Rapid Communication

Personality and Self-Esteem as Predictors of Young People’s Technology Use


Abstract

We examined the role of personality and self-esteem in university students’ (N = 200) use of communication technologies. More disagreeable individuals spent increased time on calls, whereas extraverted and neurotic individuals reported increased time spent text messaging. More disagreeable individuals and those with lower self-esteem spent increased time using instant messaging (IM). For addictive tendencies related to communication technologies, more neurotic individuals reported stronger mobile phone addictive tendencies, while more disagreeable individuals and those with lower self-esteem reported stronger IM addictive tendencies.

Introduction

The unique social functions of communication technologies, including mobile phones and instant messaging (IM) services (e.g., ICQ [I Seek You]), allow perpetual connectivity. However, a reliance on technology to validate social connection may have psychological implications, including developing technological addictions. Personality traits of extraversion (depth and intensity of interpersonal interactions), neuroticism (level of emotional stability and adjustment), agreeableness (differences in levels of cooperation and social harmony), openness to experience (pursuing and enjoying new experiences), and conscientiousness (control, regulation, and direction of goals and impulses), as well as the individual difference variable of self-esteem (evaluative attitudes towards oneself), may predict mobile phone behavior. Disagreeableness and extraversion have been associated with higher mobile phone use, while low conscientiousness and higher neuroticism have predicted more SMS (Short Message Service) use. Individuals with lower self-esteem have reported higher and problematic mobile phone use. Similar processes may operate for IM use. We assessed the effect of personality factors on both mobile phone and IM use and addictive tendencies for these technologies. Rather than using an exhaustive set of diagnostic symptoms, we used three indicators of addiction: withdrawal (negative physiological or psychological response to not engaging in the behavior), loss of control (engaging in the behavior more than intended), and salience (the activity dominating thoughts or behavior) to gauge whether addictive tendencies for mobile phone and IM use were occurring.

We used a youth cohort because youth (17 to 24 years) are recognized as innovators and early adopters of the latest technologies and possess potential susceptibility to developing patterns of problematic use.

Materials and Methods

Participants were 200 university students (146 females, 54 males; age M = 19.06, SD = 1.80) who owned a mobile phone and used it most days, had access to a computer at home, and used an IM service most days. The 60-item NEO FFI Personality Inventory measured participants’ level of agreement (1, strongly disagree, to 5, strongly agree) for statements on five 12-item scales: Neuroticism (α = 0.84), Extraversion (α = 0.75), Openness (α = 0.68), Agreeableness (α = 0.75), and Conscientiousness (α = 0.79). The 25-item Coop...
ersmith Self-Esteem Inventory Adult Form assessed participants' evaluative attitudes toward themselves (like me or unlike me) in areas of academic, social, family, and personal experience ($\alpha = 0.82$). Participants reported the average time (in minutes) spent each day (a) making or receiving phone calls, (b) sending or receiving SMS, and (c) using IM. Three items measuring salience (i.e., The first thing I do each morning is check my mobile phone for missed calls or messages), loss of control (i.e., I find it hard to control my mobile phone use), and withdrawal (i.e., I feel lost without my mobile phone), scored 1, strongly disagree, to 7, strongly agree, assessed technology addiction tendencies for mobile phone ($\alpha = 0.69$) and IM use ($\alpha = 0.85$).

## Results

On average, participants spent 52 minutes per day on calls, 60 minutes per day on SMS, 104 minutes per day using IM, and reported addictive tendency scores of 12.84 for mobile phones and 6.89 for IM (range from 4–21 for mobile phones and 3–20 for IM). Multiple regression analyses assessed the predictors (personality factors and self-esteem) of time spent using a mobile phone for (a) calls and (b) SMS, (c) time spent using IM, and addictive tendencies for (d) mobile phone and (e) IM use (Table 1). Personality factors and self-esteem, as a block, did not significantly predict time spent on mobile phone calls, $F(6, 192) = 0.95$, $p = 0.46$, $R^2 = 0.029$. Agreeableness was the only significant (negative) predictor, $t(192) = -2.04$, $p = 0.04$. As a block, personality factors and self-esteem did not predict time spent using SMS, $F(6, 192) = 1.78$, $p = 0.11$, $R^2 = 0.053$. Neuroticism, $t(192) = 1.94$, $p < 0.05$, and extraversion, $t(192) = 1.99$, $p < 0.05$, predicted (positively) SMS use with a trend for lower scores on agreeableness predicting more SMS use, $t(192) = -1.82$, $p = 0.07$. As a block, personality factors and self-esteem significantly predicted IM use, $F(6, 191) = 2.67$, $p = 0.02$, $R^2 = 0.077$. The significant (negative) predictors were agreeableness, $t(191) = -2.12$, $p = 0.04$, and self-esteem, $t(191) = -2.54$, $p = 0.01$. Personality factors and self-esteem, as a block, significantly predicted mobile phone addictive tendencies, $F(6, 193) = 2.56$, $p = 0.02$, $R^2 = 0.074$. Neuroticism was the only significant (positive) predictor, $t(193) = 2.04$, $p = 0.04$. Personality factors and self-esteem, as a block, significantly predicted IM addictive tendencies, $F(6, 193) = 4.58$, $p = 0.001$, $R^2 = 0.125$. Agreeableness, $t(193) = -3.02$, $p = 0.003$, and self-esteem, $t(193) = -2.66$, $p = 0.01$, were significant negative predictors.

## Disclosure Statement

The authors have no conflict of interest.

## Table 1. Beta Weights ($\beta$) for Regression Analyses Predicting Time Spent on Calls, SMS, IM, MPAT, and IMAT

<table>
<thead>
<tr>
<th></th>
<th>Calls</th>
<th>SMS</th>
<th>IM</th>
<th>MPAT</th>
<th>IMAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuroticism</td>
<td>0.01</td>
<td>0.20*</td>
<td>-0.17</td>
<td>0.20*</td>
<td>-0.13</td>
</tr>
<tr>
<td>Extraversion</td>
<td>0.05</td>
<td>0.17*</td>
<td>0.01</td>
<td>0.13</td>
<td>-0.01</td>
</tr>
<tr>
<td>Openness</td>
<td>-0.01</td>
<td>-0.07</td>
<td>-0.04</td>
<td>-0.02</td>
<td>-0.07</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>-0.15*</td>
<td>-0.14</td>
<td>-0.16*</td>
<td>0.08</td>
<td>-0.22**</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>-0.06</td>
<td>0.01</td>
<td>-0.07</td>
<td>-0.07</td>
<td>-0.10</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>0.04</td>
<td>0.07</td>
<td>-0.28**</td>
<td>-0.04</td>
<td>-0.28**</td>
</tr>
</tbody>
</table>

**SMS:** Short Message Service; **IM:** instant messaging; **MPAT:** Mobile Phone Addictive Tendencies; **IMAT:** IM Addictive Tendencies.

*p < 0.05; **p < 0.01.

Results found evidence for high levels of communication technology use and indications of some addictive tendencies. More disagreeable individuals reported greater mobile phone use for calls and IM use, possibly because they find it easier to communicate with others (and others with them) via technology rather than face-to-face. This finding may be due to lower levels of social skill or a more pragmatic approach to life. Extravers reported more SMS use, possibly due to a proclivity for social interaction, and individuals high on neuroticism reported more SMS (and IM) use, suggesting that these communication mediums may allow neurotic communicators more time to review message content. Individuals with low self-esteem used IM more. People higher in neuroticism reported stronger mobile phone addictive tendencies, and those lower in self-esteem and more disagreeable reported stronger IM addictive tendencies.

Study limitations include the self-report measures of use and an overrepresentation of female participants. Future research should unpack the study’s findings (e.g., via qualitative methods), especially for agreeableness, and examine the factors influencing people’s preference for texting or voice calling. Because personality and self-esteem were not strong predictors of technology use, it is important to continue to examine factors underlying people’s usage given evidence of other potential influences (e.g., control perceptions). Future research should develop a more comprehensive tool for diagnosing addiction to communication technologies rather than using a measurement relying on indicators only.

Overall, personality and self-esteem were fairly weak predictors of young people’s mobile phone and IM use, with disagreeableness as the most consistent predictor. Personality and self-esteem were stronger predictors of addiction tendencies, with more neurotic individuals reporting stronger mobile phone addictive tendencies and those lower in self-esteem and more disagreeable with stronger IM addictive tendencies. Given the small amount of variability accounted for, we should continue to identify the factors predating people’s use of and potential overreliance on these technologies.
References

Address reprint requests to:
Dr Katherine M. White
School of Psychology and Counselling
Queensland University of Technology
Beams Road
Carseldine, Qld.
Australia 4034
E-mail: km.white@qut.edu.au