

## The Downside of the Web

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### Compulsive internet use, empathy, and altruism

*Reliance on the internet can become problematic, and can therefore be related to deficits in pro-social behaviours and the associated cognitive and emotional processes. This research examined the relationship between compulsive internet use, empathy, and altruistic behaviours. It was hypothesized that a positive correlation would exist between measures of empathy and altruism, and a negative correlation between compulsive internet use and both of the measures of pro-social behaviour. A survey study was conducted that compared scores on the Compulsive Internet Use Scale, The Toronto Empathy Questionnaire, and the Self-Report Altruism Scale. Participants were 161 York University students with a mean age of 22; 65% were female. Results support the three hypotheses, indicating the existence of a significant correlation, as predicted. Implications regarding workplace practices and quality of life are discussed.*

**Keywords:** compulsive internet use, empathy, altruism, pro-social behaviour, quality of life, organizational selection

#### INTRODUCTION

Reliance on the internet has significantly increased over the past two decades. Statistics Canada (2010) indicates that the percentage of daily users grew from 63.7% in 2005 to 75.1% in 2009. This represents an increase of 11.4% in a span of just four years, and it can be inferred that the percentage of daily users is much higher today. Similar trends are observed in the Netherlands where more than 80% of adolescents between the ages of 12 and 25 use the internet every day, with 97% reporting using the internet at least once a week (Bethlehem, 2005).

Compulsive internet use is a phenomenon that is characterized by individuals becoming overly attached to the use of the internet, which results in psychological, social, and professional dysfunctions (Meerkerk, 2007). This concept is relatively young and is still being explored by a great number of researchers. The literature refers to this construct as compulsive internet use, internet addiction, pathological

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internet use, problematic internet use, internet dependency, and excessive internet use. These constructs are synonymous with one another, with only slight variations in how the phenomenon is measured. For the purpose of this paper, this construct will only be referred to as compulsive internet use (CIU).

Meerkert (2007) provides a functional definition of CIU in terms of the traits and behaviours that are present. CIU involves a loss of control, meaning that individuals spend more time online than intended despite previous attempts to stop. Compulsive internet users also become preoccupied with the internet, which is exhibited by thoughts about the internet when offline, or by preferring to engage in online activities instead of offline activities. Compulsive internet users also tend to use the internet as a coping mechanism or mood modifier to relieve negative states. Lastly, CIU is marked by conflicts with significant others due to internet use, which are accompanied by guilt and remorse (Meerkert, 2007). Studies have found that at any given time 4% to 8.1% of university students could be considered compulsive internet users (Morahan-Martin & Schumacher, 2009).

Current research indicates that a relationship exists between CIU and several psychological and behavioural constructs. For example, Caplan (2005) suggests that there is a relationship between CIU and a lack of various subsets of social skills. Engelberg and Sjöberg (2004) corroborate this finding by concluding that those considered compulsive users lack the emotional and social characteristics of high emotional intelligence. At the core of these findings is the claim that increasing dependence on the internet cuts off users from genuine social relationships and interactions, ultimately having an adverse effect on their ability to socialize effectively in natural face-to-face interactions.

A major component of effective interpersonal communication is the ability to experience empathy. Empathy is an emotional component where individuals have the ability to experience the emotions of others. It also has a cognitive component, in which individuals deliberately attempt to decentre themselves from a normally ego-centred perspective to take on the perspective of another (Davis, 1994). Taken together, this construct allows individuals to better assess and interpret the intentions of others, thereby increasing the accuracy of their communications and social interactions.

Current literature shows that mirror neurons, which are important components in the development and maintenance of our ability to experience empathy, are primarily activated during direct face-to-face interactions (Iacoboni, 2007). Due to the fact that computer use replaces the time involved in face-to-face interactions, it also reconfigures the neural networks responsible for controlling empathy and one-on-one social skills (Blakemore & Chowdhury, 2006; Nie & Hillygus, 2002). Furthermore, McEwen (2008) states that stress from prolonged internet use reconfigures neural networks in the hippocampus, amygdala, and prefrontal cortex, which control mood, thought, and empathy. Therefore, it can be said that CIU can

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have negative effects on interpersonal skills by affecting one's ability to experience empathy.

Another interesting finding indicates that CIU in adolescents is related to an increase in anti-social behaviour and a decrease in pro-social behaviour. According to Ma, Li, and Pow (2011), pro-social behaviours usually involve sharing, cooperating, helping, feeling empathy, and caring for others in the form of altruism. Altruism is defined as actions that are not motivated by an external reward or by an avoidance of punishment that improve the wellbeing of others at a cost to oneself (Davis, 1994). Interestingly, the most frequently proposed explanation of altruistic behaviour is attributed to a heightened sense of empathy. It is presumed that if someone is in need, empathetic emotions, which include sympathy and compassion, become distinguished from the more self-oriented emotions of discomfort and anxiety. The empathy-altruism hypothesis maintains that feelings of empathy "evoke motivation with an ultimate goal of benefiting the person for whom the empathy is felt" (Batson & Powell, 2003, p. 474).

It seems clear that a relationship exists between empathy, altruism, and a great host of positive aspects ranging from overall well-being and quality of life to an individual's emotional intelligence and ability to establish meaningful relationships. Furthermore, there seems to be a reciprocal relationship between CIU and a variety of these interpersonal skills and pro-social behaviours. From one side, there is evidence suggesting that exposure to digital media, including the internet, reconfigures neural pathways that are responsible for interpersonal skills; from the other, there is evidence supporting the hypothesis that people with certain traits or dispositions are more likely to engage in CIU. Regardless of the approach to the question, it seems likely that there exists a relationship between CIU and traits such as empathy and altruism.

Because research is lacking on these specific types of associations, the goal of the present study will be to investigate these relationships. Three hypotheses are tested: 1) individuals who report greater empathy will also report a greater tendency to engage in altruistic behaviour; 2) compulsive internet use will be associated with lower levels of altruistic behaviours; and 3) compulsive internet use will be associated with lower levels of empathy.

## **METHOD**

### **Participants**

One hundred sixty-one participants were surveyed from January to February 2014. All of the participants were from York University, located in Toronto, Canada. Of the studied sample, 105 (65%) were female and 56 (35%) were male. The ages of the participants ranged from 18 to 44, with a mean age of 21.6 (SD = 3.49). The mean year of study at the university was 2.97 (SD = 1.30), with the exclusion of one

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participant that did not report this information. All of the participants were anonymous and were chosen at random from the general campus population.

### **Materials**

The Compulsive Internet Use Scale (CIUS) developed by Meerkert (2013) consists of 14 questions regarding personal internet use. It is answered on a five-point Likert scale, which assesses the frequency with which the subject engages in such scenarios, ranging from “Never” to “Very Often.” Total scores on this measure ranged from 0-56, with higher scores indicating greater compulsive internet use. According to Meerkert (2013), the items on this scale tap into the loss of control associated with internet use, preoccupation with the internet, withdrawal symptoms associated with not using the internet, using the internet to cope or to modify mood, and conflicts in daily life due to the use of the internet. The reliability of this measure was high ( $\alpha = 0.89$ ).

The Toronto Empathy Questionnaire (TEQ), developed by Spreng, McKinnon, Mar, and Levine (2009), consists of 16 items that are measured on a five-point Likert scale. The items ask the participants to identify how the statement applies to themselves, ranging from “Never” to “Always.” Scores ranged from 0-64, with higher scores indicating a more empathetic disposition. This scale mostly targets the emotional aspects of empathy; however, cognitive components are also present. Emotional aspects refer to empathetic concern for others, while cognitive components emphasize the ability to take on perspectives of others and predict others’ behaviour or mental state (Spreng et al., 2009). This measure was found to have high reliability ( $\alpha = 0.87$ ) as well as high validity.

The Self-Report Altruism Scale (SRA) was developed by Rushton, Chrisjohn, and Fekken (1981) and consists of 20 items. Participants are asked to rate the frequency with which they engage in the altruistic behaviours using a five-point Likert scale ranging from “Never” to “Very Often.” Scores ranged from 0-80, with higher scores indicating a greater frequency of altruistic behaviours. The developers of the SRA note that the score on this test allows a better-than-chance prediction in terms of the subject’s future behaviours, and was corroborated by numerous studies involving peer ratings of the subject, as well as a variety of other pro-social values. The internal consistency of this measure was high ( $\alpha = 0.89$ ).

### **Procedure**

This was a correlational study which followed a survey-based design. Each participant received a package of the questionnaires that they were asked to complete. The order of these tests was counterbalanced using a Latin square design, so that neither the order of the tests nor participant fatigue would influence the scores on one test over another. The questionnaire packages were preceded by a consent form and a one-page general demographic questionnaire. The complete packages

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were distributed to students at York University who volunteered their time to complete them. Participants were sought out at various parts of the Keele Campus including, but not limited to, Vari Hall, Central Square, and Curtis Lecture Halls.

Questionnaires were manually graded using scoring keys that were unique to each questionnaire. This was done so that each participant would have a final, quantifiable score associated with each questionnaire. Scores were not dichotomized to represent distinct groups in relation to the constructs. All of the scores existed on a continuous scale, with the minimum and maximum scores being represented by the total spread of the questionnaire. These scores were then analyzed using SPSS software to determine the strength and significance of the correlations.

### RESULTS

Scores on the CIUS had a mean of 21.81 (SD = 11.02). The TEQ yielded a mean of 45.77 (SD = 8.55). Lastly, the SRA produced a mean score of 34.95 (SD = 12.24). All of the questionnaires produced a natural bell-curve distribution.

A Pearson correlation was used to examine the relationship between altruism, empathy, and compulsive internet use. Scores on TEQ were significantly correlated with scores on the SRA,  $r(159) = .34, p < .01$ . Scores on the CIUS were significantly negatively correlated with scores on the SRA,  $r(159) = -.22, p < .01$ . Lastly, scores on the CIUS were significantly negatively correlated with scores on the TEQ,  $r(159) = -.32, p < .01$ . The effect size was measured using Cohen's conventions of interpreting the Pearson correlation. All of the correlations established a medium effect size.

### Discussion

The results of the study provide support for all three of the hypotheses being studied. It was found that individuals who tend to have high levels of altruistic behaviour are also likely to be highly empathetic. It was also found that CIU was negatively related to measures of both altruism and empathy.

The relationship between empathy and altruism was a result that supports the empathy-altruism hypothesis. The ability to understand and share the feelings of another appears to be an important aspect in one's motivation to act in a selfless manner. It is important to note, however, that while the empathy-altruism hypothesis postulates that altruistic behaviours will be motivated toward the subject for whom empathy is felt, this research cannot bridge that gap. Therefore, the results of this study only point to the relationship between one's empathy and the likelihood of altruistic behaviour in a general manner.

The finding that compulsive internet use was related to decreased levels of empathy and altruism was also expected, as current literature points toward this link. Although it cannot be deduced whether CIU reconfigures neural networks responsible for empathy and altruism or that individuals low on these qualities are

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more likely to engage in CIU, it is still an interesting and significant finding that establishes a link that has previously been unexplored in the literature.

### **Limitations**

The social-desirability bias could have influenced the results of this study. Since constructs such as empathy, altruism, and CIU require taking a stance that might be viewed unfavourably by others, respondents may have answered in a socially desirable manner that may not have been truly representative of themselves. Furthermore, because respondents volunteered their time to participate in the study without any evident gain to themselves, this behaviour could be considered altruistic in itself. Following the empathy-altruism hypothesis, this also means that participants may have experienced some empathy towards the researcher that motivated their decision to participate. Both this experience of empathy and the engagement in an altruistic act may have put the participants in a frame of mind that is more favourable in regard to these constructs. This could have led them to evaluate their levels of empathy and altruism as greater than what they truly are.

The definition of CIU may have also influenced the result. The questionnaire asks participants to rate a variety of items as they relate to personal use of the internet, meaning outside school or work, without distinguishing between the different types of activities in which they may be engaging. Some researchers argue that certain internet behaviours are beneficial while others are not (Ma, Li, & Pow, 2011). Scores on the CIUS may be skewed by instances in which respondents were referring to positive internet behaviours because this distinction in the measure is vague.

Lastly, it is important to note that a convenience sample of York University students was used for this study, thus a generalization with reference to the overall population cannot be made. Also, because the study was correlational in nature, the directionality of the relationship between these constructs cannot be established.

### **Implications and Future Research**

Research by Asthana (2009) has shown that dispositions of empathy and altruism, amongst other things, are key components of one's subjective experience of happiness and overall quality of life. Furthermore, these dispositions are also related to greater overall health and longevity (Post, 2005). Throughout the literature these constructs are always defined in a positive manner, whether it is in relation to the individual exhibiting them or the effect that they have on the community. These constructs are ultimately related to one's overall well-being and are beneficial to society as they are a major part of pro-social behaviour on a general level.

As mentioned earlier, empathy plays a major role in one's overall emotional intelligence (Engelberg & Sjöberg, 2004). Empathy is related to both the verbal and the non-verbal sensitivity of others' intentions in communication (Davis, 1994). This capacity to understand another's point of view is, for Mullen (2009), a "critical

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element to moral reasoning, ethical sensitivity, social influence, and the development of healthy interpersonal relationships” (p. 2023). The author also notes, “organizations (and professions) dependent on building trust-based relationships with members of other organizations may have an increasingly hard time getting new members to engage outsiders face-to-face” (p. 2010). This is because internet-mediated communication is on the rise, with face-to-face interactions becoming rarer over time. Mullen (2009) concludes that those who have an over-reliance on computer-mediated communication may be ill-suited for high-trust professions involving the establishment of face-to-face relationships.

Because research has shown that empathy and altruism are important characteristics of individuals that are high in emotional intelligence, and that these individuals are more likely to be selected for a variety of organizational and professional positions, measures of CIU could be used as meaningful predictors of these traits (Davis, 1994; Mullen, 2007). Therefore, the CIUS could be used as a selection tool in the recruitment and selection process for jobs that require interpersonal, face-to-face communication.

Another implication of this research pertains to the overall quality of life that is associated with individuals high in CIU. It has been established in previous studies that one’s happiness, life satisfaction, and longevity are all related to dispositions of altruism and empathy (Asthana, 2009; Post, 2005). Taken together with the findings of the current study, as well as with Blakemore and Chowdhury’s (2006) research, which indicates that over-exposure to digital media changes the physiological functioning of neural pathways responsible for empathy, it could be hypothesized that interventions aimed at reducing compulsive internet use could have a therapeutic effect in enhancing one’s quality of life.

This research calls for a development of an intervention program that would assist individuals considered compulsive or problematic users of the internet through the increase of pro-social behaviours. Furthermore, this intervention program would serve a dual purpose of enhancing pro-social tendencies and decreasing maladaptive internet use. The effects of such an intervention could be hypothesized to increase satisfaction with life as well as enhance traits related to emotional intelligence that could aid with employment.

Future research should also attempt to establish a causal relationship between one’s levels of empathy, altruism, and CIU. This would allow for a more direct representation of these relationships and would aid in the formation of the kind of intervention program mentioned above. Furthermore, it would be important to investigate variations in these constructs that are a result of generational differences. The present study was not representative of the population as a whole because the evaluated sample had a mean age of 22. It would be interesting to investigate the relationships of the CIU in different age groups, and to compare them to the results in this cohort.

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