Knowing when not to use the Internet: Shyness and adolescents' on-line and off-line interactions with friends [☆]

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ABSTRACT

The goal of the study was to explore the content of on-line and off-line peer interactions among shy and non-shy adolescents. Participants were 148 ten-to-eighteen year old adolescents in Rome, Italy ($n = 98$) and Ottawa, Canada ($n = 50$). Participants completed self reports of shyness and loneliness and web logs of their interactions with friends both in person and on-line. Among the results, there was little general difference in the general content and emotion expressed during the two modalities of interaction with friends, both of which were used in a wide variety of ways. Importantly, shy participants used the on-line modality more extensively than their non-shy counterparts to express negative emotions and to convey content regarding negative exchanges with peers. Such use of electronic communication may be an important contributor to their loneliness.

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1. Introduction

In recent years, the use of computers and the Internet has increased, particularly among adolescents. From 2004 to 2009, the average amount of time 8- to 18-year-olds in the US spend on a computer has increased from approximately 1 h, to an hour and a half daily (Rideout, Foehr, & Roberts, 2010). At age 6, about 77% of children have already used a computer, 15% of whom do so daily (Calvert, Rideout, Woolard, Barr, & Strouse, 2005). Computer use increases throughout childhood and adolescence, where children typically use a computer for entertainment purposes 46 min/day, and adolescents use computers an average of 1 h and 39 min/day for entertainment. The increase in the use of technology, over time, as well as throughout childhood, has prompted researchers to examine what children and adolescents are doing on the computer and on-line.

Adolescents use computers and the Internet for many reasons, such as to complete homework, play games, watch videos, and look at pictures (Rideout et al., 2010). However, much time on-line is spent communicating with peers. Rideout et al. (2010) found that 44% of the time spent on-line is used to communicate in some

way with other adolescents. Specifically, 25% of time on-line is spent on social networking sites (i.e. FaceBook, MySpace), 13% of time is spent instant messaging, and 6% of time is spent e-mailing. Approximately 40% of adolescents will spend almost an hour a day on social networking sites (Rideout et al., 2010).

Adolescents tend to communicate privately (i.e. instant messages or e-mail), and mostly with individuals they are also friends with off-line. In these communications, they talk primarily about everyday topics like other friends and gossip (Gross, 2004). However, communications on-line are different in many ways from face-to-face communications. For example, electronic communication lends itself to particular styles of communicating *emotions*, some of which may be maladaptive. Research comparing different types of communication indicate that computer mediated communications have higher rates of informal speech and flaming (i.e., online communication with hostile intent) than face-to-face and videoconferencing communications (Castella, Abda, Alonso, & Silla, 2000). Interestingly, individuals are more apprehensive and more careful with wording when they spread rumors on-line, and make more attempts to add credibility to online rumors when they are of a harmful nature (Bordia & Difonzo, 2004).

Considering so much of time spent on the Internet is spent communicating with others, the effects that communication on the Internet has on social interactions, friendships, and other aspects of functioning has become of interest to many researchers. In the

present study, we focused on *shy* adolescents, who tend to experience difficulties in their off-line peer interactions.

1.1. Electronic communication and the friendships of shy/socially anxious youth

Shy adolescents tend to be nervous and anxious in novel social settings and embarrassed and self-conscious when they perceived themselves as being socially-evaluated (Rubin, Coplan, & Bowker, 2009). Shy and socially-anxious adolescents experience difficulties in their social interactions, and are prone to rejection, victimization, and internalizing problems (e.g., Bowker & Raja, 2011). However, considerably less in known about how shy adolescents interact on the Internet than in their face-to-face encounters with peers.

There have been several reasons proposed for why shy and socially anxious individuals might use the Internet as a substitute for face-to-face social interactions. One reason might be that the Internet offers an alternative means of occupying ones time through non-social uses of the Internet like information seeking or playing games, exacerbating social withdrawal. However, it is also possible that shy individuals use the Internet to enhance relationships by finding friends, and building friendships by facilitating social interactions that might be considered more difficult face-to-face (Schneider & Amichai-Hamburger, 2009). There are two competing theories to explain social interactions on-line between socially anxious and non-anxious individuals. The first, the social compensation hypothesis, states that socially anxious adolescents turn to the Internet to communicate with and form relationships with peers, because these interactions are more difficult in person (Schneider & Amichai-Hamburger, 2009). The other theory is the rich-get-richer hypothesis. This hypothesis suggests that extroverted individuals who are already comfortable in face-to-face social situations will use the computer and Internet to further their social opportunities (Schneider & Amichai-Hamburger, 2009). There is evidence that both theories may be, in part, correct.

In support of the rich-get-richer hypothesis, Lee (2009) showed that adolescents who had strong social relationships when they were young used Internet communications most often, and these communications in turn predicted closer friendships later on. Higher ratings of self-reported friendship quality have been associated with greater Internet use (Willoughby, 2008). Similarly, longitudinal research shows that instant messaging is positively linked with the quality of adolescents' already existing friendships (Valkenburg & Peter, 2009). Lower levels of social anxiety and higher levels of on-line chatting were associated with higher friendship quality, and higher levels of social anxiety were associated with steeper declines in friendship quality over time (Desjarlais & Willoughby, 2010). Further, some studies show that youth with social anxiety are less likely to communicate and make friends on-line (Pierce, 2009; Valkenburg & Peter, 2007). It has also been suggested that increased use of the Internet causes increased loneliness in adolescents (Prezza, Pacilli, & Dinelli, 2004). Sharabi and Margalit (2011) found that using the Internet to support already existing relationships predicted decreased loneliness, whereas virtual friendships alone predict greater loneliness. Despite this evidence that the Internet may represent another medium for socially anxious adolescents to feel isolated, other studies seem to indicate the contrary.

Although less likely to communicate on-line compared to their non-anxious counterparts, socially anxious adolescents also report being more comfortable using on-line communication to talk to others (Pierce, 2009; Valkenburg & Peter, 2007). Furthermore, self-reported lonely children and adolescents use the Internet more frequently than non-lonely children to meet new people (Bonetti, Campbell, & Gilmore, 2010). Moreover, socially anxious adolescents prefer the Internet to communicate about personal and intimate topics more than non-lonely children, and feel these contacts are more valuable for intimate self-disclosure (Bonetti et al., 2010; Pierce, 2009; Valkenburg & Peter, 2007). Among children who report low friendship quality, increased time spent instant messaging has been associated with less depression and social anxiety over time (Selfhout, Branje, Delsing, ter Bogt, & Meeus, 2009). Desjarlais and Willoughby (2010) found that boys, but not girls, with higher levels of social anxiety reported more positive friendship quality if they participated in on-line chatting compared to those who did not participate in chatting. Also, non-anxious children report being less lonely if they communicate with friends both on and offline compared to children who use only one or none of these methods to communicate (Baiocco et al., 2011b). It appears that online communications provide shy and socially anxious youth with the means of having close friendships and fulfills the need for social interactions that they might not otherwise have.

Given the worldwide proliferation of the new technology, individual differences in relating to others may be continued on line. On the other hand, the virtual environment may serve as a refuge in which interactions that are discouraged in face-to-face communication for members of a particular gender or culture (Schneider & Amichai-Hamburger, 2009). In terms of the settings in which our study was conducted, between 93% and 95% of Canadian adolescents use the Internet (Willoughby, 2008). Similar rates are seen in Italian adolescents, where 90–96% use computers (Prezza et al., 2004). According to the European Commission Safer Internet Programme the mean age of first Internet use in Italy is 10 years of age, as in other European Countries such as Greece, Turkey, Cyprus, Austria, and Portugal (Livingstone, Haddon, Görzig, & Ólafsson, 2011). Milani, Osualdella, and Di Blasio (2009) reported that 77.9% of Italian preadolescents and adolescents (11–18 years) use the Internet, and that 30% of Internet users in the country are between 14 and 24 years old. They found that over a third of the adolescents sampled displayed signs of problematic Internet use. This sub-group reported more troubled interpersonal relationships and less effective coping strategies than did the other participants. Of the participants, 36.7% showed signs of problematic Internet use. These adolescents use the Internet for many hours per week; most utilize dysfunctional coping strategies and show worse interpersonal relations than peers who do not show signs of problematic Internet use. Moreover, Italian adolescents appear to be particularly attracted by the technologies of social communication, which offer them the opportunity to interact with others while maintaining anonymity and to experience a sense of community and social acceptance. More recent data, working with a sample of 684 adolescents (14–19 years) found that 93.1% have an Internet connection at home and 60.2% can use the computer in their bedroom. Adolescents usually spend 2 h on-line a day during the week and a little more on the weekend. Compared with female adolescents, male adolescents spent more time on the Internet overall (Baiocco, Laghi, Carotenuto, & Del Miglio, 2011a).

Although both adolescent girls and boys use the Internet to communicate with peers, there appear to be some gender differences in how they communicate and why. Some research shows that girls use the Internet more frequently to communicate than boys (Bonetti et al., 2010; Rideout et al., 2010). Girls spend more time than boys on social networking sites. Both boys and girls visit these types of sites a similar number of times each day, but girls will spend more time on them at each visit (Rideout et al., 2010). They also communicate about different subjects, where girls communicate more about shopping, clothes, their feelings, relationships and gossip, while boys communicate more about videogames and sports (Bonetti et al., 2010). In contrast, some research shows boys use the Internet to communicate more frequently than girls whereas girls report more contacts with friends off-line, and closer, more intimate friendships (Baiocco et al., 2011b). However, other research