

Cyberspace's threats: a pedagogical perspective on Internet addiction, violence and abuse

Gilberto Marzano, Velta Lubkina, Zenija Truskovska

Questo articolo presenta e tematizza alcune risultanze emerse nel corso di due diverse ricerche condotte dal Personality Socialization Research Institute (PSRI) di Rezeknes augstskola (Lettonia). Entrambe le ricerche sono iniziate nel 2012 e in via di conclusione. La prima è una analisi della letteratura sulla dipendenza da Internet, arricchita da un sondaggio sull'uso eccessivo di Internet tra gli adolescenti lettoni, mentre la seconda ha richiesto l'attuazione di un programma di formazione per gli operatori sociali sulle minacce del cyberspazio, effettuata nel quadro di un Progetto Europeo ("PI-PWP Threats of cyberspace – New qualification of a social worker"), in cui PSRI è un partner. L'articolo sostiene l'idea della stretta relazione che esiste, in termini di singolo comportamento emotivo-sociale, tra Internet e vita reale. Inoltre, sostiene l'importanza di un approccio pedagogico come via per risolvere alcuni dei problemi connessi alla diffusione di Internet, spesso causati da un suo uso abusivo. Più in particolare, sono stati presentati alcuni problemi emersi durante la progettazione del programma di formazione per gli operatori sociali e la definizione della strategia per il miglioramento/valutazione della sua efficacia. L'analisi della letteratura ha dimostrato che il ricorso ad una dimensione pedagogica per affrontare le minacce del cyberspazio è condivisa da altri ricercatori, c'è anche una interessante convergenza sul modello di apprendimento sociale di Bandura che è alla base del quadro teorico dello studio.

This article presents some considerations emerged in the course of two different researches carried out by the Personality Socialization Research Institute (PSRI) of Rezeknes Augstskola (Latvia). Both researches have begun in 2012 and are not yet concluded. The first one is a review of literature on Internet addiction, enriched with a survey on the excessive Internet use among Latvian adolescents; while the second one requires the implementation of an educational program for social workers on the threats of cyberspace, carried out within the framework of a European project ("PI-PWP Threats of cyberspace – New qualification of a social worker"), in which PSRI is a partner. The article brings forth the idea of the close relationship that exists, in term of individual emotional-social behavior, between the Internet and real life. Furthermore, it advocates the importance of a pedagogical approach as a mean to address some of the problems associated with the Internet diffusion, often as a result from a wrong use of it. More specifically, some issues that ensued during the design of the educational program for social workers and the definition of the strategy for improving/evaluating its effectiveness are introduced. The analysis of current literature showed that the recourse to a pedagogical dimension for facing the cyberspace threats is shared by other researchers; there is also an interesting convergence of some of them on the Bandura's social-learning model which is at the basis of our theoretical framework.

Parole chiave: cyberspace risks, Internet disturbs, social-learning model

Key words: rischi del cyberspazio, dipendenza da internet, apprendimento sociale

Articolo ricevuto: 19 aprile 2013

Versione finale: 31 maggio 2013

INTRODUCTION

While it is long evident that the Internet has greatly altered modern life through its accessibility and convenience, only recently some effects of cyberspace are noticed as negative. Addictive behaviors among the Internet users and the increasing cases of cyber violence have drawn the attention of the media and researchers. Literature on excessive Internet usage, cyber bullying and various forms of Internet abuse are considerably grown over the past years.

The broad sociability offered by the Internet is responsible for the large amounts of time that individuals spend in online interactions, exchanging e-mails, participating in discussion forums, sending and reading messages in social networks, chatting, and playing online games. People participating in these and other forms of online interactions do it to exchange information, provide emotional support, or merely communicate with persons who share similar interests.

However, the huge communication opportunities, enhanced by the networking capabilities of the Internet, subtract time to face-to-face exchanges and can lead to social isolation (Grohol, 2005). Thus, the Internet is paradoxically becoming a really indispensable communication medium, and at the same time could favor social isolation. It can be the cause and effect of the changes that affect contemporary society, inducing faster information interchanges, massive data transfer and more flexible people interactions. There is no doubt that the diffusion of the Internet largely influences the contemporary daily life. It has even invaded the education and labor world, so that learning to manage it, and its direct and collateral effects become more and more important.

New effective educational approaches are needed to tackle challenges caused by the ICT, because much of the future of people depends on the growth of electronic services. For this reason, the Digital Agenda for Europe (DAE) aims to reboot Europe's economy, pointing to get the most out of digital technologies. According to DAE, digital technologies have enormous positive potential on everyday lives and on social challenges, e.g. reducing energy consumption, supporting ageing citizens' lives, revolutionizing health services, delivering better public services, and also driving forward the digitization of cultural heritage and providing online access for all.

Nevertheless, there are also some negative effects. One of them is represented by the increasing amount of individuals who are afflicted by the Internet problematic use. This phenomenon especially affects young people, who spend less time facing their scholastic responsibilities and more participating in online activities. So it happens that an adolescent places more value on his/her online interactions with virtual friends than on developing relationships with fellow classmates and professors. Moreover, the Internet has produced new forms of violence, often generically addressed as cyberbullying.

This article analyzes the various risks associated to cyberspace, aiming to evidence how certain educational programs, which focus some specific issues, could be useful to reduce part of the problems resulting by the growth of the Internet use. The suggestions contained in this article are coming from two different researches started in 2012 at the Personality Socialization Research Institute of the Rezeknes Augstskola. The first of them concerns Internet addiction in Latvia, and was motivated by the necessity of acquiring systematic information on this phenomenon in our country. At moment we only know that many adolescents spend on the computer about 2-3 hours per day and some of them even 10

hours and over (Dzene, 2012). The second is related to a European project whose aim is to implement an innovative educational program for social workers focused on the threats of cyberspace. The creation of this product should fill in a gap in the existing system of education of the social service staff with the problems connected with cyberspace.²³²

WHY A PEDAGOGICAL PERSPECTIVE

Many scholars in pedagogy call for expanding and exploring beyond online paradigm and argue that education will move quickly to something more interactive, virtual and pervasive. They are convinced that ICT should open new perspectives, allowing to overcome all of space-time limitations (STLHE 2012 SAPES).²³³ Their vision, that portrays the current trends in design educational programs, confirms the role and invasively of ICT.

However, a pedagogical approach could be useful not only for the exploitation of ICT in educational activities, but also to tackle the risks coming from the use and the abuse of the new technologies. This viewpoint is reinforced by the general evidence that a pedagogical approach needs the integration between technological knowledge and social/individual context. Learning dynamics and developmental psychology play a crucial role in education process. Accordingly, a pedagogical perspective could be helpful in handling the new media, and consequently in achieving effective preventive actions towards the Internet disorders and the Internet malicious usage.

A pedagogical perspective, especially if inspired by the social learning theories, should be efficacious to avoid or correct distorted relational uses of the Internet, limiting the risks of addiction, and perhaps also some of the problems related to the wide area of cyberbullying. Social learning theory (Bandura, 1977) has demonstrated that children are likely to imitate behavior modeled by people around them, and their behavior can be reinforced. Reinforcement is external or internal and besides positive or negative.

Under this aspect, education could become equivalent to prevention, and in the case of the Internet, educating to a correct use of it could really avert harmful consequences. Teaching people, especially children, to rightly manage the new

²³² The project “PI-PWP Threats of cyberspace – New qualification of a social worker” will be carried out from 2012 to 2014, and is co-financed by the European Union under the European Social Fund (<http://cyberprzestrzen.wsptwp.eu/>).

²³³ STLHE (Society for Teaching and Learning in Higher Education) 32nd Annual Conference 2012 SAPES (Société pour l’avancement de la pédagogie dans l’enseignement supérieur), Learning Without Boundaries ? Apprentissage sans limites?, Montreal June 19- 22; http://www.mcgill.ca/stlhe2012sapes/sites/mcgill.ca.stlhe2012sapes/files/full_detailed_program_stlhe_2012.pdf; retrieved: June 14, 2013).

forms of communication, training them to a productive use of the Internet, and preventing them from obsessive dependency, could be advantageous, if not decisive. Moreover, in order to be effective, educational activities achieved to an appropriate and profitable use of the Internet ought to involve the emotional and social sphere of learners.

In particular, an effort should be made in designing programs for younger children, and it implies the development of educational interventions at different levels (peers, educators, relatives, etc.). In fact, it is not sufficient to give technical, operative or legal information about the threats of cyberspace, but it is necessary to develop the antibodies to contrast the causes that can lead to Internet disorders. More precisely, it is necessary to impinge on the context of individual-social relations. Cyber wellness is starting to become a concrete objective, and some authorities encourage and promote safe, responsible use of the Internet and healthy gaming, advocating a holistic public outreach approach to educate not just youth, but also educators, parents and the general public.²³⁴

In this perspective, it is really important to choose a pedagogical model capable of representing the different factors involved with an incorrect and evil usage of the Internet. Thus, Internet addiction should be approached like a sort of social addiction, being really close to the sphere of communication and social interrelations. However, because of its complexity, it is difficult, inasmuch as the factors associated to Internet disorders belong to different socio-environmental layers, such as individual personality level, community level and cultural and institutional level, responsible, this latter, to define regulations and penalties.

Moreover, evil and good effects of the Internet are mixed, e. g. it has been observed that the game facilitates self-awareness by means of self-understanding and self-determination, developing the attitude of «I am another one», and giving a chance to experiment with personal identity, taking and playing various social and cultural roles. But, in the Internet context, the game can easily assume the harmful form of an addiction.

Starting from the idea that social-learning models could help in handling the social and individual factors which highlight the different forms of Internet disorders, we present, in the following paragraphs, some aspects of the conceptual framework at the base of our researches.

²³⁴ Singapore Government established since 2009 the Inter-Ministry Cyber Wellness Steering Committee (ICSC) which coordinates the Government's efforts in promoting cyber wellness programmes for youths (<<http://www.cyberwellness.org.sg/SitePages/PublicProgramAllPage.aspx>>, accessed: July 4, 2013).

INTERNET ADDICTION DISORDER

Researchers don't agree on a unique term to describe the concept of Internet overuse or abuse. It has been noted that there are as many as six different definitions associated with the concept of Internet addiction, including Internet Addiction Disorder, Pathological Internet Use, Problematic Internet Use, Excessive Internet Use, and Compulsive Internet Use (Widyanto & Griffiths, 2006). Other names for Internet addiction include cyberspace addiction, online addiction, net addiction, Internet addicted disorder, and high Internet dependency (Davis, Flett, & Besser, 2002; Hur, 2006). However, Internet addiction disorder (IAD) is the term mostly used.

IAD has been increasingly recognized as a mental disorder by many scholars (Block, 2008), and, now that the Diagnostic and Statistical Manual of Mental Disorder (DSM-5)²³⁵ has been published, the debate about this issue is being hotly spread. In fact, DSM-5 has included IAD only in the list of the "conditions for further study" which collects conditions and criteria that are set forth to encourage future research and are not meant for clinical use. Many researchers have been disappointed by this decision, but one must consider that there are evident difficulties in the development of effective treatment protocols specifically designed for Internet addictive patients. And it must not be undervalued that the therapeutic fee for IAD is not covered by medical insurance.

Furthermore IAD, more broadly addressed as Internet overuse, problematic computer use or pathological computer use, usually indicates the inability of an individual to control his/her use of the Internet, and shares many characteristics with other forms of behavioral addiction, e. g. gambling addiction or sex addiction.²³⁶ Behavioral addictions follow a cycle. They begin with an individual experience of pleasure in association with a behavior which later changes into a way of coping with stress.

Conceptually, the diagnosis is a compulsive-impulsive behavior that involves online and/or offline computer usage. Although individuals affected by IAD present in real life common crisp traits connected to their excessive online behavior, a recent review of published literature between 2000–2009 in Medline and PubMed shows that little is known about the pathophysiological and cognitive mechanisms responsible for IAD (Weinstein & Lejoyeux, 2010). Accordingly, due to the lack of methodologically adequate research, it is currently impossible to recommend any evidence-based treatment of Internet addiction. For this reason it becomes today very important to try to prevent these kinds of disorders

²³⁵ American Psychiatric Association (2013). Diagnostic and Statistical Manual of Mental Disorders - Fifth Edition, American Psychiatric Publishing

²³⁶ Sex addiction is not currently included in the Diagnostic and Statistical Manual of Mental Disorders.

through effective educational programs, and in this perspective it is crucial to understand the nature of these disturbs and their underlying processes.

Moreover, excessive use of the Internet doesn't automatically correspond to IAD. According to Roper, there are reliable, concrete differences between Social Users, Abusers, and Addicts (Roper, 1998):

- Social User: One who uses something (e. g. alcohol and/or drugs) simply to enhance the pleasure of normally pleasurable situations;
- Substance Abuser: One who uses to enhance pleasure and/or compensate for something negative, such as physical or emotional pain, insecurity, fear, anger, etc.;
- Addict: One who uses to celebrate, compensate, or for any other reason, legitimate or not.

The first surveys in the pathological use of the Internet suggested five specific sub-types of IAD (Young et al., 1999):

1. Cybersexual Addiction - compulsive use of adult web sites for cybersex and cyberporn.
2. Cyber-relationship Addiction – over-involvement in online relationships.
3. Net Compulsions - obsessive online gambling, shopping, or online trading.
4. Information Overload - compulsive web surfing or database searches.
5. Computer Addiction - obsessive computer game playing (e.g., Doom, Myst, or Solitaire).

More recently, there are considered at least three principal subtypes of IAD (Block, 2007):

- Internet gaming addiction;
- Sexual preoccupations;
- Email/text messaging.

INTERNET GAMING ADDICTION

Internet gaming addiction (IGA) is rapidly increasing in the world, especially in China. A recent experiment has demonstrated brain alteration in Internet gaming addicts (Dong et al., 2012). The experiment was performed on fifteen IGA subjects and fourteen healthy controls, and regional homogeneity measures were used to detect the abnormal functional integrations. Comparing to the healthy controls, IGA subjects showed alteration in the brain regions thought related with sensory-motor coordination and those thought responsible for visual and auditory functions. The scientists argued that long-time online game playing enhances the brain synchronization in the sensory-motor coordination related brain regions and decreases the excitability in the visual and auditory related brain regions. A similar result has been obtained in another research on 15 male adoles-

cents diagnosed as having internet addiction and a control group formed by 15 healthy male (Hong et al., 2013). Brain magnetic resonance images demonstrated differences in cortical thickness, confirming that male adolescents with internet addiction had significantly decreased cortical thickness in the right lateral OFC ($p < 0.05$). These results are important, because numerous studies in the literature have implicated the role of the orbitofrontal cortex in various forms of addiction and in drug abuse (Volkow & Fowler, 2000; Schoenbaum et al., 2006; Schoenbaum & Shaham, 2008; Cheetham et al., 2012).

Individuals suffering from video game addiction are only focused on game goals, successes, and achievements. The new video games, especially those known as MMORPG (Massive(ly) Multiplayer Online Role-Playing Game), present some aspects that can induce addiction. MMORPGs are a very popular genre of Internet based role-playing video-games in which a large number of players interact among them within a virtual game world. The Internet allows the game running everywhere a connection is available, and amplifies the competition among players. In some MMORPGs, there is no limit to the player's number or to the game levels, and one can accumulate wealth (called grindings), e. g. lives and combat-useful items, continuing the game indefinitely. In this regard, the novel of Cory Doctorow *For the win* (2010) is very meaningful. It describes the world of MMORPGs, presenting a scenery where vast Third-World labour forces serve the illegal but lucrative market of Western clients willing to pay hard currency for someone else to undertake the grinding labour of winning in-game gold and possessions. It is not only a fiction, in the real world this shadowy profession of grindings accumulation in video-games has actually become a steadily expanding industry, and is known as "gold-farming" (Ahmad et al.).

However, MMORPGs can offer an opportunity to enhance the quality of online applications (Radoff, 2011), because they enhance cooperation (player involvement in activities where they are helping each other, through creativity, shared adversity, etc.) and competition (player involvement in activities where individuals compete over scarce resources, comparison, and win/loss situations). This demonstrates the multi-facets complexity of the virtual world.

INTERNET SEXUAL PREOCCUPATION

Sexual preoccupation occurs when an individual is focused on sex more often than dealing with everything else. A sexually preoccupied person shrugs off almost anything that isn't sexual in order to think of sexual contact or actually have sexual intercourses. Obviously, this pathology is not caused by computer and the Internet excessive usage, although this can facilitate and offer the means to frequent access to porn materials and increase this obsession. In his confession-book about porno obsession, Brent McNamara (2010) observes: "For the

sex, pornography, or Internet addict, the Internet is a truly garden of good and evil”.

Internet porn addicts spend hours each day looking at online erotic materials. They unload large collections of porn images and videos which are used to receive excitement, or in certain cases to deal with stress and anxiety. This behavior is generally hidden from others.

Porn addiction is a complex phenomenon. In general, it depends on the individual sex drive and has his root in the childhood:

It all started with one experience. Someone showed you a picture or you found a video. One young boy shared in a counseling session that he got started with pornography when he found materials in his next-door neighbor’s recycling bin. He was in his way to school and spotted the magazine next to the tin cans and cardboard in the blue plastic at the curb. He stuck the magazine in his backpack, and he had a steady supply of pornography every trash day (Frederick, 2007, p. 29).

Brent McNamara tells that within weeks of his first marriage, his wife discovered a Playboy magazine in his suitcase:

She was greatly disturbed by this and didn’t understand why I would need pornography when I could have her anytime. Truthfully, I didn’t really understand why I still needed pornography either. (McNamara, 2010, p. 35)

He observes that his urge for illicit sexual pleasure by pornography didn’t go away when he was married, showing that sexual abstinence and lack of sex are not direct causes of pornography addiction.

Repression is not a good therapy for stopping Internet pornography consumerism. The installation of software programs which prohibit children to enter in adult sites, porn sites and search sex images and videos can reduce the phenomenon, but it is not a solution. The risk of Internet sexual preoccupation can’t be stopped just by switching off the computer.

Moreover, if Internet sexual preoccupation represents a pathology, and just like other forms of addiction affects a limited number of individuals, the access to adult sites is largely diffused. According to the Internet Pornography Statistics,²³⁷ 42.7% of all Internet users view pages with pornographic content. From the male portion of these users, 20% admittedly do it while at work.

In our research, some points attracted our attention for their implication in educational programs:

²³⁷ Internet Filter. Internet Pornography Statistics. <http://internet-filter-review.toptenreviews.com/internet-pornography-statistics.html>, 2006.

- Porn materials generally contain hyperbolic exaggeration (Paasonen, 2011), aiming to excite the sexual arousal and mark the sexual differences (e. g. male and female attributes are often massive).²³⁸

- Pornography is notably fantastic in its vision of sex, and real social scenarios and real categories of persons are used to set the stories for sexual displays.

- Morphology of porno materials is very poor (e. g. porno videos presents the same ritual sequence of sexual acts).

Our opinion is that, the deconstruction of porno materials could be helpful in demonstrating the illusory of pornography world and its fake imagine of sexual rappings. Adolescents often search in pornography a source of knowledge, a support to understand the changes in their bodies and explicit answer about their sexual concerns. The deconstruction of porn materials can be likened to the revealing a magic trick: it cuts off the mystery uncovering its trivial nature.

Finally, it is really interesting to note that adult industry makes money exposing porno consumers to malware. Researches showed that internet porn is a major vector for infection of vulnerable machines (Wondracek et al., 2010). Adult web sites tend to be more dangerous than other types of web sites, and in addition, many of them use aggressive marketing and advertisement methods that range from “shady” to outright malicious.

EMAIL/TEXT MESSAGING

The increased role in society of mobile phones and Internet technology has generated the so called email/text messaging addiction.

Text messages are often preferred to phone conversations because there is no pressure to reply immediately or have a whole conversation and one can be more pithy (Hogan, 2010), while social software applications²³⁹ join people in the digital landscape increasing messages exchanging (Dasgupta, 2010). Smartphones and tablets offer a constant connection to work and friends, but the augmented capability in exchange information and the ubiquity of communication can have a negative impact on persons unable to disconnect themselves from their network of contacts. A recent survey reports that 83% of users admit to checking

²³⁸ Note that anthropomorphic figurines with explicit and exaggerated sexual attributes is were diffused in prehistoric past (Bailey, 2005) and objectification of women extends deep into Paleolithic (Venus of Willendorf and Venus of Hohle Fels).

²³⁹ Social software encompasses a range of software applications, also known as social apps; includes communication tools and interactive tools usually based on the Internet, e.g. conversational interactions between people or groups, social feedback, and social networks. The most popular social software application are blogs, email, instant messaging, social network services, wikis, social bookmarking.

email after work using a smartphone or mobile device (Osterman Research, 2010). Additionally, many of smartphone owners irritate their partner by checking emails and exchange messages continuously.

At moment there is little scientific literature on addiction to mobile phones and social networks, although mass media largely draw attention to their addictive risks. Text messaging addiction doesn't appear to cause specific physical damages, and one should not confuse addiction to a device with an addiction on a device. A pathological gambler who uses a mobile phone and the Internet for accessing to online games is not a mobile phone or an Internet addict.

However, our research has shown some remarkable points on the issue of email/text messaging, including:

- SMS persona; it is assumed that messages are sent back and forth between two individuals and that the message author is a real person, but these circumstances are not always warranted; sometimes the differences between an SMS sender and his/her actual personality are really relevant (Bridges, 2012).

- Loss in the affectivity; email/text messaging are used to breaking off a relationship or to communicate bad news: a worker can be fired by email, or the intention to divorce can be communicate by way of SMS; the use of email/text message can reduce the empathy among persons and limit their social solidarity;

- Data from worldwide surveys demonstrate that adolescents make an excessive use of email/text messaging; they are often more concentrated on texts exchange than on their co-present situation: one is physically here but in reality is elsewhere (more precisely, in an e-real elsewhere).

What could be the effects of these prevalent forms of interaction?

The above aspects can be also relevant in cyber violence episodes, because they are usually message-driven.

MODELING THE INTERNET BEHAVIORAL ADDICTION

Behavioral addiction differs from addiction to substances like drugs or alcohol, since concerns the sphere of individual behavior and defines activities one accomplishes repeatedly over a period of time, despite being fully aware of its negative consequences. Behavioral addictions can include either behaviors that are part of people's everyday lives, such as spending, exercising, sex and food, or activities as gambling and video games.

Despite increasing attention of researchers in Internet addiction, some authors argue that there are several questions in this field to which the answers are unclear. The unclarified matters include three closely related problem areas: terminology, diagnostic conceptions, and measurement (Demetrovics et al., 2008). However, a very big problem is the lack of a general model of Internet addiction. Literature offers many findings on the effects of excessive use of Internet on

physical health, family life, school performance, and there are many data about the Internet addicts behavior, but the dynamics and processes through which an individual become an Internet addict have not been modeled in a specific theoretical framework and researchers usually make reference to the general model of addictive behavior. According to Tomer (2001), there are five characteristics of addictive behavior:

1. a habit resulting from a long series of choices;
2. dependence on something essential to functioning;
3. compulsion toward destructive behavior;
4. deprivation causing withdrawal;
5. harmful effects (e.g. psychological, social, physical) resulting from enacting the behavior over time.

However, the reason of Internet addiction can often be found in one of its most evident effect: the isolation from the real world, which can be the cause/effect of excessive computer gaming or overdone participation in social virtual world interaction. Internet addiction can start as a form of escapism from the hardness and difficulties of the real world and degenerate in an obsessed usage of the Internet. For example, there are people who become member of Second Life and after a little time arrive to prefer it to the real life, finding in the virtual world a compensation of the real world adversities and stress. The opportunity to live in a world inhabited only by things and people that like you is well declared in the site “Second Life is a 3D world where everyone you see is a real person and every place you visit is built by people just like you”.²⁴⁰

The table 1 shows a rough model of the transitions from the pursuit of pleasure-compensation towards isolation from the real world, assuming that the transition can initially start to overcome a status of delusion, aversion and uncontrolled irreversibility, but afterwards can lead to Internet addiction. There are identified three principal couples of conditions (challenge-limit, control-repetition and frustration-chance) that facilitate this transition, and can lead to the phenomenon of the Internet addiction. Frustration-chance means that if one lives frustrating conditions he/her can pursue the chance to escape from them, choosing an alternative virtual world or refusing a world populated by ugly disliked people. Challenge-limit is connected to another important condition: the pursuit of demonstrating the own cleverness and skill, and obtaining gratification. Finally, the couple control-repetition satisfies another basic condition: to dominate a situation and restart a failed action (overcoming of the condition of irreversibility).

For example, computer games satisfy all the above conditions. They allow experiencing a challenging competition without displeasing consequences: if one

²⁴⁰ <http://secondlife.com/whatis/?lang=en-US>; retrieved: 10 of June, 2013.

wins he/she can be proud of his/her skill, otherwise one can restart the game. Moreover, the game can assume the role of a real or symbolic enemy. Computer gamers become often obsessed with achieving a high score or ranking on a specific game. Gaming addicts sit for hours in front of their computer until they reach a certain game level, but once this goal is obtained, they will set a new goal to achieve.

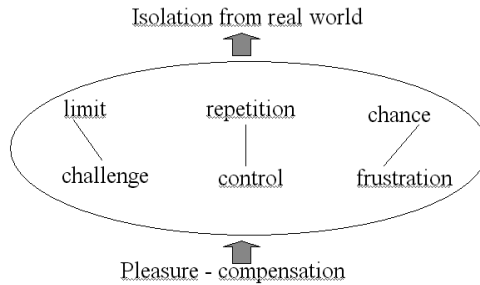


Table 1. Transition model of Internet addiction

The transition conditions are in many ways related to the six criteria which satisfy behavioral addictions according to the model of Brown on gambling behavior: salience, mood modification, tolerance, withdrawal, conflict, and relapse (Brown, 1988). Salience refers to the importance and dominance that particular activities have in one's life and in our table correspond to pleasure-compensation. Mood modification is the subjective experience one has when is engaged in a particular activity, is synonymous with a coping strategy and can be associated to our limit-challenge. Tolerance and withdrawal are, respectively, the process of increasing amounts of an activity for the purpose of remaining satisfied and the unpleasant feelings that occur when the activity is discontinued. In this case there are not a direct correspondence in our transition model, since, in our perspective, the discontinuity frustration is the consequence of the breaking of the isolation state. It similarly happens for conflict, which refers to interpersonal controversies an individual may experience and for relapse, which is the repeated reversion that may occur after one has discontinued an activity. In our model, conflict and relapse, and for some aspects tolerance and withdrawal, are consequences of the transition towards the isolation state.

CYBER VIOLENCE

There is a really copious scientific and informative literature about cyber violence, generally encompassed under the cyberbullying umbrella.

Early investigations in this scope had identified the anonymity as one of more specific factor of cyberbullying, claiming that cyberbullying was different from

traditional bullying because people can use the disguise of anonymity to harass their victims, e. g. sending blind items or dissimulating their own identity. Indeed, cyberbullies take advantage from the features of online communication (anonymity, asynchronicity, and accessibility) to torment their targets (Valkenburg & Peter, 2011), and it has been observed that the hidden nature of electronic communication can offer to victims, or self-presumed victims, of traditional bullying the opportunity to retaliate on line or to attack their real-world violence perpetrators (Kowalski, 2008).

An interesting review of literature on the conceptual and theoretical similarities and differences between cyberbullying and face-to-face bullying, has indicated how the two primary constructs, imbalance of power and repetition, are related to face-to-face and cyberbullying contexts (Dooley et al., 2009):

- Imbalance of power in bullying is physical power, while in cyberbullying corresponds to a power of technology, and relationship between anonymity and power in cyberbullying may reveal other important differences.

- Repetition in bullying is based on behavioral repetition over time conducted by perpetrators, while in cyberbullying may be based on technology and the specific features of the content published, going beyond the initial perpetrator's intentions and behavior

However, cyberbullying is a specific form of relational aggression, a broader category which includes many tactics were employed in an attempt to destroy social relationships, self-esteem and social status of a person (Underwood, 2003; Coyne et al., 2006). Currently cyberbullies harass their targets through social media, chatting rooms, personalized communication (e.g., emails, sms, and instant messages), blogging, and social networking services.

Our research showed that a specific feature in cyberbullying is the difficulty to control the consequences of evil actions. The Internet is an uncontrollable and unregulated world. Emails can be forwarded and messages replicated. Pictures or videos can be viewed and downloaded by an unpredictable number of persons who can send them to others. Digital contents remain online indefinitely and can proliferate beyond the intention of their creators.

Another issue concerns bystanders in the Internet world.

Although many researchers (Naylor et al., 2001; Pepler, 2006; Kowalski & Limber, 2008; Pepler & Craig, 2007; Entenman et. al., 2005) have investigated the possible effects that bystander intervention can have on bullying, there are no systematic studies which examine the habits, function and influence that bystanders can have in cyberbullying. Social network remain an issue difficult to penetrate. Understanding its underlying dynamics and explore the vastness of its inside relations require large scale surveys. Moreover, social networks analysis should take into account the relationship between real world personality and virtual personality of the interacting persons.

At the state of art, one can only note that reactions of the Internet bystanders in social networks are not predictable and could be affected by manipulation.

Finally, our analysis on the recent cases of cyberbullying, especially the more extremes, e. g. that were ended with the targets suicide, it emerges that the new technologies of communication are used for a non-stop harassment, and to continue to torment when physical contacts are not possible. In certain cases anonymity ceases to be an important factor (Marzano & Lubkina, 2013). Targets well know their perpetrators, and cyberbullying seem to appear more close to traditional bullying, as suggested by Kowalski et al. (2008).

However, considering cyberbullying as merely the electronic form of face-to-face bullying may be a limit. Bullying and cyberbullying behaviors share the intentionality to harm someone and like traditional bullying, cyberbullying typically involves repeated behavior and a power imbalance between aggressor and victim. Nevertheless, the virtual environment, the amplifier power of communication, the possible loss of control about contents, the nature of virtual personality and the role of virtual group dynamics represent intricacies that appertain only to cyberbullying.

A PEDAGOGICAL APPROACH TO CYBERSPACE DISTURBS

As it has been observed, research on individual differences has consistently shown that people do not only differ physically but also psychologically, and their individual psychological differences cause the adoption of different coping strategies or different self-regulatory strategies when they face with adverse situations (Denollet, 2000; Pedersen, 2003). Solutions to cyberspace disturbs ought to take into account this evidence. However, some general considerations can provide a basic framework useful in maladaptive patterns of behavior, especially those related to the Internet abuse. The first consideration is that specific educational programs should be designed to prevent the Internet disturbs. These programs should provide models that reinforce a not harmful use of the Internet. Our idea is that promoting what is good with the Internet should prevent a wide range of pathological behaviors. The idea of design positive virtual environments is diffusing, and some researchers have pointed up the urgency of the design of digital landscapes inspired by developmental positive concerns and not by commercial purposes (Chau & Bers, 2006; Bers, 2007; Bers, 2012). The second consideration is that it could be important to study and implement forms of internal reward, especially in young people who manage the new technologies in not evil way. They should be made proud, satisfied, and encouraged in imitating the behavior that one wants to model towards the Internet usage. This consideration is inspired by the evidences of Bandura's social-learning theory that recognizes the importance of modeling appropriate behaviors and suggests that observational learning (or modeling) can be used to explore or to induce specific behaviors.

Starting from the same consideration, other authors claim that there are available evidences which highlight the importance of moral disengagement and empathy in predicting cyberbullying behavior (Lazuras et al., 2012). They sustain that educators can benefit from these evidences and accordingly develop curricula, and employ practices that tap moral and empathic beliefs in young people, in order to curb the onset and prevalence of cyberbullying among students. This was confirmed by Ang and Goh (2010), who hypothesized a positive approach to cyberbullying prevention, arguing on positive caregiver-child relationships and positive role modeling by educational programs. They arrived to their conclusion as a result of a survey carried out on 396 adolescents from Singapore with age ranging from 12 to 18 years. The survey demonstrated that both boys and girls who had low cognitive empathy also had higher scores on cyberbullying than those who had high cognitive empathy. Moreover, they underlined that the anonymity in the cyberspace reduce the sensitivity that an individual has towards others and his/her surroundings. Finally, according to the findings that in adolescents there is a relation between low affective and cognitive empathy and deregulated behavior (Bjorkqvist et al., 2000), they claim that empathy training and education should be included in cyberbullying intervention programs, with additional emphasis on cognitive components of empathy for boys and affective components of empathy for girls.

CONCLUSION

It is very stimulating to note that there are some convergences among researchers about the importance of educational programs in preventing the threats of cyberspace. Our hypothesis of developing educational programs aimed at safely managing the cyberspace opportunities seems not isolated, as emerged by the above mentioned research of Ang and Goh. Also the multi-level intervention, developed by Shek, Tang, and Lo (Shek et al., 2009), emphasizes a healthy use of the Internet - multi-level intervention should provide a multi-level counseling model (individual, family counseling, and a peer support group).

It is also remarkable that in literature on cyberspace disturbs recently there have been many references to social cognitive theory of Bandura, e. g. considered useful to explain several negative familial and organizational consequences of addiction to work-related pervasive technologies, as mobile email use while commuting, dining with families, or on vacation (Turel et al., 2011).

Technology addiction often has consequences on families and work environment, and the Bandura's theory can be effective in modeling the reciprocal interactions/alterations of individuals with the environment, as well as the changes in aggressive behavior related to violent video games repeated exposure (Williams & Skoric, 2005).

Moreover, the available studies indicate that cyber-aggression is related to personal characteristics, such as empathy, and it has been underlined the role, argued by Bandura, of moral reasoning and action in moral disengagement for educational interventions and pedagogical practice (Lazuras, 2012).

However, in implementing educational programs on the threats of cyberspace we should not forget the observation of Cory Doctorow reported in an interview by Tom Chatfield (Chatfield, 2010):

“Kids aren’t stopping playing outdoors because of video games. Kids are playing video games because they are being prohibited from public spaces. We have taken most of our public spaces away from young people, turned them into malls where you no longer have civil liberties; instead, there’s a user agreement over the door that says management has the right to deny entry at any time.”

REFERENCES

- AHMAD, A. M., KEEGAN, B., SRVIASTAVA, J., WILLIAMS, D., CONTRACTOR, N. (2009). *Mining for Gold Farmers: Automatic Detection of Deviant Players*. In MMOGSIA Dmitri Williams. Proceedings of the 2009 IEEE Social Computing Symposium on Social Intelligence and Networking in Vancouver, Canada, 29-31 August 2009. <<http://dmitriwilliams.com/Farming.pdf>>, retrieved: 1th of July 2013.
- BAILEY, D. (2005). *Prehistoric figurines: representation and corporeality in the Neolithic*. Routledge.
- BANDURA, A. (1977). *Social Learning Theory*. Englewood Cliffs, NJ: Prentice Hall.
- BERS, M. (2007). Positive technological development: Working with computers, children, and the internet. *MassPsych*, 51(1), 5-7.
- BERS, M. (2012). *Design digital experiences for positive youth development*, Oxford University Press.
- BJORKQVIST, K., OSTERMAN, K., KAUKIAINEN, A. (2000). Social intelligence–empathy = aggression? *Aggress Violent Behav* 5, 191–200.
- BLOCK, J. J. (2007). *Pathological computer use in the USA. in 2007 International Symposium on the Counseling and Treatment of Youth Internet Addiction*. Seoul, Korea, National Youth Commission: 433.
- BLOCK, J. J. (2008). Issues for DSM-V: internet addiction. *Am J Psychiatry*, 165, 306–307.
- BRIDGES, J. C. (2012). *The Illusion of Intimacy: Problems in the World of Online Dating*. ABC-CLIO.
- BROWN, R. I. (1988) Models of gambling and gambling addictions as perceptual filters. *Journal of Gambling Behavior*, 4: 224–236.
- CHATFIELD, T. (2010). *Interview: Cary Doctorow. May 21 2010*, <tomchatfield.net/2010/05/21/interview-cory-doctorow/>, accessed: July 9, 2013.

- CHAU, C., BERS, M. (2006). Positive technological development: a systems approach to understanding youth development when using educational technologies. *Proceedings of the International Conference of the Learning Sciences*. LEA Publishing, 902-903.
- CHEETHAM, A., ALLEN, NB, WHITTLE, S., SIMMONS, JG., YUCEL, M., LUBMAN, DI. (2012). Orbitofrontal volumes in early adolescence predict initiation of cannabis use: a 4-year longitudinal and prospective study. *Biol. Psychiatry* 2012, 71, 684-692.
- COYNE, S. M., ARCHER, J., ESLEA, M. (2006). "We're Not Friends Anymore! Unless..": The frequency and harmfulness of indirect, relational, and social aggression. *Aggressive Behavior*, 32, 294-307.
- DASGUPTA, S. (Ed.). (2010). *Social Computing: Concepts, Methodologies, Tools and Applications*. IGI Global.
- DEMETROVICS, Z., SZEREDI, B., & RÓZSA, S. (2008). The three-factor model of Internet addiction: The development of the Problematic Internet Use Questionnaire. *Behavior Research Methods*, 40(2), 563-574.
- DENOLLET, J. (2000). Type D personality: A potential risk factor refined. *Journal of Psychosomatic Research*, 49, 255-266.
- Doctorow, C. (2010). For the win. <<http://craphound.com/ftw/download/>>
- DONG, G., HUANG, J., DU, X. (2012). *Alterations in regional homogeneity of resting-state brain activity in internet gaming addicts*. *Behavioral and Brain Functions*, <http://www.behavioralandbrainfunctions.com/content/8/1/41>
- DOOLEY, J.J., PYŻALSKI, J., & CROSS, D. (2009). Cyberbullying versus face-to-face bullying. *Zeitschrift für Psychologie/Journal of Psychology*, 217(4), 182-188.
- DZENE, DZ. (2012). *Dators – draugs vai ienaidnieks? pieejas veids*, http://www.ogresvestisvisiem.lv/index.php?option=com_content&view=article&id=6504:dators--draugs-vai-ienaidnieks&catid=50:aktualitates&Itemid=67>, accessed: July 23 2013.
- FREDERICK, D. (2007). *Conquering Pornography: Overcoming the Addiction: A Practical, Faith-Based Journey* by Dennis Frederick, M. Div, Ph. D. WinePress Bookstore.
- HOGAN, B. (2010). Portable Communities: The Social Dynamics of Online and Mobile Connectedness by Mary Chayko. *City & Community*, 9(1), 134-136.
- KIMBERLEY, M. (2011). Neuroscience and Young Adult Fiction: A Recipe for Trouble?. *M/C Journal, Vol. 14, No. 3*, <<http://journal.media-culture.org.au/index.php/mcjournal/article/viewArticle/371>>, accessed: April 16, 2013.
- KOWALSKI, R. M., LIMBER, S. P., & AGATSTON, P. W. (2008). *Cyber bullying*. Malden, MA: Blackwell.
- LAZURAS, L., PYŻALSKI, J., BARKOUKIS, V., TSORBATZLOUDIS H. (2012). Empathy and moral disengagement in adolescent cyberbullying, *Studia Edukacyjne*, (2012)23, 57-69.

- MARZANO, G., LUBKINA, V. (2013). Cyberbullying and Real Reality, Proceedings of the International Conference. *Society, Integration. Education Volume II*, Rezekne, RHEI, 412-422.
- OSTERMAN RESEARCH, (2010), *Result of a survey on the use of e-mail, social networking and other applications*, http://www.slideshare.net/mosterman/orrsch0410?from=share_email, accessed: July 8, 2013.
- PEDERSEN, S.S., DENOLLET, J. (2003). *Type D personality, cardiac events, and impaired quality of life: a review*, *European Journal of Cardiovascular Prevention and Rehabilitation*, Nr 10, s. 241-248.
- PAASONEN, S. (2011). *Carnal Resonance: Affect and Online Pornography*. MIT Press.
- RADOFF, J. (2011). *Game on: energize your business with social media games* (pp. 32-24). E. Kidhardt (Ed.). Wiley.
- ROPER, N. C. (1999). *High bottom of drunk: A Novel... and the truth about addiction & recovery*. Canada: Small Change publishing Co.
- SCHOENBAUM, G., ROESCH, M.R., & STALNAKER, T.A. (2006). *Orbitofrontal cortex, decision-making and drug addiction*. *Trends in neurosciences*, 29(2), 116-124.
- SHEK, D.T., TANG, V.M., & LO, C.Y. (2009). *Evaluation of an Internet addiction treatment program for Chinese adolescents in Hong Kong*. *Adolescence*, 44(174), 359-373.
- TOMER, J. F. (2001). *Addictions are not rational: a socio-economic model of addictive behavior*. *Journal of Socio-economics*, 30(3), 243-261.
- TUREL, O., SERENKO, A. & BONTIS, N. (2011). *Family and work-related consequences of addiction to organizational pervasive technologies*. *Information & Management*, 48(2), 88-95.
- UNDERWOOD, M. K. (2003). *Social aggression among girls*. New York, NY: Guilford.
- VALKENBURG, P. M. & PETER, J. (2011). *Online communication among adolescents: An integrated model of its attraction, opportunities, and risks*, *Journal of Adolescent Health*, 48(2), 121-127.
- VOLKOW, ND, FOWLER, JS: *Addiction, a disease of compulsion and drive: involvement of the orbitofrontal cortex*. *Cereb Cortex* 2000, 10:318-325.
- YOUNG, K., PISTNER, M., O'MARA, J.A.M.E.S. & BUCHANAN, J. (1999). *Cyber disorders: The mental health concern for the new millennium*, *CyberPsychology & Behavior*, 2(5), 475-479.
- WEINSTEIN, A., LEJOYEUX, M. (2010). *Internet Addiction or Excessive Internet Use*. *The American Journal of Drug and Alcohol Abuse*, 36 (2010), 5, 277-283.
- WONDRACEK, G., HOLZ, T., PLATZER, C., KIRDA, E. & KRUEGEL, C. (2010, June). *Is the Internet for Porn? An Insight Into the Online Adult Industry*. In WEIS.