Computers in Human Behavior 52 (2015) 39–48

Contents lists available at ScienceDirect

Computers in Human Behavior

journal homepage: www.elsevier.com/locate/comphumbeh

Virtual empathy: Positive and negative impacts of going online upon empathy in young adults

L. Mark Carrier *, Alexander Spradlin [1], John P. Bunce [2], Larry D. Rosen

Department of Psychology, California State University Dominguez Hills, Carson, CA 90747, USA

ARTICLE INFO

Article history:

Keywords:
Behavior
Virtual empathy
Internet
Personality
Real-world empathy

ABSTRACT

People can show empathic responses to others online, but at the same time empathy has been declining in young people since technology-based communication has become prevalent. Displacement of face-to-face time by online activities would be expected to negatively impact empathic skills. Since there is little direct empirical research on this topic, the present study sought to determine the nature of the relationship between Internet usage and empathy. More than 1000 young adults completed an anonymous online questionnaire that asked about daily media usage, real-world empathy, virtual empathy, social support and demographic information. The results showed that, in general, going online had very small negative impacts upon cognitive and affective real-world empathy and actually improved time spent in face-to-face communication. Video gaming reduced real-world empathy in both females and males but did not reduce face-to-face time. Also, virtual empathy was positively correlated with real-world empathy, although virtual empathy scores were lower than real-world empathy scores for both sexes. Finally, both real-world empathy and virtual empathy are positively related to social support but real-world empathy demonstrated a 5–6 times stronger relationship. The findings show that spending time online does not displace face-to-face time nor reduce real-world empathy, and suggest that perhaps the lack of nonverbal cues in the online world contributes to overall lower levels of virtual empathy compared to the real world. The negative effects of being online upon empathy appear to be due to specific activities such as video gaming rather than total quantity of online time.

1. Introduction

A mutual friend of the present authors recently posted on Facebook about her mother's surgery for cancer: "Wish I could have the surgery tomorrow so my mom didn't have to. :/ screw you cancer. You suck. Your getting cut the hell outta my mom's kidney tomorrow!!!!!!! buh-bye! So long! Good riddance!" The conversation on Facebook that followed depicted understanding of our friend's emotions and compassion for her situation. "...prayers her way...," "Send her my love pls, she is in my thoughts!!!:)", and "I hope all goes well:) be strong" were just some of the reactions from her Facebook connections. Empathy has been defined as the understanding of and sharing in another's emotional state or context (Cohen & Strayer, 1996), as well as the behavior of comforting others (Caplan & Turner, 2007). The example shows that it is possible to have empathy—"virtual empathy"—through computer-mediated communication. Further, it has been proposed that electronic communication environments such as social media could facilitate empathy through the easy and frequent access to other people in similar situations (Caplan & Turner, 2007).

Studies have identified empathic behavior online on health organization websites and health support communities. For example, Nambisan (2011a, 2011b) administered questionnaires to users of online health communities at health care organization websites, finding that part of the user experience involved perceived empathy. Pfeil and Zaphiris (2007) did a content analysis of 400 messages from a depression support community and developed a coding scheme to analyze empathy online. The researchers found that empathy was expressed and facilitated in this online discussion board. They observed a pattern of virtual empathy in which self-disclosure triggered empathic communication that consisted of empathic responses that were either more self-disclosing messages or support messages. Preece (1999) analyzed the content of 500 messages from an online bulletin board connected to a

* Corresponding author. Tel.: +1 310 243 2325.
E-mail addresses: lcarrier@csudh.edu (L.M. Carrier), a.spradlin@email.wsu.edu (A. Spradlin), jbunce@ucmerced.edu (J.P. Bunce), lrosen@csudh.edu (L.D. Rosen).
[1] Present address: Department of Psychology, Washington State University, USA.
[2] Present address: Department of Psychological Sciences, University of California, Merced, USA.

http://dx.doi.org/10.1016/j.chb.2015.05.026
0747-5632/

website related to damage to the anterior cruciate ligament. She divided the messages into five types: non-empathic, personal narrative, empathic, question/answer and other. Strikingly, empathic messages made up 44.8% of the postings. Finally, Preece and Ghozati (2001) examined messages in 100 online communities and found that many of them contained empathic messages, with empathy being high in support communities and low in some other types of online communities (e.g., religious). Thus, the online world can be empathic and can have people showing empathic responses.

But, does going online affect empathy? Although just being online does not seem to eliminate empathy, Konrath's (2013) review of personality traits in the era of the Internet showed declines in some personality variables, including empathy. Research showed lower empathy scores for contemporary college students in comparison to college students over the last 30 years (Konrath, O'Brien, & Hsing, 2010). Konrath raised the possibility that the declines in empathy could be related to people spending time online and engaging in superficial interactions with others. Small and Vorgan (2008) said that being online reduces an individual's capacity for empathy. Primarily, this claim was based on the assumption that going online reduces the amount of time spent face-to-face with others. For sure, elements of non-verbal communication essential to reading emotions, such as facial expressions, body posture, eye contact, gestures, and touch, are missing from texts, instant messages, and social networking conversations. However, Caplan and Turner's (2007) description of online comforting behavior argued that being online can support empathy or even increase it.

Since there has been very little past empirical research on this issue, the present study sought to determine the nature of the relationship between Internet usage and empathy. We used a large sample of members of the "Net Generation" to compare people's empathy levels—using a standard self-report real-world empathy measure and an adapted version to assess online or virtual empathy—to how much time those people spend online. The Net Generation is comprised of the first children, "tweens," and teenagers—now grown up—to have been raised in a world where nearly everything is computerized (Rosen, 2007; Tapscott, 1997). More specifically, the present study tested the claim (Small & Vorgan, 2008) that Internet usage affects empathy negatively though a reduction of face-to-face time. This led to the following:

> Research Question 1: Does going online affect empathy through a reduction of face-to-face time?

If Small and Vorgan (2008) are right, then there should be an inverse relationship between going online and empathy, mediated by a reduction in face-to-face interactions as a result of going online.

Additionally, the likelihood that people can show empathy online in some form led to the goal of comparing empathy online to real-world empathy. We used the adapted measure of virtual empathy and compared virtual empathy to real-world empathy and generated the following research question:

> Research Question 2: How does virtual empathy compare to real-world empathy?

Based on the views of Small and Vorgan (2008), virtual empathy should be lower than standard empathy, and Internet exposure should be inversely related to virtual empathy. On the other hand, if others such as Caplan and Turner (2007) are right, then there should be no relationship, or even a positive relationship between time spent online and empathy. If that is true, then virtual empathy should be equal to or higher than real-world empathy and Internet exposure should either not be related to or be positively related to virtual empathy.

2. Method

2.1. Participants

An initial sample of 1726 adult members of the Net Generation (i.e., born since 1980) started an online anonymous questionnaire hosted on SurveyMonkey.com. All participants were Internet users, recruited by word-of-mouth through General Education courses at a university in southern California. Students in the courses, as well as their friends and relatives, were eligible to participate in the study. One thousand, three hundred and ninety participants completed the entire questionnaire. No incentive or compensation for the participants was provided; however, students in the courses received extra credit for recruiting participants. The participants' mean age was 23.39 years ($SD = 3.11$). The sample consisted of 806 females (58.0%) and 584 males (42.0%). The ethnic/cultural composition of the sample was 46.3% Hispanic ($n = 643$), 21.6% Caucasian ($n = 300$), 14.7% Black ($n = 205$), 12.9% Asian ($n = 179$), and 4.5% "Other" ($n = 63$).

2.2. Materials and apparatus

Daily Media Usage. Use of the Internet, along with engagement in other technology-based activities, and talking face-to-face was measured using a Daily Media Usage scale that was previously used by Carrier, Cheever, Rosen, Benitez, and Chang (2009) and Rosen, Chang, Erwin, Carrier, and Cheever (2010). In addition to the items used in the original studies, the present study included several detailed items related to video gaming. The reason for adding these items was to measure variants of video game use that did or did not involve socializing with others. Playing games on a gaming console alone, with others in the same room, and with others in a different location (i.e., over the Internet) were queried. Also, playing games on the computer alone, with others in the same room, and with others in a different location were queried. Overall, the scale presented participants with 24 activities, each of which was rated to indicate how many hours the activities were performed on a "typical day." The ratings were provided using an 9-point scale that included: "Not at all," "Less than 1 h/day," "1 h/day," "2 h/day," "3 h/day," "4–5 h/day," "6–8 h/day," "9–10 h/day," and "More than 10 h/day." The final set of activities that was queried is shown in Table 1. Each response was recoded into hours per day using the response category label (or the midpoint of the response category label range). Responses of "More than 10 h/day" were recoded as 11 h per day.

Basic Empathy Scale. Jolliffe and Farrington's (2006) Basic Empathy Scale (BES) was used to measure participants' empathy levels. This self-report scale, designed for adolescents, is comprised of 20 items that measure the cognitive (9 items) and affective aspects of empathy (11 items). The cognitive aspect of empathy relates to a person's ability to recognize and comprehend the emotions of another person. The affective aspect of empathy relates to a person's ability to experience the emotions of another person. Higher scores on each indicate more empathy. Items on the scale were rated on a 5-point, Likert-type rating scale, with 1 being "Strongly Disagree," 5 being "Strongly Agree," and 3 being "Neutral." Some of the items require reverse coding. An example item from the affective aspect of empathy is "My friend's emotions don't affect me much" (reverse coded). An example item from the cognitive aspect of empathy is "I find it hard to know when my friends are frightened" (reverse coded). Joliffe and Farrington found evidence among English adolescents to support the