Research Report

Can you tell who I am? Neuroticism, extraversion, and online self-presentation among young adults

Minas Michikyan [a,b,c,*], Kaveri Subrahmanyam [a,b], Jessica Dennis [a,c]

[a] Department of Psychology, California State University, Los Angeles, USA
[b] Children's Digital Media Center @LA, California State University, Los Angeles, USA
[c] Center for Multicultural Research, California State University, Los Angeles, USA

ARTICLE INFO

ABSTRACT

The present study examined the link between neuroticism, extraversion, as well as presentation of the real, the ideal, and the false self on Facebook. Self-reports were collected from 261 young adults (ages 18–30) about personality, online self-presentation, and Facebook use. Level of extraversion was positively associated with Facebook activity level. A series of regression analyses revealed that young adults high in neuroticism reported presenting their ideal and false self on Facebook to a greater extent whereas those low in extraversion reported engaging in greater online self-exploratory behaviors. Findings suggest that young adults who are experiencing emotional instability may be strategic in their online self-presentation perhaps to seek reassurance, and those who have self-doubt further explore their self online.

1. Introduction

In recent years, social networking site (SNS) use has soared among 18–29 year olds [2005: 9% vs. 2012: 83%] (Brenner, 2013). Facebook, the world's most popular SNS, has over 1.11 billion users worldwide (Smith, 2013), accounting for almost 16% of the world's population (United States Census Bureau, 2013). Of these Facebook users, 38% are between the ages of 18–29 (Facebook, 2013). Facebook has evolved over the years (Rahman, 2012), offering members more ways to connect with their family and friends (Subrahmanyam, Reich, Waechter, & Espinoza, 2008), and present information about themselves (Strano, 2008) and their whereabouts online (Manago, Taylor, & Greenfield, 2012). Self-presentation features prominently in young people's use of SNSs (DeAndrea & Walther, 2011; Manago, Graham, Greenfield, & Salimkhan, 2008; Zhao, Grasmuck, & Martin, 2008), such as via profile pictures, status updates, and uploading of images and videos. Recent research suggests that youth present different aspects of their self online such as their real self, ideal self, and their false self (Michikyan, Dennis, & Subrahmanyam, submitted for publication), and it is important to examine how individual factors relate to different kinds of online self-presentation.

Research on youth social media use suggests that factors such as psychosocial well-being, self-efficacy, and personality are associated with online self-presentation (Coyne, Padilla-Walker, & Howard, 2013; Gonzales & Hancock, 2011; Michikyan & Subrahmanyam, 2012; Subrahmanyam & Šmahel, 2011; Wilson, Fornasier, & White, 2010; Wilson, Gosling, & Graham, 2012). With regard to the role of personality in online self-presentation, however, research to date has only examined the relation between young people's personality characteristics and the frequency of their SNS use (e.g., Ong et al., 2011; Ross et al., 2009), and suggests that neuroticism and extraversion may be central to social media use (Amichai-Hamburger & Vinitzky, 2010; Ross et al., 2009; Zywica & Danowski, 2008). Little is known however about the extent to which these personality characteristics may be related to different kinds of online self-presentation. Therefore, the aim of the present study is to examine the relation between neuroticism, extraversion, and presentation of the real self, the ideal self, and the false self on Facebook.

1.1. Differences in online self-presentation

Mead (1934) proposed that a self emerges through social interaction, and understanding the self is essential in having a purpose in life (Schlegel, Hicks, King, & Arndt, 2011). In general, the self, or who one is, involves one's personal, social, cultural as well as emotional experiences (e.g., Markus & Kitayama, 1991; Russell, 1991). In offline or face-to-face social interactions, individuals carefully

* Corresponding author at: Department of Psychology, California State University, Los Angeles, 5151 State University Drive, Los Angeles, CA 90032, USA. Tel.: +1 (323) 343 2250; fax: +1 (323) 343 2281.

E-mail addresses: Minas.Michikyan2@calstatela.edu (M. Michikyan), ksubrah@calstatela.edu (K. Subrahmanyam), jdennis@calstatela.edu (J. Dennis).

present, monitor, and manage the self to ensure the smooth flow of the interaction (Schlenker & Wowra, 2003). Brown has defined such self-presentation as the attempt to create, modify, or maintain a certain self-image in the presence of an audience (Brown, 2007). Research suggests that individuals generally observe their own behaviors and others' reactions to them, and compare their own reactions and attributes to others when interacting socially (Festinger, 1950). In so doing, they engage in various self-presentations (Elliott, 1982; Schlenker & Wowra, 2003). Self-presentation is multifaceted (Harter, 1990, 1998; Harter, Bresnick, Bouchey, & Whitesell, 1997; Harter & Monsour, 1992) (e.g., one may present a false sense of the self to gain the approval of others), and it may foster identity construction (Harter, 1998; Subrahmanyam & Greenfield, 2008).

As noted earlier, youth interact with each other online including presenting their self in a variety of ways (Michikyan & Subrahmanyam, 2012). Recent studies have concluded that they use SNSs to present their real personalities (Back et al., 2010; Gosling, Gaddis, & Vazire, 2007). However, drawing on the theory of the self (Harter, 1990, 1998; Harter et al., 1997; Harter & Monsour, 1992), Michikyan and colleagues found that on Facebook, college students not only presented their real self (aspects that are authentic) and ideal self (who one wishes/desires to be), but they also presented their false self (aspects that are not fully truthful). Importantly, identity state and well-being were associated with such online self-presentation: Young adults who were experiencing emotional fluctuations and self-doubt presented their false self on Facebook to a greater extent (Michikyan et al., submitted for publication).

1.2. Personality differences in online behavior

Online self-presentation may also be influenced by the presenter's personality (Krämer & Winter, 2008; Ong et al., 2011; Ross et al., 2009). In general, personality includes one's motives, thoughts, feelings and behavioral tendencies (McCrae & John, 1992), and can be categorized into broad characteristics (Costa & McCrae, 1992a,b). Each personality characteristic can be summarized by its personality markers – for example, anxious/moody (markers of neuroticism), and outgoing/social (markers of extraversion), and be considered as bipolar (extraversion vs. introversion) (Goldberg, 1992; Gosling, Rentfrow, & Swann, 2003). In general, neurotic individuals are overly emotional and tend to experience difficulties in their offline social interactions (Amichai-Hamburger, Wainapel, & Fox, 2002; McCroskey, Heisel, & Richmond, 2001). In their online interactions, they prefer to use chat rooms (McCroskey et al., 2001), instant messaging (Ehrenberg, Juckes, White, & Walsh, 2008), and SNS features like status updates (Wang, Jackson, Zhang, & Su, 2012) and wall posts (Ross et al., 2009) perhaps to mitigate some of their interaction concerns. Tosun and Lajunen (2010) suggested that neurotic individuals expressed their real self on the Internet, especially in anonymous online contexts (Amichai-Hamburger et al., 2002). However, other evidence linking neuroticism and SNS use tells a more complex story. For instance, Back et al. (2010) found inconsistencies in accuracy ratings of SNS profiles belonging to neurotic young adults, suggesting that self-presentation is malleable, and that neurotic individuals may be strategic in their SNS self-presentation. However, it yet remains to be seen what aspects of the self are presented by neurotic young adults on SNSs, a less anonymous online venue. Thus, it was expected that young adults high in neuroticism would present their ideal self and their false self (for the purpose of deceiving and impressing others) on Facebook to a greater extent, as such online self-presentation may be intrinsically strategic (Michikyan et al., submitted for publication).

Extraverted individuals, on the other hand, find offline social interactions rewarding (Goby, 2006) and have been found to express their real self offline (Amichai-Hamburger et al., 2002). Unlike neurotic individuals, extraverts use social media to strengthen and extend their social networks thereby engaging in greater levels of online activities (Tosun & Lajunen, 2010; Wang et al., 2012). In examining young adults' SNS profiles, Back et al. found that extraverted young adults presented their real self on the sites, suggesting that extraverts' online lives are an extension of their offline lives (Back et al., 2010; Tosun & Lajunen, 2010). Stated differently, online self-presentation may be similar to offline self-presentation for extraverted individuals. Therefore, it was expected that there would be a significant relationship between extraversion and online self-presentation of the real self.

1.3. Focus of the present study

Although the empirical evidence suggests that differences exist in how neurotic and extraverted individuals use Facebook (Back et al., 2010), the extent to which young adults high in neuroticism and extraversion present the real self, ideal self, and the false self on Facebook remains unclear. Given the popularity of Facebook (Brenner, 2013), and research that young adults present their multifaceted self on Facebook (Michikyan et al., submitted for publication), it is important to examine the likelihood of personality differences in such online self-presentation.

2. Method

2.1. Participants

Young adults [$N = 261$, (66 males, 195 females); $M = 21.92$, $SD = 2.76$], were recruited from a large urban university. The ethnic make-up of the sample [18.7% Asian, 4.6% Black, 57.4% Latino/a, 10.3% White, and 9.3% other racial/ethnic groups] reflects the diverse population in Southern California. This data set is part of a larger project (Michikyan, 2011). On average, participants reported spending over two hours and forty minutes per day on Facebook ($M = 145.06$, $SD = 123.89$), logging into their Facebook profiles at least six times a day ($M = 6.14$, $SD = 6.58$), updating their status more than once per day ($M = 1.37$, $SD = 1.91$), and posting at least four wall posts per day on Facebook ($M = 4.40$, $SD = 5.13$). Participants completed all self-report measures in the laboratory, on www.surveymonkey.com (a survey hosting site), and received course credit for their participation.

2.2. Measures

2.2.1. Demographic questionnaire

Participants' age, gender, and racial/ethnic identity were collected using a demographic questionnaire.

2.2.2. Facebook use questionnaire

This questionnaire comprised of questions about participants' average daily use of Facebook: (1) Facebook time – the number of minutes spent on Facebook, and (2) Facebook activity level – the number of Facebook logins, status updates, wall posts, and participants' perceived level of activity on Facebook were transformed to z-scores and summed (Cronbach's $\alpha = .69$).

2.2.3. Self-Presentation on Facebook Questionnaire (SPFBQ)

The SPFBQ (Michikyan et al., submitted for publication) contains 17 items that assess different aspects of online self-presentation on a 5-point Likert-type scale (1 = strongly disagree to 5 = strongly agree). Sample items include: "The way I present myself on Facebook is how I am in real life" (real self, $\alpha = .81$), "I post things on my Facebook to show aspects of who I want to be" (ideal self, $\alpha = .70$), "I sometimes try to be someone other than my true

self on Facebook" (false self deception, α = .79), "On Facebook I can try-out many aspects of who I am much more than I can in real life" (false self exploration, α = .72), as well as, "I try to impress others with the photos I post of myself on my Facebook profile," and "I compare myself to others on Facebook" (false self impress/compare, α = .65). The 17 items loaded strongly on the five factors (Michikyan et al., submitted for publication). Higher scores indicated greater presentation of each aspect of the self. The raw scores were obtained and the mean for each self was calculated.

2.2.4. Personality characteristics

An adapted version of the Ten-Item Personality Inventory (TIPI; Gosling et al., 2003) was used, which included additional personality characteristic markers for neuroticism and extraversion. Personality characteristic descriptors have been used to capture markers of the Big-Five dimensions (Goldberg, 1992; Saucier, 1994). For neuroticism, the additional characteristic descriptor included: nervous/moody/emotional (α = .76); for extraversion, the additional personality characteristic descriptors were: outgoing/sociable/assertive/outspoken (α = .85). Participants indicated their level of agreement on each set of personality characteristic markers on a 5-point Likert-type scale (1 = *strongly disagree* to 5 = *strongly agree*). Higher scores indicated greater levels of neuroticism and extraversion. The responses for each personality characteristic marker were computed, the items for neuroticism and extraversion were aggregated, and then the mean was calculated.

2.3. Analyses

Correlational analyses were employed to examine the relationship between neuroticism, extraversion, Facebook time, and activity level. Findings on personality characteristics–Facebook activity relationship have been inconsistent (Amichai-Hamburger & Vinitzky, 2010; Ross et al., 2009). Thus, a correlational analysis for neuroticism, extraversion, and each individual Facebook activity item (i.e., number of logins, status updates, wall posts, perceived level of activity) was also conducted. Then, a series of multiple regression analyses were used to determine the associations between neuroticism, extraversion, and online presentation of the real self, the ideal self, and the false self (deception, exploration, compare/impress).

3. Results

3.1. Relationships between neuroticism, extraversion, and Facebook activities

The correlational analyses (Table 1) revealed that neuroticism was not significantly associated with reported Facebook time, or activity level. There was no significant correlation between extraversion and reported time spent on Facebook. However, there was a significant positive association between extraversion and Facebook activity level, suggesting that young adults high in extraversion reported engaging in greater Facebook activities.

Next, five, two-step hierarchical regression analyses (Table 2) were conducted to determine the extent to which neuroticism, and extraversion predicted online presentation of the real, the ideal, and the false self. In the first step, age, gender, race/ethnicity, Facebook time, and activity level were entered, and neuroticism, as well as extraversion were entered in the second step.

3.2. Presentation of the real self on Facebook

The first analysis predicting online presentation of the real self using neuroticism, extraversion ($F(2,237)$ = .06, p = .944, Adjusted

Table 1
Correlations for neuroticism, extraversion, Facebook time, & activity level.

Variables	1	2	3	4
1. FB time	–			
2. FB activity level	.56[**]	–		
3. Neuroticism	.10	.07	–	
4. Extraversion	.07	.13[*]	−.14[*]	–

Notes. FB = Facebook.
[*] p < .05.
[**] p < .001.

R^2 = .10) was not significant. However, in this model, Facebook activity level (p < .0001) was a positive significant predictor of real self presentation, suggesting that young adults who were active Facebook users reported presenting their real self on the site to a greater extent.

3.3. Presentation of the ideal self on Facebook

The second analysis predicting online presentation of the ideal self using neuroticism, extraversion [$F(2,237)$ = 3.68, p = .027, Adjusted R^2 = .05] was significant. In this model, Facebook activity level (p = .005), and neuroticism (p = .024) were positive significant predictors of ideal self presentation on Facebook. Specifically, young adults who were more active Facebook users, and those who were high in neuroticism, reported presenting their ideal self on Facebook to a greater extent.

3.4. Presentation of the false self (deception) on Facebook

The third analysis predicting online presentation of the false self (deception) using neuroticism, extraversion [$F(2,237)$ = 3.25, p = .041, Adjusted R^2 = .02] was significant. In this model, neuroticism (p = .015) was a positive significant predictor of false self (deception) presentation on Facebook. Specifically, young adults high in neuroticism reported presenting greater levels of online self-presentation so as to deceive others.

3.5. Presentation of the false self (compare/impress) on Facebook

The fourth analysis predicting online presentation of the false self (compare/impress) using neuroticism, extraversion [$F(2,237)$ = 5.10, p = .007, Adjusted R^2 = .02] was significant. In this model, neuroticism (p = .003) was a positive significant predictor of false self (compare/impress) presentation on Facebook. Specifically, young adults high in neuroticism reported greater presentation of the self on Facebook so as to compare to and impress others.

3.6. Presentation of the false self (exploration) on Facebook

The fifth analysis predicting online presentation of the false self (exploration) using neuroticism, extraversion [$F(2,237)$ = 6.18, p = .002, Adjusted R^2 = .11] was significant. In this model, Facebook activity level (p = .001) and extraversion (p = .002) were significant predictors of false self (exploration) presentation on Facebook. Specifically, young adults who were active Facebook users, and low in extraversion (high in introversion), reported engaging in greater self-exploratory behaviors online.

4. Discussion

There is a growing body of work on personality and social media use among young adults. However, research concerning personality characteristics and self-presentation on SNSs remains scarce. An important question is whether young adults high in

Table 2
Summary of hierarchical regression analysis for neuroticism and extraversion predicting self-presentation on Facebook (N = 261).

	Real self				Ideal self				False self (deception)				False self (compare/impress)				False self (exploration)			
	B (SE)	β	R^2	ΔR^2	B (SE)	β	R^2	ΔR^2	B (SE)	β	R^2	ΔR^2	B (SE)	β	R^2	ΔR^2	B (SE)	β	R^2	ΔR^2
Variables/steps																				
Step 1																				
Age	.02	−.02			.02	−.01			.02	−.03			.02	.03			.02	.05		
Gender	.11	.03			.15	−.03			.10	−.12			.14	.01			.13	−.09		
Race/ethnicity	.01	.09			.01	−.02			.01	.02			.01	.03			.12	.04		
FB time	.00	−.01			.00	.01			.00	−.04			.00	.06			.00	.10		
FB activity level	.08	.34***			.11	.21**			.07	.05			.10	−.04			.09	.25		
F(3,239)			.13	.13***			.05	.05			.02	.02			.01	.01			.09	.09***
Step 2																				
Neuroticism	.06	−.01			.08	.15*			.05	.16*			.07	.20**			.06	.06		
Extraversion	.02	.29			.09	−.07			.06	−.02			.08	−.03			.07	−.20**		
F(2,237)			.13	.00			.08	.03*			.04	.03*			.05	.04**			.14	.05**

Notes. FB = Facebook. Gender: 1 = men, 2 = women.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

neuroticism and extraversion differ in how they present their real self, ideal self, and false self on Facebook. This paper sought to examine this question. With regard to Facebook use, results showed that neuroticism and extraversion were not associated with reported time spent on Facebook. Perhaps young adults high in neuroticism and extraversion are spending about the same amount of time on Facebook now that mobile access to such sites have become commonplace (Smith, Rainie, & Zickuhr, 2011). Findings did show, however, that Facebook activity level was positively associated with extraversion, suggesting that young adults high in extraversion were more active Facebook users. In terms of self-presentation on Facebook, as expected, a positive association was found between neuroticism and online presentation of the ideal self, and the false self (deception, compare/impress). These findings suggest that young adults high in neuroticism may present the self on Facebook to show who they want to be, to deceive others, and use social comparison to impress others to a greater extent. This may help explain Back et al.'s (2010) finding that there were inconsistencies in accuracy ratings for SNS profiles belonging to neurotic young adults. Interestingly, there was a negative association between extraversion and the online presentation of the false self (exploration); suggesting that young adults low in extraversion (introverts) may engage in self-exploratory online behaviors. Similar findings have been reported in previous research indicating that older adolescents may be more likely than their younger counterparts to engage in online self-exploration (Valkenburg, Schouten, & Peter, 2005). Although young adulthood (ages 18–29) is a distinct developmental period, there exist overlaps with adolescence.

In conclusion, this study demonstrated a link between neuroticism, extraversion and online presentation of the real, the ideal, and the false self. Findings provide empirical evidence that can help explain some of the personality patterns in different aspects of self-presentation on SNSs. Given that 83% of young adults are on SNSs (Brenner, 2013), it was important to understand the role of such sites in their lives, especially for those young adults who might be experiencing greater levels of psychological distress (marker of neuroticism). Perhaps young adults high in neuroticism are more selective in their self-presentation (Ross et al., 2009; Wang et al., 2012), opting to not present their real self on SNSs (less anonymous online contexts), as sharing such aspects of their self (e.g., emotional, anxious, moody) may lead to decreased levels

of perceived social support. Instead, they may present less truthful information about themselves or even lie (false self deception), use social comparison in their online self-presentation to impress others (false self compare/impress), and present aspects of who they want to be (ideal self) to perhaps increase their social connections and their perceived level of social support (Swickert, Hittner, Harris, & Herring, 2002). For young adults high in extraversion, on the other hand, SNS use might be an extension of their offline lives (Wang et al., 2012). However, those young adults who focus more on their internal experiences and have self-doubt (marker of introversion) (Goby, 2006) may engage in online behaviors to further explore the self. Findings also provide further support for Michikyan et al.'s (submitted for publication) contention that young adults who might be experiencing emotional fluctuations and identity transitions during young adulthood (Arnett & Schwab, 2013), may engage in a more strategic and self-exploratory behaviors on SNSs. Moreover, the use of the SPFBQ, which was developed using extant developmental theory of the self, provided a reliable and broader view of young adults' Facebook use. Furthermore, a unique feature of the study was the use of an ethnically diverse sample; given the increasing diversity of the U.S., such a diverse sample enhances the generalizability of the results. Finally, controlling for the effects of age, gender, and race/ethnicity made it possible to investigate the unique contribution of neuroticism and extraversion to online presentation of the self.

Future studies should examine the relationships between other personality traits such as agreeableness, openness to experience, conscientiousness (Costa & McCrae, 1992a,b) and online presentation of the real, the ideal, and the false self. Research should also explore the relationship between the SPFBQ with other personality inventories (Costa & McCrae, 1992a). Researchers should control against possible social desirability effects in self-reported responses for online self-presentation, as this was not done in this study. In the future, studies should also examine how peer feedback moderates online self-presentation for young adults with different personality characteristics. Furthermore, considering that personality and self-presentation can change across time and across situations (Boyce, Wood, & Powdthavee, 2013; Kelly & Rodriguez, 2006), longitudinal data are needed to capture such changes. Although the study helped to answer some important questions, more research is needed to fully understand the links between other psychological factors and online self-presentation.

Acknowledgements

References

Amichai-Hamburger, Y., & Vinitzky, G. (2010). Social network use and personality. *Computers in Human Behavior, 26*, 1289–1295.

Amichai-Hamburger, Y., Wainapel, G., & Fox, S. (2002). "On the Internet no one knows I'm an introvert": Extroversion, neuroticism, and Internet interaction. *CyberPsychology and Behavior, 5*, 125–128.

Arnett. J. J., & Schwab, J. (2013). *The Clark University Poll of Emerging Adults, 2012: Thriving, struggling, and hopeful*. Worcester: Clark University.

Back, M. D., Stopfer, J. M., Vazire, S., Gaddis, S., Schmukle, S. C., Egloff, B., et al. (2010). Facebook profiles reflect actual personality, not self idealization. *Psychological Science, 21*, 372–374.

Boyce, C. J., Wood, A. M., & Powdthavee, N. (2013). Is personality fixed? Personality changes as much as "variable" economic factors and more strongly predicts changes to life satisfaction. *Social Indicators Research, 111*, 287–305.

Brenner J. (2013, August 5). Pew Internet: Social networking. <http://pewinternet.org/Commentary/2012/March/Pew-Internet-Social-Networking-fulldetail.aspx>.

Brown, J. D. (2007). *The self*. New York: Psychology Press.

Costa, P. T., & McCrae, R. R. (1992a). Four ways five factors are basic. *Personality and Individual Differences, 13*, 653–665.

Costa, P. T., & McCrae, R. R. (1992b). Normal personality assessment in clinical practice: The NEO personality inventory. *Psychological Assessment, 4*, 5–13.

Coyne, S. M., Padilla-Walker, L. M., & Howard, E. (2013). Emerging in a digital world: A decade review of media use, effects, and gratifications in emerging adulthood. *Emerging Adulthood, 1*, 125–137.

DeAndrea, D. C., & Walther, J. B. (2011). Attributions for inconsistencies between online and offline self-presentations. *Communication Research, 38*, 805–825.

Ehrenberg, A., Juckes, S., White, K. M., & Walsh, S. P. (2008). Personality and self-esteem as predictors of young people's technology use. *CyberPsychology and Behavior, 11*, 739–741.

Elliott, G. C. (1982). Self-esteem and self-presentation among the young as a function of age and gender. *Journal of Youth and Adolescence, 11*, 135–153.

Facebook (2013, February 6). Tech-News. <https://www.facebook.com/TechNewsPool/posts/205177789627821>.

Festinger. J. (1950). A theory of social comparison. *Human Relations, 7*, 117–140.

Goby, V. P. (2006). Personality and online/offline choices: MBTI profiles and favored communication modes in a Singapore study. *CyberPsychology and Behavior, 9*, 5–13.

Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment, 4*, 26–42.

Gonzales, A. L., & Hancock, J. T. (2011). Mirror, mirror on my Facebook wall: Effects of exposure to Facebook on self-esteem. *Cyberpsychology, Behavior, and Social Networking, 14*, 79–83.

Gosling, S. D., Gaddis, S., & Vazire, S. (2007). Proceedings from the International Conference on Weblogs and Social Media: *Personality impressions based on Facebook profiles*. Boulder, CO: AAAI. Retrieved from <http://www.icwsm.org/papers/3-Gosling-Gaddis-Vazire.pdf>

Gosling, S. D., Rentfrow, P. J., & Swann, W. B. Jr., (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality, 37*, 504–528.

Harter, S. (1990). *Self and identity development*. Cambridge: Harvard University Press.

Harter, S. (1998). *The development of self-representations*. New York: Wiley.

Harter, S., Bresnick, S., Bouchey, H. A., & Whitesell, N. R. (1997). The development of multiple role-related selves during adolescence. *Development and Psychopathology, 9*, 835–853.

Harter, S., & Monsour, A. (1992). Developmental analysis of conflict caused by opposing attributes in the adolescent self-portrait. *Developmental Psychology, 28*, 251–260.

Kelly, A. E., & Rodriguez, R. R. (2006). Publicly committing oneself to an identity. *Basic and Applied Social Psychology, 28*, 185–191.

Krämer, N. C., & Winter, S. (2008). Impression management 2.0. *Journal of Media Psychology: Theories, Methods, and Applications, 20*, 106–116.

Manago, A. M., Graham, M. B., Greenfield, P. M., & Salimkhan, G. (2008). Self presentation and gender on MySpace. *Journal of Applied Developmental Psychology, 29*, 446–458.

Manago, A. M., Taylor, T., & Greenfield, P. M. (2012). Me and my 400 friends: The anatomy of college students' Facebook networks, their communication patterns, and wellbeing. *Developmental Psychology, 48*, 369–380.

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review, 98*, 224–253.

McCrae, R. R., & John, O. P. (1992). An introduction to the five-factor model and its applications. *Journal of Personality, 60*, 175–215.

McCroskey, J., Heisel, A., & Richmond, V. (2001). Eysenck's Big-Three and communication traits: Three correlational studies. *Communication Monographs, 68*, 360–366.

Mead, G. H. (1934). *Mind, self and society*. Chicago: University of Chicago Press.

Michikyan M. (2011). *My Facebook & I: Identity exploration on Facebook among emerging adults*. (Unpublished master's thesis). California State University, Los Angeles, USA.

Michikyan, M., Dennis, J., & Subrahmanyam, K. (submitted for publication) Can you guess who I am? Real, ideal, and false self-presentation on Facebook among emerging adults. *Manuscript submitted for publication*.

Michikyan, M., & Subrahmanyam, K. (2012). Social networking sites: Implications for youth. In Z. Yan (Ed.), *Encyclopedia of cyber behavior* (pp. 132–147). Hershey, PA: IGI Global.

Ong, E. Y., Ang, R. P., Ho, J., Lim, J. C., Goh, D. H., Lee, C. S., et al. (2011). Narcissism, extraversion and adolescents' self-presentation on Facebook. *Personality and Individual Differences, 50*, 180–185.

Rahman, O. (2012, April 23). How has Facebook changed and evolved over the years? <http://theultralinx.com/2012/04/facebook-changed-evolved-years-infographic.html>.

Ross, C., Orr, E. S., Sisic, M., Arseneault, J. M., Simmering, M. G., & Orr, R. R. (2009). Personality and motivations associated with Facebook use. *Computers in Human Behavior, 25*, 578–586.

Russell, J. A. (1991). Culture and the categorization of emotions. *Psychological Bulletin, 110*, 426–450.

Saucier, G. (1994). Mini-markers: A brief version of Goldberg's unipolar Big-Five markers. *Journal of Personality Assessment, 63*, 506–516.

Schlegel, R. J., Hicks, J. A., King, L. A., & Arndt, J. (2011). Feeling like you know who you are: Perceived true self-knowledge and meaning in life. *Personality and Social Psychology Bulletin, 37*, 745–756.

Schlenker, B. R., & Wowra, S. A. (2003). Carryover effects of feeling socially transparent or impenetrable on strategic self presentation. *Journal of Personality and Social Psychology, 85*, 871–880.

Smith, C. (2013, May 26). How many people use the top social media, apps & services? <http://expandedramblings.com/index.php/resource-how-manypeople-use-the-top-social-media/>.

Smith, A., Rainie, L., & Zickuhr, K. (2011, July 19). College students and technology. <http://www.pewinternet.org/Reports/2011/College-students-and-technology/Report.aspx>.

Strano, M. M. (2008). User descriptions and interpretations of self-presentation through Facebook profile images. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 2*, 2.

Subrahmanyam, K., & Greenfield, P. (2008). Online communication and adolescent relationships. *The Future of Children, 18*, 119–146.

Subrahmanyam, K., Reich, S., Waechter, N., & Espinoza, G. (2008). Online and offline social networks: Use of social networking sites by emerging adults. *Journal of Applied Developmental Psychology, 29*, 420–433.

Subrahmanyam, K., & Šmahel, D. (2011). *Digital Youth: The role of media in development*. New York: Springer.

Swickert, R. J., Hittner, J. B., Harris, J. L., & Herring, J. A. (2002). Relationships among Internet use, personality, and social support. *Computers in Human Behavior, 18*, 437–451.

Tosun, L. P., & Lajunen, T. (2010). Does Internet use reflect your personality? Relationship between Eysenck's personality dimensions and Internet use. *Computers in Human Behavior, 26*, 162–167.

United States Census Bureau. U.S. and world population clock (2013, August 20). <http://www.census.gov/popclock/>.

Valkenburg, P. M., Schouten, A. P., & Peter, J. (2005). Adolescents' identity experiments on the Internet. *New Media and Society, 7*, 383–402.

Wang, J. L., Jackson, L. A., Zhang, D. J., & Su, Z. Q. (2012). The relationships among the Big Five Personality factors, self-esteem, narcissism, and sensation-seeking to Chinese University students' uses of social networking sites (SNSs). *Computers in Human Behavior, 28*, 2313–2319.

Wilson, K., Fornasier, S., & White, K. M. (2010). Psychological predictors of young adults' use of social networking sites. *Cyberpsychology, Behavior, and Social Networking, 13*, 173–177.

Wilson, R. E., Gosling, S. D., & Graham, L. T. (2012). A review of Facebook research in the social sciences. *Perspectives on Psychological Science, 7*, 203–220.

Zhao, S., Grasmuck, S., & Martin, J. (2008). Identity construction on Facebook: Digital empowerment in anchored relationships. *Computers in Human Behavior, 24*, 1816–1836.

Zywica, J., & Danowski, J. (2008). The faces of Facebookers: Investigating social enhancement and social compensation hypotheses: Predicting Facebook and offline popularity from sociability and self-esteem, and mapping the meanings of popularity with semantic networks. *Journal of Computer-Mediated Communication, 14*, 1–34.