5_6r big5_21r big5_31r big5_9r big5_24r big5_34r. The overall score for each of the two constructs were calculated by taking the mean score of the appropriate variables.

Self-Monitoring Scale

To measure self-monitoring the Self-monitoring scale (Snyder, M. 1974) was used. Snyder (1974) reported the test-retest reliability of this scale to be .83 and noted for validity that those who scored high in self-monitoring where also rated higher in peer evaluation of their ability to behave appropriately in new situations and to have high levels of self-control both traits

consistent with high self-monitoring. The self-monitoring scale consists of 25 questions such as *“When I am uncertain how to act in a social situation, I look to the behaviour of others”*. Participants mark the question True (T) if it is true or mostly true when applied to themselves. Participants mark the question as False (F) if it is false or mostly false when applied to themselves. Participants must answer each question. For each question participants were given a score of 1 when their answer was consistent with high self-monitoring and a score of 0 where their answer was inconsistent with self-monitoring. The replies were recoded in SPSS using the following syntax RECODE sm1 sm2 sm3 sm4 sm9 sm12 sm14 sm17 sm20 sm21 sm22 sm23 (1=0) (2=1).RECODE sm5 sm6 sm7 sm8 sm10 sm11 sm13 sm15 sm16 sm18 sm19 sm24 sm25 (1=1) (2=0) and overall score for self-monitoring was computed by adding the results of all scores using the syntax COMPUTE sm_total=SUM(sm1,sm2,sm3,sm4,sm5,sm6,sm7,sm8,sm9,sm10,sm11,sm12,sm13,sm14,sm15,sm16,sm17,sm18,sm19,sm20,sm21,sm22,sm23,sm24,sm25). Participants who score between 15 and 22 are considered to be high in self-monitoring, scores between 9 and 14 are considered intermediate while those who score below 9 are considered low in self-monitoring.

NPI-16 subclinical narcissism

To measure Narcissism the NPI-16 (Ames et al., 2006) was used. The NPI-16 is an abbreviated version of Raskin and Terry’s (1998), 40 item measure of narcissism. Gentile et al, (2013) compared the results of the NPI-16 with NPI-40 and found it comparable in terms of convergent and discriminant validity and demonstrated adequate overall reliability (.80). The scale consists of 16 questions each with two possible answers, the participants chooses the answer based on the following instruction “Read each pair of statements below and place an “X” by the one that comes closest to describing your feelings and beliefs about yourself.” (Ames et

al., 2006). The questionnaire required that users answer all 16 questions. The participant's responses were recoded in SPSS a score of 1 was given for all answers consistent with narcissism and a score of 0 was given for all scores inconsistent with narcissism. The following SPSS syntax was used to recode RECODE sn1 sn3 sn6 sn8 sn9 sn11 sn14 sn16 (1=1) (2=0).RECODE sn2 sn4 sn5 sn7 sn10 sn12 sn13 sn15 (1=0) (2=1). A total score was computed by adding the scores for all questions as follows COMPUTE npi16=SUM(sn1,sn2,sn3,sn4,sn5,sn6,sn7,sn8,sn9,sn10,sn11,sn12,sn13,sn14,sn15,sn16).

Generalised Belief Measure

This measure is used to assess the participant's general belief about online data privacy. The Generalised Belief Measure GBM (McCroskey & Richmond, 1996) was used. This measure has been used in a number of studies and has consistently been shown to have a reliability above .90. "Results of the previous research indicate that the measures are highly reliable (alpha estimates above .90) and have strong face, concurrent and predictive validity (McCroskey, 2006).The participant is presented with the statement "The importance of online data privacy controls" and then asked to indicate how their feelings about the statement given two adjectives e.g. negative or positive. Users select for 1 for strong feeling for the first adjective to 7 a strong feeling for the second adjective. Questions 1, 3 & 4 are reverse scored and a total score is computed by adding the scores for all 6 questions. RECODE gb1 gb3 gb4 (1=7)(2=6) (3=5) (4=4) (5=3) (6=2) (7=1) INTO gb1_r gb3_r gb4_r.
COMPUTE gb_total=sum(gb2,gb5,gb6,gb1_r,gb3_r,gb4_r.

Facebook privacy questions

Stand-alone questions queried the participant's choice of privacy controls within Facebook, the user's opinion on how Facebook would use their information and their general level of satisfaction with the privacy controls available. The results of these questions were compared with the results of previous studies (e.g. Blaha, 2013). The specific privacy settings chosen were used to group the participants for comparison against their levels of extraversion. Participants could select a single answer from the list of possible answers. The possible answers are an exact match to the possible settings within the Facebook application.

Question 1

Do you believe when you give post information using social media sites such as Facebook and Twitter that the social media sites will limit use of your information to the agreed purposes only?

Possible answers: True, False or not sure.

Question 2

In Facebook you have set the privacy on "Who can see future posts?" to?

Possible answers: Public, Friends, Friends and Acquaintances, Only me, Custom, Don't know

Question 3

In Facebook who can send you friend requests?

Possible answers: Everyone, Friends of friends or Don't know

Question 4

In Facebook who can look you up using the email address you provided?

Possible answers: Everyone, Friends, Friends of friends or Don't know

Question 5

In Facebook do you allow search engines to link to you profile?

Possible answers: Yes, No or Don't know

Question 6

Select the option which best matches your view of the statement "Overall I am happy with the privacy controls available in Facebook."

Possible answers: Agree Strongly, Agree a little, Neither agree nor Disagree, Disagree a little or Disagree strongly.

Procedure

Participants were invited to take part in the survey by posting on Facebook pages and twitter feeds. The posts included a link to the questionnaire on SurveyMonkey the same link was provided to all users. Participants were invited to share the link with any other user they thought would be willing to complete the questionnaire. On visiting the link users were given a brief overview of the questionnaire purpose and were supplied with links and E-mail address if they experienced any problems or needed further information. The users were given an indication that the survey would take 10 minutes or less and would be completely anonymous. The users were informed that they could quit the questionnaire at any time but because the responses were anonymous it was not possible to withdraw response once made.

Results

All statistics were completed on IBM SPSS 21 for windows. For Hypothesis 1 to 5 the criterion variable was the general belief measure. For hypothesis 1-4 linear regression was used as the criterion variable was predicted from a single predictor variable. For Hypothesis 5 the criterion was predicted from four predictor variables so a multiple regression was used. The criterion variable was tested and found not to meet the requirements for parametric tests. A Shapiro-wilk was performed on the General Belief measure (privacy awareness) showed a significance of .000, the shape of the histogram was examined and confirmed that the data was not normally distributed

For hypothesis six a One-way Anova was used and analysed the participant's responses grouped by their response choice to the privacy control settings to investigate if there was a significant difference in Extraversion scores by answer chosen.

Descriptive Statistics

Table 1.

Descriptive statistics for personality constructs

Variable	Mean	SD	Skewness	Kurtosis
Extraversion	3.45	.77	-.17	-.42
Neuroticism	2.69	.80	.07	-.78
Self-monitoring	11.51	4.14	.24	-.81
Narcissism	3.69	2.94	.78	-.24
Privacy awareness	25.94	3.68	-.73	-.05

Note SD = Standard Deviation

This table gives an overview of the means and standard deviations of the calculated totals for each of the personality constructs in the studies as well as for the calculated results of the generalised belief measure of privacy awareness. The Skewness and Kurtosis values are including to indicate the relationship of the data to a normal distribution.

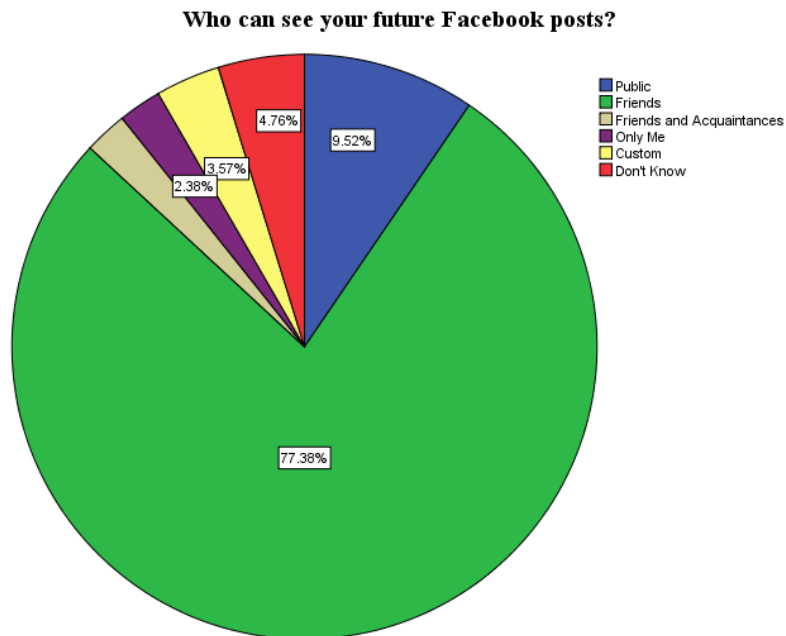


Figure 1

This chart shows the distribution of answers participants gave for the privacy setting ‘Who can see your future posts?’ The majority of users (77.38%) said that they had chosen the second most restrictive setting limiting future post visibility to Friends only.

For the question on who can send you Facebook requests 56 participants (66.7% of the total) said that everybody can send them friend requests. 20 participants (23.8% of the total) said that only Friends of Friends could send them friend requests while participants or 9.5% of the total said they did not know who could send them friend requests.

Table 2

Who can look you up by the e-mail address you provided?

Privacy setting	Number who selected	Percentage who selected	Cumulative %
Everyone	20	23.8%	23.8%
Friends of Friends	9	10.7%	34.5%
Friends	38	48.2%	79.8%
Don't know	17	20.2%	100%

Table 2 shows the distribution of answers participants gave to the question on who can look them up by the E-mail they provided. The most popular setting was for Friends only (48%). This is not the default setting in Facebook.

7 participants or 8.3% of the total said that they allowed search engines link to their profile while 47 participants of 56% of the total said they did not allow search engines link to their profile. 30 users or 35.7% of the total did not know if search engines could link to their profile or not.

Participants opinion of the statement "Overall I am happy with the privacy controls available in Facebook."

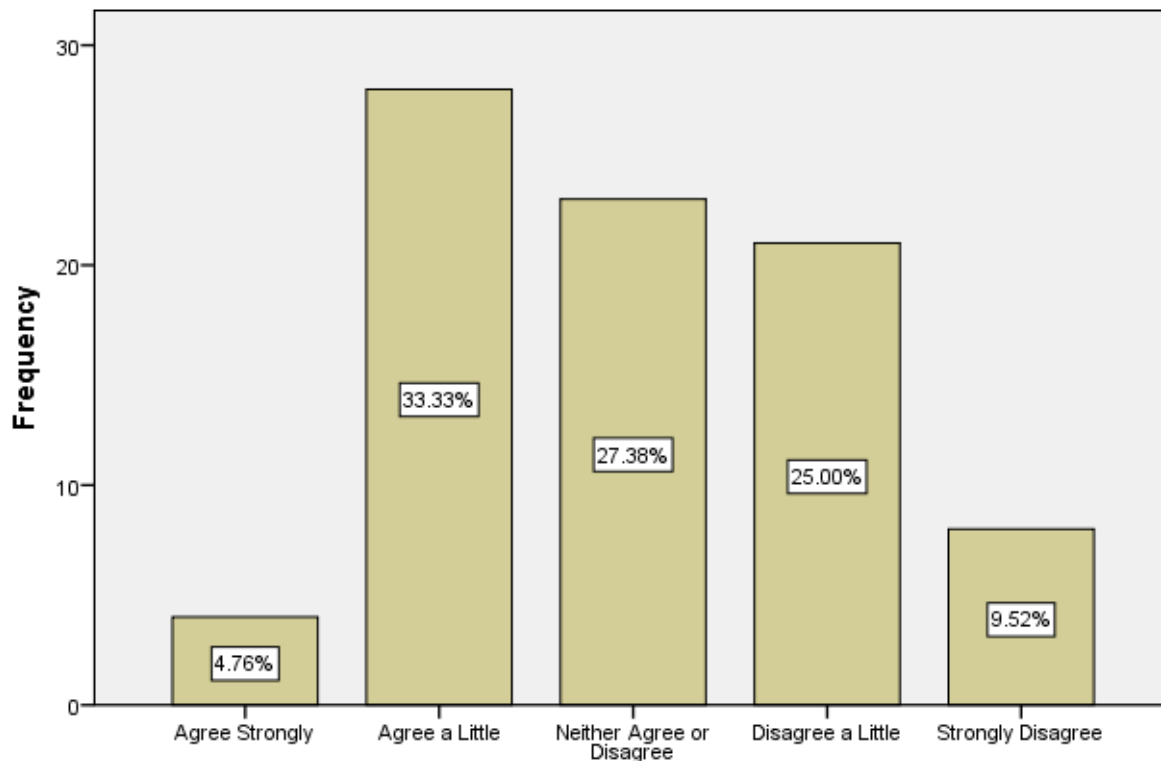


Figure 2

This bar chart shows the distribution of responses to participant view on the adequacy of the privacy controls available in Facebook. One 4.7% of users agrees strongly with the statement with the general trend being towards users being unhappy with the controls available.

Inferential Statistics

Hypothesis 1: There will be a significant correlation between extraversion and privacy awareness. A Spearman's rho correlation found that there was no significant association between extraversion and privacy awareness ($r_s(71) = 0.15, p = .212$).

Hypothesis 2: There will be a significant correlation between neuroticism and privacy awareness. A scatter plot conducted with a predictor variable of Neuroticism (x-axis) and a criterion variable of security awareness (gb_total, y-axis) indicated a negative correlation of the variables with $R^2 = .136$ indicated 13.6% of the variance was explained.

The mean scores for neuroticism was 2.69 (SD = .8) and for general belief was 25.94 (SD = 3.68). A Spearman's rho correlation found that there was a moderate negative significant relationship between neuroticism and general belief ($r_s(71) = -0.35, p < .01$). Therefore the null hypothesis is rejected.

Hypothesis 3: There will be a significant correlation between self-monitoring and privacy awareness. A Spearman's rho correlation found that there was no significant association between self-monitoring and privacy awareness ($r_s(71) = 0.18, p = .16$).

Hypothesis 4: There will be a significant correlation between narcissism and privacy awareness. A Spearman's rho correlation found that there was no significant association between narcissism and privacy awareness ($r_s(71) = 0.77, p = .04$).

Hypothesis 5: There will be a significant difference in extraversion between users who use specific privacy controls.

In order to complete a multiple regression test the conditions for parametric data must be met. The criterion variable did not meet these requirements and multiple regression could not be run.

Hypothesis 6: There will be a significant difference in extraversion between users who use specific privacy controls and does who do not.

As part of the questionnaire users were asked what they choose for the setting of who can send you friend requests. The possible answers were, everyone, friends of friends or don't know. Each of these responses were considered a group for the purpose of comparing against extraversion scores. A one-way analysis of variance showed that there was no significant difference between the three groups in levels of extraversion ($F(2, 81) = .25, p = .777$).

As part of the questionnaire users were asked what they choose for the setting who can look you up via the email you provided. The possible answers were, everyone, friends of friends, friends or don't know. Each of these responses were considered a group for the purpose of comparing against extraversion scores. A one-way analysis of variance showed that there was no significant difference between the three groups in levels of extraversion ($F(3, 81) = .54, p = .656$).

As part of the questionnaire users were asked what they choose for the setting do you allow search engines link to your profile. The possible answers were yes, no, or don't know. Each of these responses were considered a group for the purpose of comparing against extraversion scores. A one-way analysis of variance showed that there was no significant difference between the three groups in levels of extraversion ($F(2, 81) = .04, p = .059$).

Discussion

The aim of this study was to investigate how attitudes and awareness of online data privacy was related to four psychological constructs. The correlation between privacy awareness and the four psychological constructs of extraversion, neuroticism, self-monitoring and narcissism was investigated. The study hypothesised that there would be a significant correlation between all four constructs and privacy awareness. The study supported the second hypotheses and found a moderate negative significant correlation between neuroticism and privacy awareness but rejected hypotheses 1, 3 and 4 and thus found no significant correlation between extraversion, self-monitoring or narcissism and privacy awareness. Hypothesis 5 could not be tested as the data did not meet the requirements to perform multiple regression. Hypothesis 6 was also rejected and no significant difference was found in extraversion scores between users who chose different privacy settings.

Extraversion

There was no significant correlation between extraversion and privacy awareness. Korzaan & Boswell (2008) hypothesised that users high in extraversion would have greater concerns for privacy awareness. Their study rejected this hypothesis and found that greater levels of introversion predicted levels of privacy awareness. This study did not replicate the findings of Korzaan & Boswell (2008). Hypothesis 1 predicting a significant correlation between Extraversion and privacy awareness was thus rejected.

Neuroticism

There was significant negative correlation between neuroticism and privacy awareness found in this study. This is consistent with the findings of Uffen et al. (2013), which found a negative correlation related to the privacy controls on Smartphones. Halevi et al. (2013), found that users high in Neuroticism were most likely to respond to phishing mails and that knowledge

of the phishing was not a significant factor in determining who would fall for a phishing attack.

Hypothesis 2 predicting a significant correlation between neuroticism and privacy awareness was thus accepted.

Self-monitoring

Lin (2008), showed that users high in self-monitoring mediated their behaviour to online web portals in significantly different ways to low self-monitors. This study investigated the relationship between self-monitoring and privacy awareness. Privacy controls represent the best way for users to moderate their interaction with Facebook and thus a significant correlation was predicted. This study however failed to find a significant relationship and thus hypothesis 3 predicting a significant correlation between self-monitoring and privacy awareness was thus rejected.

Narcissism

Previous studies such as Pettijohn (2012), had shown that users high in Narcissism had a large amount of Facebook friends and studies had shown that these users were careful in choosing the information that they would post in particular the choice of photographs mainly the profile photo (Kpadzic, 2013). Privacy settings are important in controlling who can see your information and as users high in Narcissism are interested in these aspects of self-presentation it was hypothesised that they would consider privacy important and have a good level of knowledge of privacy controls. This study however found no significant correlation between user's narcissism scores and score on privacy awareness. Hypothesis 4 predicting a significant correlation between Narcissism and privacy awareness was thus rejected

Facebook Privacy settings

Consistent with the finding of Blaha (2013), users did not have a high level of trust in the social networking sites to limit its use of their information to the agreed purposes only. 36.9% of users did not believe that the social networking site would limit the use of posted data for the agreed purposes only while 33.3% believed they would and 28% were not sure.

This study did not find a significant difference in levels of extraversion in users selecting different privacy controls on Facebook. Thus hypothesis 6 was rejected.

Strengths and Weaknesses

This study did find that overall participants considered online privacy important. The generalized belief measure had a possible range of scores from 0 to 42 with higher scores indicated a greater belief in the importance of online privacy. The mean score was 25.49 and a standard deviation of 3.68. The scores were also negatively skewed (Skewness -0.73), with the second most common score being 30 (14 participants).

Participants also demonstrated a general mistrust of social networking sites on how they would use their data and a greater number of participants unhappy with the privacy controls available than those happy. Both these findings suggest that there would be interest from users in general in having tighter control on the use of their personal information and in having greater control on the privacy settings they could select.

Of the 84 users who completed all or part of the survey 13 users (16.25% of the total) exited the survey when they encountered the general belief questions. This indicates that these questions were poorly understood by the participants. The general belief measure was used in the absence of any published online security scale with proven reliability and validity. The generation of such a scale is important to facilitate future study in this area. The accuracy of the

general belief measure in accurately capturing participant's levels of privacy awareness is a major limitation of the existing study.

The questionnaire used in this study did not capture information related to the age of the participants (users had to be over 18 but no other information was collected. Hazari and Brown, (2013) analyzed measures of privacy awareness by age and did find significant differences with users over the age of 30 being significantly more aware of data privacy issues than users under 30. While this study found a significant relationship for neuroticism this may be more significant at some age groups than others, the other constructs while not found to be significant in the overall population may have significance with some age groups.

Participants were asked to report the privacy controls they had selected in Facebook to the best of their knowledge. This method was chosen as it would be difficult and time consuming for users to look up the actual settings during completion of the questionnaire. In the study by Pitkänen and Tuunainen (2012), it was found that the majority of users either did know or did not understand the Facebook privacy policies. It is thus likely the most users did not know what their actual settings were and the reported setting may be more of a reflection on what they believe they would have chosen than the setting actually in place. Facebook does not encourage users to change settings from the default. Users would have to purposely find the configuration and modify the settings if they actually wanted to change from the default. It is thus likely that the privacy settings reported presented a more restrictive view than what is actually in place.

Future research

The present study was for all Facebook users over 18 years of age future studies could investigate any age related variation in the results. In terms of neuroticism where there was a negative correlation with privacy awareness further detail on how this may vary would be

important. The negative consequences of inadequate privacy such as cyberbullying, cyberstalking, identity theft and social engineering have different levels of prevalence and different consequences at different ages. To best design privacy awareness campaigns and target the information appropriately it is important to know what ages, and types of individuals are most at risk.

In terms of the constructs extraversion, self-monitoring and narcissism where no significant correlation was found it would be important to understand why these constructs are not correlated with privacy awareness overall and further investigate if there is any age related significant correlation for these constructs.

The generation of a scale with proven validity and reliability to measure levels of privacy awareness and privacy concerns in online environment, particularly social networks is important to provide a common measure for research.

Debatin et al. (2009) found that privacy awareness alone was not effective in changing a user's behaviour online. In the study by Malandrino et al. (2013), the lack of behaviour change found by Debatin et al. (2009) was supported but it was found that users online behaviour was changed successfully using tools that gave the user feedback on the information they were exposing to third parties in real time. Feedback related behaviour change is likely to be correlated with psychological constructs e.g. high self-monitors are likely to use this information to alter how they are presented online. This is an area that should be studied further in relation with the aim of improving online privacy behaviour.

Conclusion

Social networks continue to grow and evolve with more users, platforms and features than ever before. Stieger, S., Burger, C., Bohn, M., & Voracek (2013) investigated the main reasons why user left Facebook and found privacy concerns were the major motivating factor for those who left. The CEO of Facebook claimed that privacy is an outdated social convention (Steiger et al., 2013) showing the difference in the privacy concerns of users and the interests of the social network.

Consistent with offline social environments numerous studies have shown that interaction with social network is influenced highly by their personality traits. Users high in self-monitoring are likely to consider carefully the data they put online in order to present themselves favourably, users high in narcissism are likely to present a positive picture of themselves e.g. Kapidzic (2013) showed that narcissism was a significant predictor of motivation in selecting profile pictures that emphasised physical attractiveness, users high in extraversion are likely to have a wide range and large number of friends and users high in neuroticism are likely to be concerned with online presentation (e.g. Pettijohn, 2012). With the large amount of data shared online users increase the likelihood of becoming the victim of bullying, identity theft or social engineering it is important to identify who is most at risk. This study has shown that there was a moderate negative correlation between neuroticism and privacy awareness. However no correlation between the other constructs and privacy awareness or the controls designed to protect and restrict access to their information was found.

The study also showed that there was a general high level of awareness of privacy controls and concern for how information was used by social networking sites. The study found that levels of controls selected were not predicted by the personality trait of extraversion. This

study is a contribution to determining the effects of personality traits on online privacy. Further investigation of these and other traits are important in order to develop tools and education which can change online behaviour in a pro privacy manner.

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Appendix

BIG 5 INVENTORY

How I am in general

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who *likes to spend time with others*? Please write a number next to each statement to indicate the extent to which **you agree or disagree with that statement.**

1	2	3	4	5
Disagree Strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly

I am someone who...

- _____ Is talkative
- _____ Tends to find fault with others
- _____ Does a thorough job
- _____ Is depressed, blue
- _____ Is original, comes up with new ideas
- _____ Is reserved
- _____ Is helpful and unselfish with others
- _____ Can be somewhat careless
- _____ Is relaxed, handles stress well.
- _____ Is curious about many different things
- _____ Is full of energy
- _____ Starts quarrels with others
- _____ Is a reliable worker
- _____ Can be tense
- _____ Is ingenious, a deep thinker
- _____ Generates a lot of enthusiasm

17. _____ Has a forgiving nature
18. _____ Tends to be disorganized
19. _____ Worries a lot
20. _____ Has an active imagination
21. _____ Tends to be quiet
22. _____ Is generally trusting
23. _____ Tends to be lazy
24. _____ Is emotionally stable, not easily upset
25. _____ Is inventive
26. _____ Has an assertive personality
27. _____ Can be cold and aloof
28. _____ Perseveres until the task is finished
29. _____ Can be moody
30. _____ Values artistic, aesthetic experiences
31. _____ Is sometimes shy, inhibited
32. _____ Is considerate and kind to almost everyone
33. _____ Does things efficiently
34. _____ Remains calm in tense situations
35. _____ Prefers work that is routine
36. _____ Is outgoing, sociable
37. _____ Is sometimes rude to others
38. _____ Makes plans and follows through with them
39. _____ Gets nervous easily
40. _____ Likes to reflect, play with ideas
41. _____ Has few artistic interests
42. _____ Likes to cooperate with others
43. _____ Is easily distracted
44. _____ Is sophisticated in art, music, or literature

END OF BIG 5 INVENTORY

SELF-MONITORING SCALE

Developed by Mark Snyder (1974)

DIRECTIONS: The statements below concern your personal reactions to a number of different situations. No two statements are exactly alike, so consider each statement carefully before answering. IF a statement is TRUE or MOSTLY TRUE as applied to you, **circle the "T"** next to the question. If a statement is FALSE or NOT USUALLY TRUE as applied to you, **circle the "F"** next to the question.

(T) (F) 1. I find it hard to imitate the behavior of other people.

(T) (F) 2. My behavior is usually an expression of my true inner feelings, attitudes, and beliefs.

(T) (F) 3. At parties and social gatherings, I do not attempt to do or say things that others will like.

(T) (F) 4. I can only argue for ideas which I already believe.

(T) (F) 5. I can make impromptu speeches even on topics about which I have almost no information.

(T) (F) 6. I guess I put on a show to impress or entertain people.

(T) (F) 7. When I am uncertain how to act in a social situation, I look to the behavior of others for cues.

(T) (F) 8. I would probably make a good actor.

(T) (F) 9. I rarely seek the advice of my friends to choose movies, books, or music.

(T) (F) 10. I sometimes appear to others to be experiencing deeper emotions than I actually am.

(T) (F) 11. I laugh more when I watch a comedy with others than when alone.

(T) (F) 12. In groups of people, I am rarely the center of attention.

(T) (F) 13. In different situations and with different people, I often act like very different persons.

(T) (F) 14. I am not particularly good at making other people like me.

(T) (F) 15. Even if I am not enjoying myself, I often pretend to be having a good time.

(T) (F) 16. I'm not always the person I appear to be.

(T) (F) 17. I would not change my opinions (or the way I do things) in order to please someone else or win their favor.

(T) (F) 18. I have considered being an entertainer.

(T) (F) 19. In order to get along and be liked, I tend to be what people expect me to be rather than anything else.

(T) (F) 20. I have never been good at games like charades or improvisational acting.

(T) (F) 21. I have trouble changing my behavior to suit different people and different situations.

(T) (F) 22. At a party, I let others keep the jokes and stories going.

(T) (F) 23. I feel a bit awkward in company and do not show up quite as well as I should.

(T) (F) 24. I can look anyone in the eye and tell a lie with a straight face (if for a right end).

(T) (F) 25. I may deceive people by being friendly when I really dislike them.

SCORING YOUR SELF-MONITORING QUESTIONNAIRE

Self-monitoring is the ability and desire to regulate one's public expressiveness to fit the clues and/or requirements of the situation.

SCORING KEY:

"T" and "F" (below) indicate responses of people who are high self-monitors. To calculate your self-monitoring score, place a check mark next to the questions that match the "T" and "F" responses below. Count the total number of "check" marks that appear in the margin of your survey. That number is your self-monitoring score.

A score that is between 0-12 would indicate that the respondent is a relatively low self-monitor; a score that is between 13-25 would indicate that the respondent is a relatively high self-monitor.

SURVEY RESPONSES OF PEOPLE WHO TEND TO BE HIGH SELF-MONITORS:

() (F) 1. I find it hard to imitate the behavior of other people.

() (F) 2. My behavior is usually an expression of my true inner feelings, attitudes, and beliefs.

(F) 3. At parties and social gatherings, I do not attempt to do or say things that others will like.

(F) 4. I can only argue for ideas which I already believe.

5. I can make impromptu speeches even on topics about which I have almost no information.

6. I guess I put on a show to impress or entertain people.

7. When I am uncertain how to act in a social situation, I look to the behavior of others for cues.

8. I would probably make a good actor.

(F) 9. I rarely seek the advice of my friends to choose movies, books, or music.

10. I sometimes appear to others to be experiencing deeper emotions than I actually am.

11. I laugh more when I watch a comedy with others than when alone.

(F) 12. In groups of people, I am rarely the center of attention.

(T) 13. In different situations and with different people, I often act like very different persons.

(F) 14. I am not particularly good at making other people like me.

(T) 15. Even if I am not enjoying myself, I often pretend to be having a good time.

(T) 16. I'm not always the person I appear to be.

(F) 17. I would not change my opinions (or the way I do things) in order to please someone else or win their favor.

(T) 18. I have considered being an entertainer.

(T) 19. In order to get along and be liked, I tend to be what people expect me to be rather than anything else.

(F) 20. I have never been good at games like charades or improvisational acting.

(F) 21. I have trouble changing my behavior to suit different people and different situations.

(F) 22. At a party, I let others keep the jokes and stories going.

() (F) 23. I feel a bit awkward in company and do not show up quite as well as I should.

(T) () 24. I can look anyone in the eye and tell a lie with a straight face (if for a right end).

(T) () 25. I may deceive people by being friendly when I really dislike them.

INTERPRETATION OF SCORES

In any setting, people are generally motivated to behave appropriately (Michener, Delamater, Schwartz, 1986, p. 192). People who are high in self-monitoring look for cues in the situation to tell them how to behave, whereas those who are low in self-monitoring use their own values and motives to guide their behavior.

(Michener, Delamater, Schwartz, 1986, pp. 334-335). Self-monitoring involves three major and somewhat distinct tendencies (Greenberg & Baron, 1990, pp. 204-206):

(1) the willingness to be the center of attention -- a tendency to behave in outgoing, extraverted ways

(closely related to the social skill of emotional expressiveness);

(2) Sensitivity to the reactions of others;

(3) ability and willingness to adjust behavior to induce positive reactions in others.

We can say that "self-monitoring" refers to a person's ability to adjust his or her behavior to external situational factors. Individuals high in self-monitoring show considerable adaptability in their behavior. They are highly sensitive to external cues and can behave differently in different situations. They are capable of presenting striking contradictions between the public persona and the private self. By contrast, low self-monitors can't disguise themselves this way; they tend to display their true dispositions and attitudes in every situation; hence, there is high behavioral consistency between who they are privately and what they do publicly (Robbins, 1993: 714).

High self-monitors are particularly sensitive to other people and alter their responses to others' cues. They are more flexible and responsive to their environment than low self-monitors are. For example, high self-monitors can be expected to demonstrate greater flexibility in adapting their leadership style to changing situations, using a variety of conflict-resolution techniques (Robbins, 1993: 714).

High self-monitors are people who readily adjust their own behavior to produce positive reactions in others and their actions are usually guided by the requirements of a given situation. They are different with different people and in different situations, compared to low self-monitors who seem less aware of or concerned with their impact on others. Low self-monitors' actions usually reflect their inner feelings and attitudes and they are less likely to change or adjust in each new context (Greenberg & Baron, 1990, pp. 204-206).

*** RELATIONSHIP BETWEEN SELF-MONITORING AND OB:**

Preliminary research evidence suggests that high self-monitors tend to pay closer attention to the behavior of others and are more capable of conforming than are low self-monitors. High self-monitors are more likely to be successful in managerial positions where individuals are required to play multiple, and even contradicting roles. Thus, the high self-monitor is capable of putting on different "faces" for different audiences.

** High self-monitors are often more effective than low self-monitors **in jobs that require boundary spanning** (communicating and interacting with different groups of people who, because of contrasting goals, training, or skills "speak different languages"). Since they can readily adjust their actions to the norms, expectations, and style of each group, high self-monitors are more successful in dealing with them than are low self-monitors, and this improves performance. Boundary-spanning roles are very important in most organizations, so assigning high self-monitoring people to such positions may yield substantial benefits.

Examples of occupations or positions that might require high self-monitoring would include HR manager, CEO, organizational development specialist or marketing and sales director. (Robbins, 1993: 108).

** High self-monitors tend to be better at **clear communicating** than low self-monitors.

Key point of this exercise is:

WHAT ARE THE IMPLICATIONS FOR:

Team behavior? Managerial behavior? Organizational behavior? Effectiveness?
Learning?

REFERENCE INFORMATION

The BFI should be cited with the original and a more accessible, recent reference:

John, O. P., Donahue, E. M., & Kentle, R. L. (1991). The Big Five Inventory--Versions 4a and 54. Berkeley, CA: University of California, Berkeley, Institute of Personality and Social Research.

John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm shift to the integrative Big Five trait taxonomy: History, measurement, and conceptual issues. In O. P. John, R. W. Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (pp. 114-158). New York, NY: Guilford Press.

END OF SELF-MONITORING SCALE

General Belief Measure

Directions: On the scales below, please indicate your feelings about "Capital Punishment." Numbers "1" and "7" indicate a very strong feeling. Numbers "2" and "6" indicate a strong feeling. Numbers "3" and "5" indicate a fairly weak feeling. Number "4" indicates you are undecided or do not understand the adjective pairs themselves. There are no right or wrong answer. Only circle one number per line.

1) Good 1 2 3 4 5 6 7 Bad

2) Wrong 1 2 3 4 5 6 7 Right

3) Harmful 1 2 3 4 5 6 7 Beneficial

4) Fair 1 2 3 4 5 6 7 Unfair

5) Wise 1 2 3 4 5 6 7 Foolish

6) Negative 1 2 3 4 5 6 7 Positive

END OF General Belief Measure

NPI-16 subclinical Narcissism

1. ___ I really like to be the center of attention
___ It makes me uncomfortable to be the center of attention
2. ___ I am no better or no worse than most people
___ I think I am a special person
3. ___ Everybody likes to hear my stories
___ Sometimes I tell good stories
4. ___ I usually get the respect that I deserve
___ I insist upon getting the respect that is due me
5. ___ I don't mind following orders
___ I like having authority over people
6. ___ I am going to be a great person
___ I hope I am going to be successful
7. ___ People sometimes believe what I tell them
___ I can make anybody believe anything I want them to
8. ___ I expect a great deal from other people
___ I like to do things for other people
9. ___ I like to be the center of attention
___ I prefer to blend in with the crowd
10. ___ I am much like everybody else

- ___ I am an extraordinary person
11. ___ I always know what I am doing
___ Sometimes I am not sure of what I am doing
12. ___ I don't like it when I find myself manipulating people
___ I find it easy to manipulate people
13. ___ Being an authority doesn't mean that much to me
___ People always seem to recognize my authority
14. ___ I know that I am good because everybody keeps telling me so
___ When people compliment me I sometimes get embarrassed
15. ___ I try not to be a show off
___ I am apt to show off if I get the chance
16. ___ I am more capable than other people
___ There is a lot that I can learn from other people

NPI-16 Key: Responses consistent with narcissism are shown in bold.

1. ___ **I really like to be the center of attention**
___ It makes me uncomfortable to be the center of attention
2. ___ I am no better or nor worse than most people
___ **I think I am a special person**
3. ___ **Everybody likes to hear my stories**
___ Sometimes I tell good stories
4. ___ I usually get the respect that I deserve
___ **I insist upon getting the respect that is due me**
5. ___ I don't mind following orders
___ **I like having authority over people**
6. ___ **I am going to be a great person**
___ I hope I am going to be successful
7. ___ People sometimes believe what I tell them

___ **I can make anybody believe anything I want them to**

8. ___ **I expect a great deal from other people**

___ I like to do things for other people

9. ___ **I like to be the center of attention**

___ I prefer to blend in with the crowd

10. ___ I am much like everybody else

___ **I am an extraordinary person**

11. ___ **I always know what I am doing**

___ Sometimes I am not sure of what I am doing

12. ___ I don't like it when I find myself manipulating people

___ **I find it easy to manipulate people**

13. ___ Being an authority doesn't mean that much to me

___ **People always seem to recognize my authority**

14. ___ **I know that I am good because everybody keeps telling me so**

___ When people compliment me I sometimes get embarrassed

15. ___ I try not to be a show off

___ **I am apt to show off if I get the chance**

16. ___ **I am more capable than other people**

___ There is a lot that I can learn from other people

END OF NPI-16 subclinical Narcissism

