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Shyness and the internet: Social problem or panacea?

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ABSTRACT

Shyness is a debilitating experience for a large proportion of the population. Shyness can be defined as a form of excessive self-focus, a preoccupation with one's thoughts, feelings, and physical reactions and may vary from mild social awkwardness to total social inhibition. This article explores shyness, its prevalence and effects and examines the role of the internet in the experience and expression of shyness. Compared to research on shyness in the offline world, empirical work on shyness online is relatively scarce. Nevertheless, the research that does exist can be categorized into two seemingly contradictory positions. The first position views the internet as an isolating medium, attractive to shy people and enhancing shyness. The second position describes the internet as an empowering medium, offering opportunities to experience disinhibition and social competence. This paper considers how the two positions might be reconciled. In addition, in order to reduce inconsistencies in the literature and to determine how shy people use the internet, it is suggested that more research, incorporating objective measures and experimental methodologies, is needed.

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1. Introduction

Shyness is both pervasive and problematic for those who suffer it. Some reports suggest that the prevalence of shyness is increasing (Carducci & Zimbardo, 1995). These increases have been attributed to growing social isolation and the progressively mediated nature of communication (Henderson & Zimbardo, 1998a). At the same time, it is often taken for granted that new communication technologies

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facilitate disinhibition and increase social confidence. Sonja Utz (2000) for example, in her examination of friendship online, concluded that “the potential of virtual worlds for overcoming shyness has long been considered and now appears to be somewhat conclusive” (p. 16).

In this review we examine the nature of shyness, its prevalence and impact. We also evaluate the theoretical and empirical literature related to shyness online. We ask how the internet affects shyness and explore the existing support from two seemingly different viewpoints. Does the internet increase shyness and present a particular risk for shy individuals, further isolating them from others? Or can the internet, through its unique features, enhance feelings of social competence and facilitate interpersonal interaction for shy people?

2. What is shyness?

Although widely used, shyness is a difficult term to define. In everyday expression, the term is used to describe reactions and feelings to social interactions and important facets of a person's character (Crozier, 2002). Although shyness is a term commonly used to interpret behavior, its widespread use means that precise meaning is often lacking; shyness is a label that is often applied but not so clearly understood. Indeed some psychologists are not even convinced that shyness is anything more than a common language label used to define an aspect of personality.

One of the primary difficulties in providing a precise definition of shyness is its breadth. Shyness has been described as a preoccupation with one's thoughts and reactions that leads to discomfort in interpersonal situations (Henderson & Zimbardo, 1998a). As such, the construct spans a wide psychological continuum, ranging from mild discomfort and awkwardness in the presence of others, through to traumatic episodes of anxiety that disrupt an individual's life (Zimbardo, 1977). Despite its conceptual breadth, research has identified several core characteristics of shyness. Shyness entails quietness, inhibited behaviour, self-consciousness and apprehension about being negatively evaluated in social situations (Zimbardo, 1977). It involves feelings of awkwardness, concern, tension, and discomfort when confronted with strangers or casual acquaintances (Cheek & Buss, 1981).

Underlying shyness is an extreme concern with self-presentation. Self-presentation theory is based on the assumption that in social situations individuals attempt to control images of self or identity-relevant information (Stritzke, Nguyen, & Durkin, 2004). Shy individuals are motivated to create a desired impression in others, but lack the confidence that they will be able to do so. This leads to a tendency to adopt a cautious and protective self-presentation style during social interactions. The relationship between shyness and self-presentation can be conceptualized in the following formula: $SHYNESS = M \times (1 - p)$. In this formula, adapted from Leary (1996), M refers to impression motivation or the degree to which an individual is motivated to make a desired impression on others, and p is the subjective perceived probability of being able to make the desired impression. Thus, according to this principle, an individual's level of shyness increases when they are motivated to make a desired impression on others, but doubt they will successfully be able to do so. For example, two individuals may interact with the same person. Both individuals may be highly motivated to make a desired impression. However, the first individual may not experience any anxiety or symptoms of shyness, because their perceived probability of making the desired impression is high. In contrast, the second individual may believe that they will be unable to make the desired impression, therefore leading to higher levels of shyness. This formula represents a useful mechanism to predict an individual's level of shyness and help describe why shyness occurs.

Although shy people display reticent outward behaviour, internally, they are in a state of turmoil. Shy individuals are excessively self-focused and preoccupied with their own thoughts and reactions (Henderson & Zimbardo, 1998a) and how others perceive them. Potential contributions to conversations are rehearsed but are abandoned in anticipation that they will be thought banal, inadequate, or inappropriate (Crozier, 2002). Thus, it is easier for a shy person to say nothing than to risk disapproval or rejection from others. To be shy then is to be fearful of social interactions and overly concerned about how one is perceived by others.

Interpersonal interactions represent a primary concern for shy people; however, particular types of interactions can increase an individual's level of shyness. Research suggests that there are five eliciting

situations specifically associated with shyness: interactions with authority figures; one to one encounters with members of the opposite sex; conversations with strangers; being the focus of attention in small groups; and explicitly evaluative situations, such as job interviews (Cheek & Stahl, 1986; Henderson & Zimbardo, 1998a). Reactions to situations are also dependent on how shy the individual is. In order to gain a deeper understanding of shyness, theorists have attempted to develop different subtypes of shyness.

Shyness has been categorized according to the severity of symptoms reported. Zimbardo (1977) conceptualized shyness in terms of the impact that it has on the individual. According to this perspective, shyness exists on a continuum ranging from situational to chronic shyness. Situational shyness involves experiencing the symptoms of shyness in specific social performance situations but not incorporating it into one's self-concept (Henderson & Zimbardo, 1998a). Also at the situational end of the continuum are individuals who do not seek social interaction and prefer to be alone (Henderson & Zimbardo, 1998b). In the middle of the continuum are those who feel intimidated and awkward in situations with certain types of people. Their discomfort is strong enough to disturb their social lives and inhibit their functioning (Zimbardo, 1977). At the end of the continuum are those who are chronically shy. This most debilitating form of shyness involves a fear of negative evaluation accompanied by emotional distress or inhibition that interferes significantly with participation in desired activities and goal-directed behaviour (Henderson, 1997). Chronically, shy individuals experience extreme dread when called on to do something in front of people, and find it difficult to control their anxiety (Zimbardo, 1977).

Unlike social phobia, shyness is not recognised as a formal category in the Diagnostic Statistical Manual (American Psychiatric Association, 2000). Moreover, some psychologists are not convinced that shyness is anything more than a common language label used to define a personality trait. Nevertheless, clinical researchers have begun to take shyness seriously and to consider its impact on individuals (Crozier, 2002). A primary reason as to why shyness has gained increasing attention is due to its high prevalence and debilitating outcomes.

3. Prevalence of shyness

Shyness is a pervasive social phenomenon affecting a wide range of individuals. Prevalence estimates of shyness are primarily based on self-reports and the fundamental assumption that an individual is shy if they perceive themselves to be. Although there are problems with the use of self-reports, they represent an important source of data in this area given that symptoms of shyness are often covert and thus, are not readily observable. Phillip Zimbardo (1977), a pioneer in the shyness field, has conducted numerous studies investigating the rates of shyness via self-report. In the largest non-clinical study to date, 5000 individuals completed the Stanford Shyness Survey, a questionnaire designed by Zimbardo to assess levels of shyness (Zimbardo, 1977). Of the 5000 respondents, more than 80% reported that they were shy at some point in their lives, either currently, in the past or always. Over 40% described themselves to be currently shy and the other 40% indicated that they had considered themselves as shy previously, but no longer. A quarter of respondents described themselves as chronically shy. More recent research indicates that the percentage of currently shy has increased to nearly 50% (Carducci & Zimbardo, 1995).

Some sex differences have been reported in shyness. Although there are generally few gender discrepancies in childhood, sex differences start to emerge in adolescence. Zimbardo (1977) found that adolescent girls were slightly more likely to be shy than adolescent boys. These differences may be due to societal pressures. For example, studies have indicated that parents find shyness less acceptable in sons than daughters (Steverson-Hinde & Shoulldice, 1993). In adulthood, no sex differences have been reliably reported in the prevalence of shyness, however, a slightly higher percentage of college men than college women report being shy (Zimbardo, 1977).

Cross-cultural studies indicate that shyness is universal (Henderson & Zimbardo, 1998a). However, the prevalence of shyness varies from culture to culture. For example, rates of shyness are particularly high in Japan and Taiwan; where 57% and 53% of the respective populations rate themselves as currently shy (Zimbardo, 1977). Zimbardo (1977) has examined the particular values in these cultures that produce a model of "a shyness-generating society" (p. 247). Despite some cultural variations, however,

research suggests that shyness is common, widespread, and universal. The high prevalence of shyness is particularly concerning, given the negative impact that shyness can have on individual functioning.

4. Negative effects of shyness

Shyness can be severely debilitating and have serious behavioural, affective, cognitive and physiological effects. One of the most prevailing effects of shyness is a decreased level of social interaction. Shyness makes it difficult to meet new people, make friends, or enjoy potentially good experiences (Zimbardo, 1977). Due to their pervasive fear of social interactions, shy individuals do not take advantage of social situations, date less, initiate fewer conversations and are less expressive verbally and non verbally (Henderson & Zimbardo, 1998a). Rather than contributing to a conversation, shy people tend to remain quiet and hover at the end edge of social situations (Crozier, 2002). Thus, making friends is extremely difficult. Asendorpf and Wilpers (1998) found that the more sociable and less shy first time university students were at the beginning of the semester, the more their peer network grew over the course of the semester. Shyness then has important implications for social support, which is, in turn, a protective variable implicated in a range of issues such as physical wellbeing and depression (House, Landis, & Umberson, 1988; Williams & Galliher, 2006).

Shy people also tend to have negative views of themselves and others. Shy individuals generally have an attribution bias, whereby they reinterpret events in a way that fits their preexisting belief about themselves (Mash & Wolfe, 2005). Shy people remember negative feedback more than less socially anxious people, see themselves as less physically attractive (Henderson & Zimbardo, 1998a), and are more likely than non-shy individuals to attribute success to external factors and failure to internal causes (Federoff & Harvey, 1976). This negative attribution style also leads to a self-blaming tendency, particularly in chronically shy individuals. Shy individuals blame themselves for their perceived inadequacies, report intense feelings of shame and report negative thoughts about themselves in social interactions; seeing themselves as awkward, unfriendly and incompetent (Henderson & Zimbardo, 1998a). Shy individuals are generally consumed by self-loathing; however, their negative thoughts are not restricted to themselves. Henderson (1997) found that shy individuals blame others as well as themselves and tend to view others as dangerous, rejecting, and unreliable.

The shy preoccupation with performance has been shown to negatively affect cognitions and information processing skills. For example, shy individuals perform significantly worse than non-shy individuals on the Stroop test (Arnold & Cheek, 1986) and measures of social processing skills (accuracy in judging social situations) (Schroeder, 1995). It has been suggested that because shy people possess low levels of self-esteem and are overly fearful about receiving negative feedback they become anxiously self preoccupied to the extent that they become distracted from tasks (Cheek & Stahl, 1986). This leads to a decrease in problem solving and information processing ability (Schroeder, 1995).

The pervasive fear of evaluation characteristic of shy individuals may also lead to a decrease in creative performance. To investigate the relationship between creativity and shyness, Cheek and Stahl (1986) had 42 shy and non-shy college women write poems that were objectively rated for creativity. Of this sample, half were told that they would receive evaluative feedback on the quality of their poems. Results demonstrated that shyness was inversely related to creative performance. Furthermore, shy participants in the evaluative feedback group performed less creatively than those who were not shy. These findings coincide with those from other studies, indicating that shy people suffer from performance anxiety inhibiting information processing skills and creativity. Shy people become overly concerned about their self-presentation style impacting on cognitive functions. Shyness therefore appears to be a barrier to developing one's potential (Cheek & Stahl, 1986).

Although studies have generally focused on the cognitive effects of shyness, it is likely that other important aspects of functioning are also affected. For example, studies indicate that shy individuals are at a greater risk of health problems and psychological disorders than non-shy individuals. In a study by Bell et al. (1993), older shy individuals were found to suffer higher rates of hay fever, insomnia, and constipation than their non-shy counterparts. Further, shy individuals had an increased risk of arteriosclerotic vascular disease and adrenal and thyroid-related diseases. Extreme shyness has been found to be a predictor of emotional problems. Schmidt and Fox (1995), for example, examined differ-

ences in personality and health related ailments among 40 young women who also self-rated themselves on shyness. High shy participants reported significantly more neuroticism, loneliness, depression, and had lower self-esteem than their lower shy counterparts. Explanations for the relationships between shyness and a range of physical and psychological issues may lie in the attribution biases common amongst shy individuals. Attributing failure to internal causes can lead to learned helplessness and a decreased likelihood to seek help (Peterson, 1988). Health problems may be further exacerbated, because shy people typically fail to fully disclose personal or sensitive problems to medical and psychological professionals (Henderson & Zimbardo, 1998a).

Shyness has a high comorbidity with a range of disorders, such as dysthymia, social phobia, generalized anxiety disorder, and avoidant personality disorder (Henderson & Zimbardo, 1998a). Being shy also increases the likelihood of experiencing sexual disorders (Tignol et al., 2001) and substance dependence, particularly alcohol abuse. In an examination of alcohol dependents, Lewis and O'Neil (2000) found that the majority of problem drinkers reported experiences of shyness. It has been suggested that shy people may use alcohol in an effort to relax socially, which may then lead to abuse and impaired social performance (Henderson & Zimbardo, 1998a). In contrast, however, high levels of social anxiety may decrease drinking when the individual believes that drinking will lead to negative consequences, such as embarrassing behavior. For example, Eggleston, Woolaway-Bickel, and Schmidt (2004) found that socially anxious college undergraduates showed a decreased consumption frequency and drinking binges than other college undergraduates. Because of the prevalence of alcohol consumption amongst college students, it is unclear whether these findings can be generalized beyond the college setting. In general, however, studies illustrate the negative and far-reaching effects that shyness can have on individual functioning. Nevertheless, it is important to note that not all shy people regard their condition as negative.

5. Positive effects of shyness

Although research has focused on the negative and debilitating repercussions of shyness, for some individuals, shyness is perceived as a positive trait. It is estimated that between 10 and 20% of people who are shy actually like it (Zimbardo, 1977). For these people, shyness may be regarded as a positive quality or as an aspect of their personality to which they have adjusted (Crozier, 2002). Shyness can carry positive connotations, such as “reserved”, “retiring”, and “sophisticated” (Zimbardo, 1977). Moreover, shyness may provide anonymity and discreetness and allow individuals to stand back and observe. Nevertheless, for the majority of shy people, shyness is regarded as a persistent and distressing problem that they would overcome if they could (Crozier, 2002; Zimbardo, 1977). Although it has not been investigated, it is possible that perceiving one's shyness as positive is dependent on one's level of shyness, with those who experience relatively low levels of shyness more likely to view it as a positive characteristic.

In summary, although a small proportion of shy individuals report benefits associated with their shyness, for the vast majority, shyness is a negative experience with potentially debilitating implications. Given these negative effects, it is important to understand the variables that might impact on the maintenance and expression of shyness. The remainder of this review examines the possible role of the internet in the expression and experience of shyness.

6. Negative influences of the internet on shyness: internet addition

Henderson and Zimbardo (1998a) propose that the reported general increase in shyness is associated with advances in information communication technology and an overall reduction in “real time” face-to-face communication and interaction. It has been argued that the increasing use of mediated and computerised communication, such as telephones, televisions, and ATMs, may reduce shared social interaction and promote social isolation. The internet, in particular, has been described, especially in the earlier literature, as one of the most socially distancing and impersonal modes of communication (Matheson & Zanna, 1998). The fundamental assumption underlying this argument is that the internet is a substitute for face-to-face human connectedness, providing social compensation (McKenna & Bargh, 2000) and thus, people who spend a substantial amount of time online do not acquire and

maintain the skills necessary for social interaction (Henderson & Zimbardo, 1998a). From this perspective, shyness can be viewed as a type of societal pathology influenced by lack of socialisation and changes in the nature of interpersonal communication.

Support for the idea that internet use is associated with shyness comes primarily from studies investigating internet addiction. Internet addiction is a relatively recent phenomenon involving excessive use of the internet, which causes significant impairment in individual functioning (Yang and Tung (2007)). In a review of the area, Engelberg and Sjoberg (2004) noted that numerous studies have reported a relationship between shyness and frequent internet use. A range of studies have reported associations between internet use and shyness, loneliness, anxiety, depression, and self-consciousness. For example, in a study of 722 internet users, Chak and Leung (2004) examined the influences of personality and shyness on internet addiction. Results suggested that the shyer a person was, the greater the likelihood they were to be addicted to the internet. These results coincide with findings from Yang and Tung (2007) who investigated differences between internet addicts and non-addicts in a sample of 1708 Taiwanese adolescents. Although both non-addicts and internet addicts viewed internet use as enhancing peer relations, students with personalities characterised by shyness, depression, and low self-esteem had a higher tendency to become addicted. Furthermore, factor analyses examining the constructs underlying internet addiction have identified shyness and introversion as possible predictors of problematic internet use (Davis, 2002; Pratarelli, Browne, & Johnson, 1999).

One of the key questions arising from research in this area surrounds the causative relationship between shyness and problematic internet use. In other words, which comes first: does excessive internet use promote shyness or are shy people more likely than non-shy individuals to become addicted to the perceived safety of online interactions? Russell, Flom, Gardner, Curtona, and Hessling (2004) suggest that both accounts are possible. First, like Henderson and Zimbardo (1998a), Russell et al. (2004) posit that time spent on the internet leaves less time for face-to-face social activity. Thus, the more time an individual spends online, the less time they are engaging in offline social interactions. This can lead to social isolation and an increase in shyness. Second, shy people choose to interact via the internet more often than people who are not shy. This may be because shy people are not receiving adequate social interaction offline or are dissatisfied with those they associate with. Loneliness in the offline world may therefore encourage shy individuals to seek connection online.

Although both hypotheses therefore appear plausible, they have received only partial empirical support. Papacharissi and Rubin (2000) found that those who felt less satisfied and valued during face-to-face communication used the internet as an alternative to interpersonal communication and that those with low or unsatisfactory contacts used the internet more frequently than others. Online interactions were therefore used to compensate for the difficulties experienced offline. Other studies, however, have failed to replicate these findings and have indeed failed to report relationships between internet use and shyness. Henderson, Zimbardo, and Graham (2002), for example, examined whether 22 shy adolescents used computers more than non-shy students and if they experienced more loneliness. Overall, results revealed little difference between shy and non-shy adolescents in their use of technology. Similarly, Mandell and Muncer (2006) noted that shyness was not generally associated with internet use in a sample of 362 British adolescents and adults.

In summary, there is debate about the extent to which shyness predicts internet usage. There is a group of primarily correlational studies suggesting that shy people are at risk of internet addiction, but other studies report few or no differences between shy and non-shy people on internet use. Although there is some research to support the hypothesis that shy people seek out online interactions to compensate for the difficulties experienced offline, it is still unclear to what extent shyness produces internet usage or is exacerbated by it. In addition, the criteria used to assess shyness and the tools designed to measure internet addiction have been criticized on several grounds (Griffiths, 2000). Caution therefore needs to be applied when interpreting research in this area.

7. Positive influences of the internet on shyness

Despite the negative outcomes associated with excessive internet use detailed above, there is a growing literature that suggests ICT may facilitate interpersonal relationships and reduce levels of

shyness. According to social network theory (SNT), the internet is a form of social communication that supplements and extends traditional face-to-face social behaviours (Birnie & Horvath, 2002). Thus, contrary to the arguments proposed by Henderson and Zimbardo (1998a), SNT suggests that ICT enhances communication by increasing ties between people. SNT has been supported by numerous studies suggesting that computer-mediated communication has the potential for fostering satisfying, enduring, healthy relationships (Bargh, McKenna, & Fitzsimmons, 2002; Cornwell & Lundgren, 2001; McKenna, Green, & Gleason, 2002). Consistent with SNT, researchers have reported that shy people feel confident using the internet and that the internet provides a mechanism for expanding their social network (Birnie & Horvath, 2002; Scealy, Phillips, & Stevenson, 2002). Counter to the idea that shyness may lead to internet addiction, Scealy et al. (2002) found that shyness did not predispose individuals to increased internet use. Furthermore, Kraut et al. (2002), in a longitudinal study, reported that internet use was positively correlated with spending time in face-to-face interactions with family and friends and involvement in local community, supporting a “rich get richer” model.

Studies that have explored shyness online report that shy individuals feel less inhibited online than offline. In a study by Roberts, Smith, and Pollock (2000), for example, individuals who perceived themselves as shy were interviewed regarding their usage of computer-mediated communication. Shy individuals reported forming intimate relationships online and indicated that they felt less inhibited online than offline. In a subsequent six-month longitudinal study, seventeen low shy individuals and ten high shy individuals completed a 5-item version of the Cheek and Buss Shyness Scale and other measures to determine levels of shyness both online and offline. Similar to the preliminary qualitative results, shy individuals reported feeling less shy online. Furthermore, comparisons of pre and post-test scores revealed that shyness in the high shy group decreased over time offline. These findings imply that shy individuals feel more confident during social interactions online and that the internet may enhance social skills that may then be generalized in offline interactions. Despite the implications of this research, limitations, such as the small sample size and the brevity of the shyness measure, restrict the extent to which these results can be generalized.

In a more comprehensive analysis of the effects of the internet on shyness, Stritzke et al. (2004) compared shy and non-shy internet users' perceptions of shyness in online and offline contexts. Four primary aspects of shyness were measured: rejection sensitivity, initiating relationships, self-disclosure, and providing support and advice. The sample consisted of 134 university students who responded to a web-based questionnaire. Differences on shyness related dimensions between shy and non-shy individuals were seven times larger in the offline context than in the online context. Few differences existed between shy and non-shy individuals online; the two groups did not differ on rejection sensitivity, initiating relationships, and self-disclosure when online. Thus, in an online environment, shy individuals appear similar to non-shy on central aspects of shyness.

The study by Stritzke et al. (2004) provides additional support for the argument that online interactions reduce shyness. The results, however, need to be read with some caution. This study, like the majority of shyness literature, was based on a university sample. Future research would do well to incorporate a broader sample base. Additionally, the study was based on self-reports collected online. Although self-reports are often a reliable source of information and, as indicated above, can be an important source of data in this area, it would also be useful to track changes in shyness using a more objective, experimental format. Also, as the authors note, important information regarding demographics and the amount of time spent online was unfortunately lost due to technological problems. Future research would benefit by determining how much time needs to be spent online for shyness levels to decrease and if, as the internet addiction literature implies, shy individuals spend excessive amounts of time on the internet. Despite these limitations, the study by Stritzke et al. (2004) provides further support for the idea that shy individuals can benefit from online interactions.

8. How does the internet reduce shyness?

Based on their research, McKenna et al. (2002) suggest two moderating variables that may enable the internet to foster healthy relationships and reduce feelings of shyness. First, online social environments lack the usual “gating features” implicit in real face-to-face interactions. These are easily dis-

cernable features, such as physical appearance, as well as other visible symptoms of shyness, such as blushing. These gating features often prevent shy people from developing and engaging in social relationships. In accordance with self-presentation theory and the findings by Stritzke et al. (2004), the absence of visual and auditory cues online may reduce shy individuals' experience of detecting negative or inhibitory feedback cues from others. Thus, the internet may provide shy individuals with control over their interactions and allow them time to plan their responses (Henderson et al., 2002).

The greater anonymity afforded by the internet is a second reason why shy individuals may be more comfortable online. The anonymity of online interactions functions in two ways to facilitate disinhibition. First, self-presentational control is optimized online, as individuals select which aspects of self to reveal or conceal (Chester & Bretherton, 2007). In what is generally a visually anonymous context, users are able to increase the subjective perceived probability of being able to make the desired impression. Second, anonymity permits shy individuals to reveal intimate aspects and share inner beliefs and emotional reactions with less fear of disapproval and sanction (McKenna et al., 2002). Descriptions of ICT as "hyperpersonal" (e.g., Russell et al., 2004; Walther, 1996) build on this assumption that self-disclosure is more likely to occur online, when individuals are under the protection of anonymity. This level of self-disclosure may then lead to a stronger formation of relationships. In their study, Bargh et al. (2002) noted significant reductions in social anxiety over a two-year period, and that individuals tended to like each other more online than face-to-face due to higher levels of self-disclosure online.

A third potential argument is that shy people may simply not take internet interactions as seriously as face-to-face relationships. For example, in a study comparing involvement in online and offline romantic relationships amongst shy and non-shy individuals, Cornwell and Lundgren (2001) concluded that commitment and seriousness was lower in cyberspace than in "realspace", with respondents indicating that cyberspace relationships were "just for fun" and "unrealistic". Applied to shyness, this difference between perceptions of the two media suggests that people may be less inhibited online, because online interactions are viewed as less important than those formed offline. Although it is possible that this process facilitates confidence online, other research lends weight to the idea that online relationships are taken seriously and provide important, relatively safe opportunities to test out behaviour that is later adopted offline (e.g., Roberts et al., 2000)

9. Conclusions

Shyness involves discomfort and awkwardness in interpersonal situations and, for most, is a debilitating condition that is associated with a range of adverse health, cognitive, social, and behavioral effects. In particular, shyness has been found to reduce social interactions and enhance negative views of one self. Reports indicate the prevalence of shyness is increasing, with estimates suggesting that 50% of individuals currently suffer from shyness (Carducci & Zimbardo, 1995).

It has been argued that an increasing reliance on ICT may have contributed to the contemporary proliferation of shyness (Henderson & Zimbardo, 1998a). Research evaluating the relationship between shyness and the internet is, however, contradictory. On the one hand, some studies suggest that shyness is a central component and predicting factor of internet addiction. It has been theorized that shy individuals feel more confident online and engage in ICT to compensate for their lack of offline social interaction. This leads to a reduction in opportunities to engage in face-to-face interactions and may cause an increase in levels of shyness offline. From this perspective, the internet enhances social isolation.

On the other hand, social network theory and related research suggest that the internet increases social ties between people and provides shy individuals with a safe place to interact and form relationships. According to this perspective, online interactions reduce inhibition both online and offline, regardless of how shy people are to begin with.

Although there has been considerable research on shyness offline, there is a paucity of studies of shyness online. The two positions, with which we began this review, are therefore supported by a relatively small empirical literature and that literature is not consistent. Although some studies, for example, support a relationship between shyness and internet addition, others have failed to find cor-

relations. Some research has suggested that time spent online detracts from time spent in offline interactions. Other research has supported the “rich get richer” model, suggesting that the benefits of interacting online seem to spill over into the offline world.

In this article we identified and described two positions evident in the current literature on shyness online: shyness may predict internet addiction, however, paradoxically certain qualities of internet communication, such as greater anonymity and absence of gating features, may afford protection for shy individuals and allow them to expand their social network. These two positions appear, at first glance, to be inconsistent. Can both be plausible explanations of shyness online? Clearly further work is required to identify the mediating variables, such as level of shyness, frequency of internet use, gender, age, and personality traits.

Limitations inherent in the current literature, including the use of student samples and self-reports, brief uni-dimensional measures, small samples, and correlational designs, might all be profitably ameliorated in future research. In particular, experimental and longitudinal studies would provide a valuable complement to the ethnographic and qualitative work already done in this area.

If shyness is reduced online, as the existing literature suggests, the incorporation of internet based learning tools into educational settings may be beneficial for students suffering from shyness. A number of educational institutions rely on internet tools, such as online discussions, to enhance learning. Online discussions offer students the opportunity to have more control over their self-presentation which can lead to greater disinhibition and an increase in participation from students (Chester & O’Hara, 2007; Sullivan, 2002). Whilst more research is needed, online educational settings may potentially reduce shyness in students who have difficulties communicating ideas in face-to-face classes.

Finally, interventions might be developed to help shy individuals experience and express themselves more confidently online and then apply these lessons to the offline world. Online interventions are increasingly proving effective in a range of areas such as depression, eating disorders, and panic disorder (Carlbring & Andersson, 2006). The adaptation of current treatment models for online delivery might prove particularly beneficial for shy people drawn to the perceived safety of online interactions.

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