Internet Addiction:
Personality Traits Associated with Its Development

by Dr. Kimberly S. Young and Robert C. Rodgers
University of Pittsburgh at Bradford

ABSTRACT

This study investigated personality traits of those considered dependent users of the Internet utilizing the 16PF. Results showed that 259 cases of Dependents were classified based upon modified DSM-IV criteria for Pathological Gambling. Dependents ranked high in terms of self-reliance, emotional sensitivity and reactivity, vigilance, low self-disclosure, and non-conformist characteristics. This preliminary analysis discusses how such traits may act as triggers of addiction in order to fulfill an unmet psychological need through on-line stimulation.

INTRODUCTION

The Internet has been touted as a revolutionary technology among politicians, academicians, and businessmen. However, among a small but growing body of research, the term *addiction* has extended into the psychiatric lexicon that identifies problematic Internet use associated with significant social, psychological, and occupational impairment (Brenner, 1996; Egger, 1996; Griffiths, 1997; Morahan-Martin, 1997; Thompson, 1996; Scherer, 1997; Young, 1996a, Young, 1996b, Young 1997). Because the Internet is a highly promoted tool, detection and diagnosis of addiction is often difficult. Therefore, it is essential that the skilled clinician understand the characteristics which differentiate normal from pathological Internet use (PIU). Proper diagnosis is often complicated by the fact that there is currently no accepted set of criteria for addiction much less Internet addiction listed in the Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition (DSM-IV; American Psychiatric Association, 1995). Of all the diagnoses referenced in the DSM-IV, Pathological Gambling was viewed as most akin to the pathological nature of Internet use (Brenner, 1996; Young, 1996a). By using Pathological Gambling as a model, Young (1996a) defined PIU as an impulse-control disorder which does not involve an intoxicant. This research developed an eight-item questionnaire to use as a screening instrument for PIU which modified criteria for pathological gambling (see Appendix 1).

Participants in off-line and on-line surveys were considered "addicted" when answering "yes" to five (or more) of the questions and when their behavior could not be better accounted for by a Manic Episode. Young (1996a) stated that the cut off score of "five" was consistent with the number of criteria used for Pathological Gambling and was seen as an adequate number of criteria to differentiate normal from pathological addictive Internet use. It should be noted that while this scale provides a workable measure of Internet addiction, further study is needed to determine its construct validity and clinical utility. It should also note that a patient's denial of addictive use is likely to be reinforced due to the encouraged practice of utilizing the Internet for

academic or employment related tasks (Young, 1997b). Therefore, even if a patient meets all eight criteria, these symptoms can easily be masked as "I need this as part of my job," "Its just a machine," or "Everyone is using it" due to the Internet's prominent role in our society.

Subsequent research on PIU which used on-line survey methods showed that self proclaimed "addicted" users often looked forward their next net session, felt nervous when off-line, lied about their on-line use, easily lost track of time, and felt the Internet caused problems in their jobs, finances, and socially (e.g., Brenner, 1996; Egger, 1996; Thompson, 1996). Two campus-wide surveys conducted at the University of Texas at Austin (Scherer, 1997) and Bryant College (Morahan-Martin, 1997) have further documented that pathological Internet use is problematic for academic performance and relationship functioning. Treatment centers have even initiated Computer/Internet Addiction Recovery Services such as at McLean Hospital in Belmont, Massachusetts.

Despite the increased awareness that PIU is a legitimate concern, little has been researched about the characteristics linked to "at risk" populations causing such a dependence upon the Internet (Loytsker & Aiello, 1997). These authors utilized a multiregression analysis and found that higher levels of boredom proneness, loneliness, social anxiety and private self consciousness all predict Internet addition as it was operationalized in their research. This present study attempted to expand this work to assess personality traits associated with incidence of PIU by utilizing the Sixteen Personality Factor Inventory (16PF). This investigation hopes to yield a further understanding of the personality dynamics associated with the development of PIU.

METHODS

PARTICIPANTS

Participants were volunteers who responded to: (a) nationally and internationally dispersed newspaper advertisements, (b) flyers posted among local college campuses, (c) postings on electronic support groups geared towards Internet addiction for electronic respondents (e.g., the Internet Addiction Support Group, the Webaholics Support Group), and (d) those who searched for the keywords "Internet" or "addiction" on popular Web search engines (e.g., Yahoo).

MEASUREMENTS

An exploratory survey consisting of both open-ended and closed-ended questions was constructed for this study that could be administered by electronic collection. The survey initially administered the Young's (1996a) eight-item questionnaire to classify subjects as addicted (Dependents) or non-addicted Internet users (Non-Dependents). As part of a larger study, respondents were administered the Sixteen Personality Factor Inventory (16PF). Finally, demographic information about the respondent such as gender, age, the number of years of education, and vocational background (classified as none, blue-collar, non-tech white collar, high-tech white collar) was also gathered.

PROCEDURES

The survey electronically existed as a World-Wide Web (WWW) page implemented on a UNIX-based server which captured the answers into a text file. The WWW location of the survey was submitted to several popular search engines and newsgroups available to assist on-line users in finding Web pages of interest. On-line users entering keyword searches using "Internet" or "addiction" would find the survey and have the option to follow the link to the survey in order to fill it out. Answers to the survey were sent in a text file directly to the principal investigator's electronic mailbox for analysis. Respondents who answered "yes" to five or more of the questions were deemed Dependent. All valid profiles, regardless of their score completed the entire on-line survey. The data from both sets of respondents were kept for future research which will compare responses from both groups. The qualitative data gathered were then subjected to content analysis to identify the range of characteristics, behaviors and attitudes found.

RESULTS

A total of 312 surveys were collected with 259 valid geographically dispersed profiles from Dependents. The sample included 130 males with a mean age of 31; and 129 females with a mean age of 33. Educational background was classified as 30% high school degree or less, 38% obtained an Associates or Bachelors degree, 10% obtained a masters degree or doctorate, and 22% were still in school. Vocational background was classified as 15% none (e.g., homemaker or retired), 31% students, 6% blue-collar employment (e.g., factor worker or auto mechanic), 22% non-tech white collar employment (e.g., school teacher or bank teller), and 26% high-tech white collar employment (e.g., computer scientist or systems analyst).

Results from the 16PF are listed in Table 1. Analysis of means and standard deviations show Dependents to rank high in terms of being self-reliant, a strong preference for solitary activities, and tend to restrict their social outlets. Dependents were abstract thinkers who appear less conforming to social convention and more emotionally reactive towards others. Results also show that Dependents tended to be sensitive, vigilant, and private individuals.

DISCUSSION

There are several limitations involved in this study which must first be addressed. Initially, the sample size of 259 Dependents is relatively small compared to the estimated 56 million current Internet users (IntelliQuest, 1997). Furthermore, this study has inherent biases present in its methodology by utilizing an expedient group of self-selected Internet users coupled with the questionable accuracy of on-line responses. Therefore, the generalizability of results must be interrupted with caution and continued research should include larger sample sizes to yield more accurate results. Future research efforts should also attempt to randomly select samples off-line in order to eliminate the methodological limitations of an on-line survey and to improve the clinical utility of the information gathered.

However, this preliminary analysis yields initial data which can be utilized to draw several hypotheses to use in further investigations. On-line users who pre-morbidly demonstrate highly

developed abstract thinking skills may develop addictive patterns of Internet use as they are drawn to the mental stimulation offered through the infinite databases and information available. On-line users who tend to lead a more solitary and socially inactive lifestyle may be at greater risk for pathological Internet use. Shotton (1991) was the first to hypothesize that those who suffered from computer dependency were more likely to maintain a schizoid lifestyle and feel comfortable with prolonged periods of social isolation. Thus, it is equally as likely that those who suffer from Internet addiction do not experience the same feelings of alienation others feel when spending long periods of time sitting alone. Additionally, the Internet's interactive capabilities may help the on-line user to feel a sense of connectedness among other users despite being physically alone.

Similar to research conducted on CB radio operators (e.g., Dannefer & Kasen, 1981), anonymous communication utilizing "handles" allows individuals to talk on-line with one another in unique ways. Gender, ethic background, socioeconomic status, geographic location, and marital status are hidden behind text-based interactions. On-line handles can even be used to alter one's presence via descriptions which are false such as "Rambo" for a petite woman or "Lusty Female" for a married man. Through such anonymous interaction, Internet users can engage in free expression, develop new on-line personas, and flame others (i.e., often unfiltered rude remarks). Prior research has speculated that specific applications appeared to play a significant role in the development of pathological Internet use (Young, 1996a). Dependents were less likely to control their use of highly interactive features than other on-line applications. It is possible that a unique reinforcement exists that such anonymous on-line relationships gathered from such interactive applications have the ability to provide fulfillment of unmet real life social needs (Young, 1997b).

Guarded individuals may experience more intimidation in their initial face-to-face meetings and have greater difficulty trusting others. Naturally vigilant and private persons may drawn to such anonymous interactive features of the Internet as this allows them to converse with others in uninhibited ways and form new relationships with greater ease than in real life circumstances. Anonymous electronic communication may also attract less conforming individuals who use the medium to rant radical ideologies or discuss taboo social belief systems they maintain, yet in real life either self-inhibit or find few others who share those views. If these individuals also display emotionally reactive tendencies, they may draw upon such a medium to emote in ways that are restricted by social convention. Outbursts of anger, over-sexualized comments, or blunt remarks which are typically self-monitored thoughts in real life may form the basis of typed messages to fellow on-line users in interactive forums. These specific personality traits may place an individual at a greater risk to develop PIU because the on-line world created inside their screens becomes the only outlet for such expression.

In general, these results show a discrepancy from the stereotypic profile of an "Internet addict" as an introverted, computer-savvy male (Young, 1996b) and suggests that specific personality traits may predispose an individual to develop PIU. Future research should continue to examine how personality traits influence PIU and how such interactive applications lead to addictive patterns of behavior. While it is unclear how PIU compares to other established addictions, future research should investigate if a similar personality profile may be an etiologic factor in the

development of any addictive syndrome, whether to alcohol, gambling, or the Internet. Finally, these results do not clearly indicate whether these personality traits preceded the development of such Internet abuse or if it was a consequence. Young (1996a) showed withdrawal from significant real life relationships is a consequence of PIU, which could explain the high scores indicated on the 16PF for solitary activity. Therefore, further experimentation with a more comprehensive level of statistical analysis is necessary to examine cause and effect.

References

American Psychological Association (1995). *Diagnostic and Statistical Manual of MentalDisorders - Fourth edition. Washington, DC: Author*

Brenner, V. (1996). *An initial report on the on-line assessment of Internet addiction: The first 30 days of the Internet usage survey. http://www.ccsnet.com/prep/pap/pap8b/638b012p.txt*

Dannefer, D. & Kasen, J. (1981). *Anonymous exchanges. Urban Life, 10(3), 265-287.*

Egger, O. (1996). *Internet and addiction. http://www.ifap.bepr.ethz.ch/~egger/ibq/iddres.htm*

Thompson, S. (1996). *Internet Addiction Survey. http://cac.psu.edu/~sjt112/mcnair/journal.html*

Griffiths, M. (1997). *Does Internet and computer addiction exist? Some case study evidence. Paper presented at the 105th annual meeting of the American Psychological Association, August 15, 1997. Chicago, IL.*

Loytsker, J., & Aiello, J.R. (1997). *Internet addiction and its personality correlates. Poster presented at the annual meeting of the Eastern Psychological Association, Washington, DC, April 11, 1997.*

Morahan-Martin, J. (1997). *Incidence and correlates of pathological Internet use. Paper presented at the 105th annual meeting of the American Psychological Association, August 18, 1997. Chicago, IL.*

Scherer, K. (In press). *College life on-line: Healthy and unhealthy Internet use. The Journal of College Student Development. vol. 38, 655-665.*

Shotton, M. (1991). *The costs and benefits of "computer addiction." Behaviour and Information Technology. 10(3), 219 - 230.*

Young, K. S. (1996a). *Internet addiction: The emergence of a new clinical disorder. Paper presented at the 104th annual meeting of the American Psychological Association, August 11, 1996. Toronto, Canada.*

Young, K. S. (1996b). *Pathological Internet Use: A case that breaks the stereotype.*

Psychological Reports, 79, 899-902.

Young, K. S. & Rodgers, R. (1997a). The relationship between depression and Internet addiction. CyberPsychology and Behavior, 1(1), 25-28.

Young, K. S. (1997b). What makes on-line usage stimulating? Potential explanations for pathological Internet use. Symposia presented at the 105th annual meeting of the American Psychological Association, August 15, 1997. Chicago, IL.