

## TRAPPED IN THE WEB: THE PSYCHOPATHOLOGY OF CYBERSPACE

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In this review the authors, after an initial description of the “Internet phenomenon,” particularly of the psychological and psychopathological risks related to its use, propose to the reader a series of works on this theme developed during recent years. In this review many interesting aspects are discussed such as the problem of defining the syndrome and the possible diagnostic criteria, the explanatory models proposed by various authors and possible therapy options to treat the syndrome.

*Keywords:* Internet, Psychopathological Risks, Explanatory Models, Diagnostic Criteria, Addiction

### INTRODUCTION

It was around 12 years ago when we studied so-called “internet addiction” for the first time (Cantelmi & Talli, 1998). Our interest in this unique pathology began when a woman from Northern Italy came to our department showing clear dissociative signs after a prolonged exposure to the Internet. We could not identify the precise role played by the Internet. Even though we analyzed her clinical state in detail, we could not understand if it was just an accidental coincidence or a cause of the same symptomatology.

In 1998 the pioneering studies performed by Young in Pittsburgh and other researchers (Young, 1996; Suler, 1996; Brenner, 1997, Griffith, 1997) represented all we knew about this problem until that time. In Italy, very few people could benefit from Net connection and it was not very common to talk about “strange” psychological influences. Since then, the “Queen of the Nets” has spread to a global level by becoming the best means of communication, among all the others. Its spread increased scientific knowledge related to the Net and psychopathologic aspects, and it also made it possible to have access to many kinds of information.

The technology on which the Net is based has changed. The broadband has enabled safer and faster connections, while at the same time the arrival of the telephony and dig-

ital TV has made the Internet more useful and attractive. Nevertheless, its anarchic spirit remained pleasantly integral, just like its capability to stimulate fresh mental pathways.

This review intends to examine the most important scientific contributions obtained by authors who contributed in such ways as providing definitions, diagnostic criteria, impact of disorder, theoretical patterns, motivation, net services and toxicity, means of assessment and treatment. As conventionally agreed, we will use the expression Internet Addiction (IA) in order to indicate a series of online disorders and behaviors, united by the same technology, the Internet, and from the same type of use-abuse. Moreover, we will fully discuss the new scientific contributions that our studies developed in the last few years. The contributions represent a new knowledge that we hope will enrich the previous, existing knowledge on the subject.

### DEFINITIONS

The first computer addiction cases appeared during the 70's and 80's (Shotton, 1991). These kinds of problems were related to PC use-abuse and not to the Internet, since it did not exist yet.

Ivan Golberg, an American psychiatrist, was the first scholar to recognize this “illness” by defining it as Internet Addiction Disorder (1995). He helped to clarify all rela-

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tive diagnostic criteria relating to the Web. Since then, in order to describe this syndrome, several definitions were created in the scientific field such as Internet Addiction (Young, 1996), Internet Dependency, (Scherer, 1997), Compulsive Internet Use (Greenfield, 1999), Compulsive Computer Use (Potenza & Hollander, 2002). IA can be categorized into more specific addictions, such as Cybersexual Addiction, Cyber Relationship Addiction, MUD (multi user dungeon) Addiction, Compulsive Online Gambling, Compulsive Online Shopping, Information Overload Addiction, EBay Addiction and Trading Online Addiction (Young, 1996). Lavenia and Marcucci (2005) provide a further distinction between Cybersex Addiction and Cyberporn Addiction, by assigning the first type of addiction to a sexual interactivity (man-machine-man system) that is completely absent in the second type of addiction (man- machine system).

In his cognitive-behavioral pattern, Davis (1999) suggests the use of the term Specific Pathological Internet Use (as opposed to Generalized Pathological Internet Use) in order to identify any specific form of online addiction.

Carretti offers an explanation on Video Display Dissociative Trance—as outlined by the Diagnostic and Statistical Manual of Mental Disorder (DSM), he confirms that it is

a disorder induced by technology. It shows a clinical state that can be related to intense Internet intoxication (Caretti, 2000; Caretti & La Barbera, 2001).

#### DIAGNOSTIC CRITERIA

Historically, IA has been diagnosed by using unique assessment criteria. In 1996 Young was the first researcher who studied the disorder by proposing diagnostic criteria for Internet Addiction Disorder (Young, 1996). According to Young, it was possible to identify formal aspects of the addiction, such as tolerance, abstinence and craving, in all affected people. Afterwards, she thought to apply the same criteria to pathologic gambling (see table 1). This disorder is considered to be very close to IA phenomenology, since it does not include the consumption of chemical substances (Young, 1998; Potenza, 2006). Some criteria for pathologic gambling, such as “run-up” to the losses, committing illegal acts to finance the game and finding money to relieve a financial situation caused by gambling, were not considered applicable to IA. Indeed, a new specific set of criteria was created and included behavior such as spending more time online than predicted (Johansson & Gotestam, 2004; Leung, 2004).

Shapira and his colleagues (2000) proposed some interesting guidelines that highlight the emotional aspects con-

Table 1  
*Diagnostic Criteria for Internet Addiction (Young, 1998).*

It is necessary that five or more of the following symptoms appear:
1. Do you feel excessively absorbed by the Internet? (Do you think about the previous connection or you are already planning the next online session)?
2. Do you feel the need to spend more time connected to the Net in order to obtain the same level of satisfaction?
3. Have you tried repeatedly to control, to reduce or to interrupt Internet use with no success?
4. Do you feel nervous, depressed or irritated when you try to interrupt Internet use?
5. Do you stay online longer than you planned to?
6. Do you risk negatively affecting important relationships at work or at school because of the Internet?
7. Have you ever lied to your family, therapist or other people to hide the level of your Net involvement?
8. Do you use the Internet to escape from problems or to relieve your dysphoric mood? (Feelings of powerless, guilty, anxiety, depression?)

nected to the resulting loss of control. They also focused their attention on the intense anxieties and worries relevant to immoderate Net use (see table 2).

Until now, IA did not belong to any formal diagnostic system. People affected by the syndrome can be included in the category of disorder of impulses control not differently

specified. Nonetheless, proposals to include this type of addiction into the next edition of the DSM became even more persistent. One proposal came from the pages of the authoritative American Journal of Psychiatry, in which J. Block published an article where he identifies IA as a particular type of disorder referable to the compulsive-impulsive specter (Block, 2008).

Table 2  
*Diagnostic criteria for the Problematic Internet Use (Shapira, 2000)*

A. Maladaptive concern related to the Internet, as shown by the following:
1. Concern related to the Internet known as irresistible.
2. Immoderate use of Internet for a period of time longer than planned.
B. Use of the Internet and relative concerns cause clinically significant anguish or weakening of social and professional areas, etc.
C. Immoderate use of the Internet does not happen only for periods of hypomania or mania, moreover, it is not better explained by other disorders.

#### THE EFFECT OF THE DISORDER

IA effects on people vary in a substantial way. It depends on the methodology of the survey (surveys conducted on the Internet or not on the Internet) and the type of instruments used (questionnaires based on several diagnostic criteria). Generally, online surveys indicate a rate of diffusion between 3% and 11% (Kershaw, 2005; De Angelis, 2006). For instance, Greenfield's survey conducted on a sample of 17,251 subjects with an age between eight and 85 years old, shows a disorder effect rate equal to 5.7% (Greenfield, 1999).

More recently, a survey completed by Korean researchers underlined a lower effect rate (Wang et al., 2003) in which only 3.47% of participants became addicted to the Internet. Most likely, these surveys prove that multiple factors influence differences in obtained results. For instance, while Greenfield (1999) focused his attention only on American users, Wang and his staff members studied only Korean subjects. Moreover, Wang and his collaborators used the Internet Addiction Test proposed by Young. It is an instrument represented by a scale with 20 items called the Likert scale. The structure of this test is very different from the yes/no answers test used for Greenfield's survey.

Generally, studies completed on the Net can be more successful at gathering a large quantity of data in a relatively short period of time (Egger & Rauterberg, 1996; Eppright et al., 1999). Studies conducted online can select subjects that use the Internet frequently or that think they may have a problem with Internet use.

Those surveys that are not conducted on the Net on the basis of random selection of subjects represent an important way to carry out studies on IA. Until now, only one survey has been published on this phenomenon among the general population that used offline random sampling. This survey shows a very low diffusion rate varying from 0.3% to 0.7% (Aboujaoude et al., 2006).

#### THEORETICAL PATTERNS

In this review, we will analyze some of the patterns that may help to explain the IA phenomenon.

Young's ACE pattern (1998) summarizes the main factors that can contribute to disorders related to the Internet:

- Accessibility: the easy and immediate accessibility to any online service allows an immediate gratification of the smallest need.
- Control: the very high level of control that can be per-

formed on online activities induces an unreal perception of omnipotence.

- Excitement: the large quantity of stimuli present on the Net allows users to reach a high level of psychological excitement.

In his study, Davis (1999) used a cognitive-behavioral approach, explaining that base for Pathological Internet Use (PIU) comes from problematic cognitions linked to some behaviors that intensify or detain the disadaptive response (see figure 1). This theory highlights cognitions and thoughts of the individual that contribute as the main

source of abnormal behavior. According to the author, the disadaptive cognitions related to a person start with the Internet and could refer to himself/herself (by doubting about his/her personal esteem) or to the world (generalizations or thoughts about everything and nothing). The product of these cognitions is a PIU that can be specific or generalized. The specific PIU defines people depending on an Internet-specific function, such as erotic material, gambling, auctions, etc. These types of dependencies are content-specific addictions and will exist regardless of the presence of the Internet. The generalized PIU, instead, includes a generalized and multidimensional overuse of the Internet.

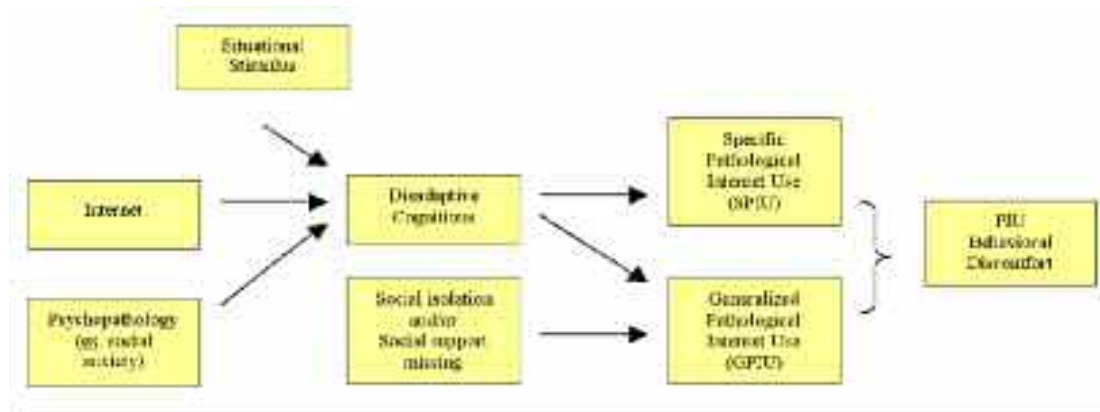


Figure 1. Davis's cognitive-behavioral model (Davis, 1999).

Recently, Cantelmi and Talli (2007) have developed another pattern type (see figure 2). The idea behind this pattern is that during "normal" use of the Net, there should be a progressive increase in experiences, in the same way as the use of major online instruments and services. If the first approach to the Net is usually represented by the use of e-mail or moving quickly from one site to another, then other, more complicated and sophisticated applications will be used, such as chat, newsgroups, MUDs, etc.

In the "pathologic" use of the Net, this process repeats itself, but in a symmetrical way. Regardless of the experiential background acquired with previous connections, the user will gradually downsize the use of the Net by increasing his/her time online progressively. Obsessiveness is typical of specific themes of the Net such as cybersex, MUDs, etc.. The authors distinguish four precise evolutionary phases that push the user towards becoming progressively addicted to the Net:

-Entry into the Net: The user initiates contact with the Net through surfing the Internet or exchanging e-mails. The user is bewildered and curious about new experiences. From a relational point of view, he establishes a relationship with the Internet—a new type of relationship defined as "man-machine." Even though the user communicates with other people, these people will become a secondary interest compared to the technological enchantment of the Net.

-Use of the Net: The user is able to use a wide variety of instruments and services and can use the Net with enough security. He/she is also aware of the dangers characterizing this technology. From the relational point of view, he/she establishes a relationship with the Internet defined as "man-machine-man" meaning the Net will be conceived as a means of communication.

-Abuse of the Net: The user begins to select more satisfying applications of the Net. He/she increases their time

spent online and the frequency of connection to the Net. From a relational point of view, he establishes a kind of relationship defined as “man-machine-man.” The user begins to use the Net to meet people online, even though he may not be aware of it.

-Net Addiction: The user limits the use of the Net by dedicating his/her time to a few applications and services (particularly chat and MUDs). From the relational point of view, he establishes a relationship defined as “man-machine.” Even though the user communicates with other people, these relationships will be con-

ceived as objects of pleasure.

Use of the Internet in relation to addiction has been confirmed in numerous international studies. Addicted users tend to prefer game sites, chat and beyond that, sites containing pornographic material (Morahan-Martin & Schumacher, 2000; Chou & Hsiao, 2000; Leung, 2004; Simkova & Cincera, 2004). Moreover, the increase in time spent online, one of the other aspects that underlies the model, is one of the evaluation criteria formulated by Young to make a diagnosis of IA (Young, 1998).

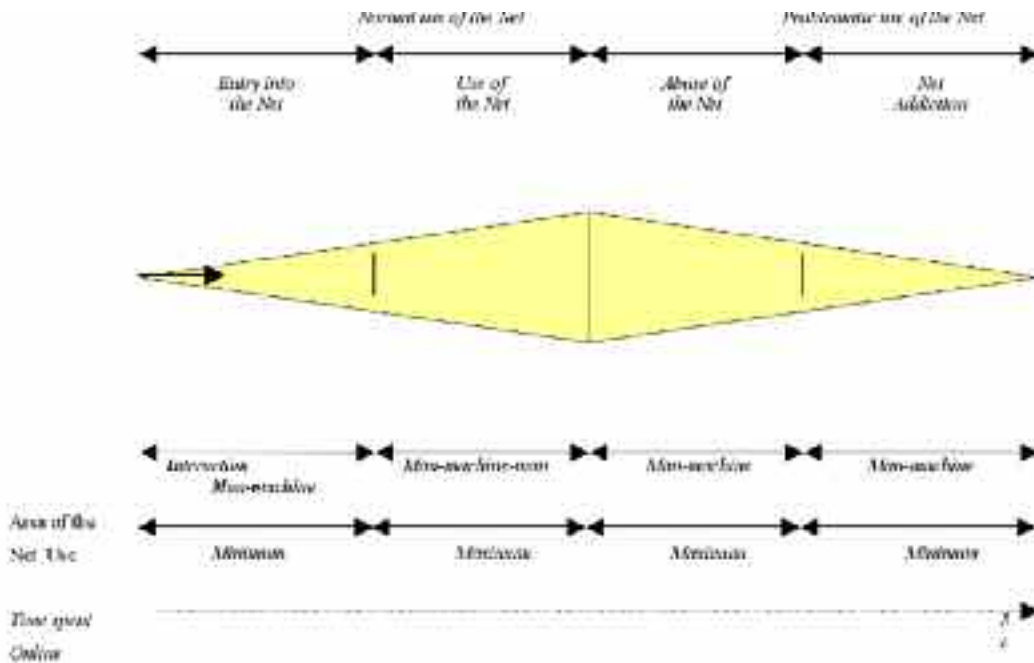


Figure 2. Symmetrical pattern (Cantelmi & Talli, 2007)

Grohol (1999) believes that subjects suffering from this disorder are, most frequently, new users of the Net. They are not accustomed yet to the new technological environment and remain “enchanted.” However, even those who have been using the Net for longer periods of time could develop the disorder, but only after discovering a new, particularly attractive application. Both new and old users have the capacity to reach stadium III, the stadium of balance, soon or later (see figure 3).

**MOTIVATIONS**

Observations on IA often define an Internet addicted user as a subject who seeks comfort in the Net to avoid thinking about his/her problems. In reality, the subjects choose to connect to the Net for different reasons. The same applications (chat, MUD, etc.) could have different meanings and consequences for the subject. Cantelmi and Talli (2007) hypothesize two different types of Net addicts—Net addicts for escape and Net addicts for action. The Net addict for escape represents the real “stereotype” of an In-

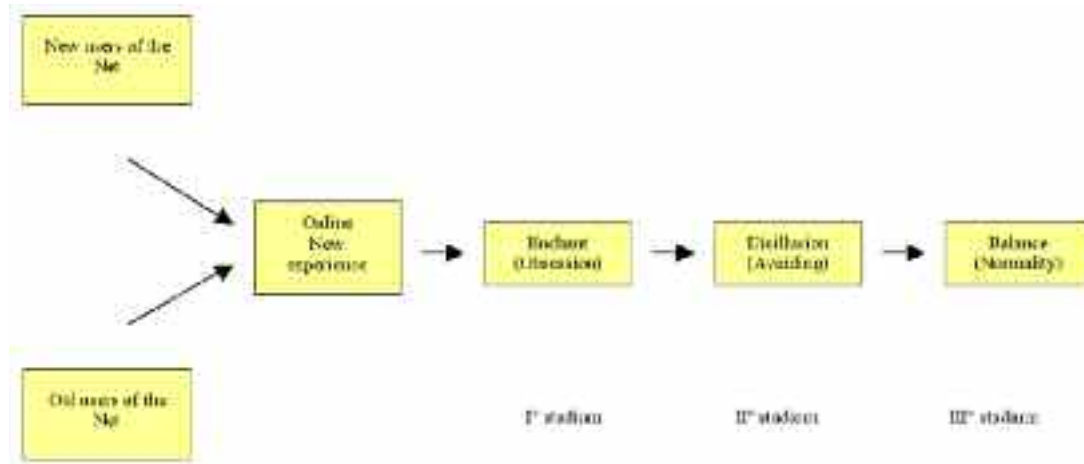


Figure 3. Grohol's pattern of the Pathological Internet Use (Grohol, 1999).

ternet addict, since they use the Net mainly to escape from his/her depressive life. His/her real life is characterized by objective problems and by a strong sense of impotence and social non-involvement. This type of user logs onto the Net exclusively to escape from the real sorrow of their life, without expectations for any successful personal change. In this case, the Net is like an analgesic. They do not believe they can change their psychological condition—they just need to use the Net for excitement and to dull their senses more and more. In those cases of intense intoxication the Net addict for escape replaces his/her real life with a virtual dimension, so that he/she will be facing striking dissociative and/or autistic psychopathological phenomena. Instead, the Net addict for action uses the Internet to achieve an objective that goes beyond the need to seek excitement. Cyberspace represents a large possibility of stimuli for them, but above all, the ideal space to make their high expectations become concrete. Action fields vary from online social relationships that can extend beyond the virtual dimension, to online gambling—considered by some to be a great occasion to make money. In those cases of intense intoxication the Net addict for action becomes so ambitious and far removed from reality that their actions can border on mania. It is known that the beginning of addiction, induced both by substances and behaviors, is caused by several factors. These factors do not come from the same situation, but they could come from several factors whose interaction can generate disorder:

**ADDICTION = INDUCING FACTORS+ TRIGGERING FACTORS+ PERPETUATING FACTORS**

Both the Net addict for escape and the Net addict for action uses the Net for excitement. But while the first addict uses it to escape from problems, the second type uses the Net to achieve success or make a change in their life. According to the aetiological sequence of the addiction, it is necessary to specify that the real target of online use is basically taking action online and not the excitement itself. Concerning the predisposition to IA, we have to consider a different psychological situation depending on the type of IA being discussed. In the case of IA for escape, people with more depressive aspects to their personalities and/or a tendency toward social difficulties would be more likely to develop the syndrome. On the other hand, in the case of IA for action, more vulnerable personalities would be those characterized by personal disorders (narcissism, obsession, etc.) and/or depressive (compensated) or maniacal aspects. However, it is important to note that subjects can use every online service for both escaping and for seeking success. Graphically, IA can be represented as a continuum that begins with the addiction for escape and arrives at the addiction for action (see figure 4).

Such a pattern can also integrate a transactional analysis (TA). The authors distinguished four fundamental attitudes or positions concerning how an addicted user perceives himself/herself, his/her surrounding reality and the virtuality of the Net (see table 3). For every position, it is possible to define the principal conditions in the life of the

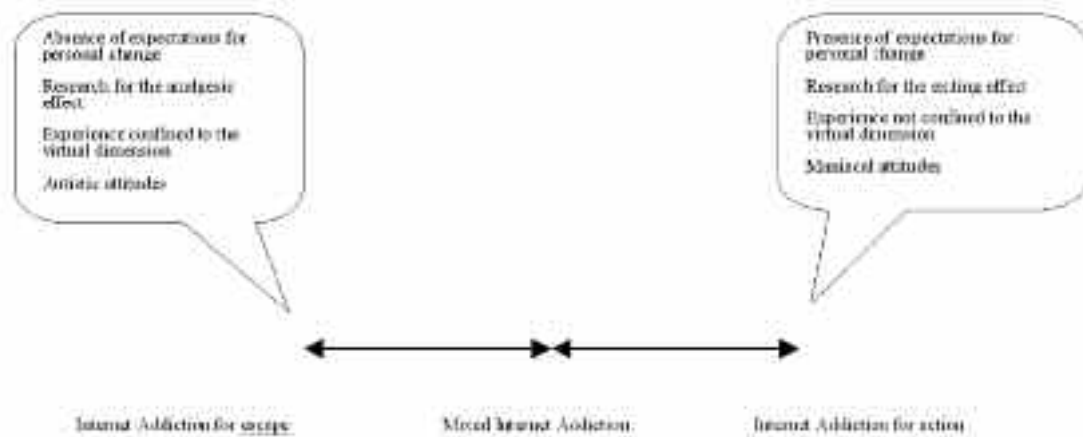


Figure 4. Continuum of the Net addiction.

subject, and their probable type of use of the Net (Net addict for escape or the Net addict for action).

#### FROM IRCs TO METAWORLDS

More than once it has been stated that not all Net applications present the same potentiality to create addiction, since each one implies the beginning of different psychological mechanisms. According to a well-known study carried out by Young (1997), addicted users spent longer amounts of time in synchronic communication environments like chats (35%) and MUDs (28%). Therefore, we assume that the same synchronic communication induces such gratification that it triggers even more active behavior from the user. Moreover, we can distinguish other additive characteristics connected to these particular resources.

For example, MUDs present outstanding elements of de-personalization, since they use a technology that minimizes playful contest by making identification of the player with the character easier (Cantelmi et al., 2000; Cantelmi & Giardina Grifo, 2002).

However, chats can represent an excellent modality for escaping from reality and everyday life. In chat rooms it is possible to interact with other users without being recognized and it is also possible to express personality with no fear of being judged. It is possible to take a fictitious identity and feel accepted and desirable to other users (Cantelmi & Giardina Grifo, 2001).

A less common phenomenon related to this type of communication is the so-called Zigarnick effect. It is a state of anxiety and accentuation of a thought linked to an interrupted conversation occurring in a chat setting online. The user disconnects from the Net, but continues to think about a dialogue that is still going on, even though they are not taking part in it (Martignago, 2001).

Many of the aspects underlined so far are developed by the so-called "metaworlds," such as Second Life, a popular example. What characterizes these virtual worlds is the chance to have an alter ego available—a digital representation of them self (an avatar)—that interacts in a world where other characters correspond to real people. Each encounter or conversation happening in Second Life, therefore, takes on the connotation of a real, interpersonal relationship. Differently from chats and MUDs, there is a strong element of human communication through the means of non-verbal language. It makes interactions more appropriate, if compared to real interactions, even though the avatars mediate the communicative exchange. In the metaworlds, we can find the same mechanisms of persuasion used in their advertising, whereas the most frequent expressions are "make your dreams come true" or "you will get what you desire."

Randazzo states, "Just like in the advertisement, the desire to be more than what we are is encouraged: more beauti-

Table 3  
*Net analysis (Cantelmi & Talli, 2007)*

Perception of the reality (good - bad)	Perception of itself (good - bad)	Perception of the virtuality (good - bad)	Feelings
bad	bad	good	The subject uses the net to avoid to think about himself and the surrounding reality (anti-identification). Not added for escape
bad	good	good	The subject uses the net to escape from a frustrating reality (gateway). Not added for escape
good	bad	good	The subject uses the net to increase his/her self-esteem (self-respect) or as mediator of his/her relations with the reality. Not added for escape.
good	good	good	The subject uses the Net in a specific way in order to increase his/her excitement level or to reach precise objectives. Not added for action
bad / good	bad / good	bad	In this case the subject cannot depend on the Net

ful, richer, stronger, more powerful. While in the advertisement they make promises in order to persuade people to buy an object, in Second Life they promise a different life” (2008).

The major risk with becoming more involved in Second Life or other metaworlds takes place when people choose the virtual world as option over the real world. To the user,

the consistency of the metaworld compared to real life offers the certainty of a family pattern and a pattern closer to our stereotype. The wider range of possibilities offered by the parallel reality can also make it more attractive than the real world.

**CYBER-INTOXICATION**

Interactive spaces are not the only Net environments with irresistible and attractive characteristics, even though the

majority of the cases of immoderate Internet use can be ascribed to them.

Among the most important new addictions already supported by the clinical case histories (most documented in the U.S.) are:

- Cybersex Addiction. The word "cybersex" concerns all activities with sexual features performed on the Net by using e-mail, IRC, CUSeeMe channels, etc. The typical user who engages in cybersex is a person who is afraid of a real physical relationship and who has difficulties being involved in affective relationships. However, it is possible to observe Internet abuse and addiction situations even in those subjects that have good affective and relational resources. In these cases, they develop an additional modality involving virtual sex use not because they are afraid of real sex, but because they adopt an attitude that, at the beginning, is playful. Some of them can keep this aspect under control, but some others get progressively involved, and this can result in compulsivity and the need to log on for hours and hours everyday.

- Compulsive Online Gambling. This disorder has already been recognized for a long time and is included in the mental disorders diagnostic manual. The chance to have access to virtual casinos or sites for gamblers from home enables the development of this compulsion and has a negative effect on relationships and finances in real life. It can also affect very young people.

- MUDs Addiction. As stated earlier, MUDs (Multi-users dungeon or Multi-user dimension) are interactive role-playing games, in which users can interact simultaneously. It consists of creating a fictional character with which the subject identifies and plays. The player can decide on physical and mental features of his/her alter ego, places they will visit, etc. Compared to traditional role-playing games, MUDs includes more aspects of depersonalization because the technology employed makes the playful context less evident and enables a major identification of the player with the virtual character.

- Cyber Relationship Addiction. Some subjects suffering from IA feel a strong need to establish amicable/affective relationships throughout e-mail, chat lines or newsgroup, to the detriment of their own real familial and social relationships. Since there is sometimes a lack of visual representation, people involved in chat can lie about their identity (concerning physical features, age, sex, job and

status) in order to feel the euphoria of indefinite freedom. They can introduce themselves to other people and have the chance to fulfil their "ideal ego" in a virtual setting. In this way, they maintain a satisfactory virtual image of himself/herself, created among acquaintances and people regularly getting in touch, which remains confined to the limits of the Net. On one hand, the use of chats reproduces a relational and communicative context with the "other," and on the other hand, it implies the risk to deny or get in touch with the "other" in a partial or narcissistic way.

- Information Overloads Addiction. This kind of addiction, well known in work environments, is characterized by the exhausting research for any type of information, even trivia. The user does not distinguish between useful information and useless information. It is possible to search for information using an activity like web surfing (passing from one site to another) and/or surveys conducted on material placed in a database.

#### MEANS OF ASSESSMENT

Many tests have been created to evaluate IA. Some of them include the Internet Addiction Questionnaire, Suler (1996), Davis Online Cognition Scale, Davis et al. (2002), Chen Internet Addiction Scale, Chen et al. (2003) and Internet Addiction Test, Young (1998). Young's is probably the most widely used worldwide (Talli et al., 1998). In Italy Del Miglio, Gamba and Cantelmi (2001) proposed an instrument called Use Abuse Internet Addiction (UADI). This questionnaire was drawn up at "La Sapienza" University in Rome, and is the only Italian instrument applicable to the affected population. UADI is made of 75 items. It is possible to answer each item using the Likert scale, consisting of five levels (1=absolutely false; 2=rather false; 3=neither true or false; 4=enough true; 5=absolutely true).

The test shows five main dimensions:

- Compensatory escape (EVA): the tendency to escape from everyday difficulties through Internet use;

- Dissociation (DIS): the appearance of bizarre sensory experiences;

- Impact on real life (IMP): the appearance of consequences in the real life, change of habits, moods and social relationships;

- Experimentation (SPE): the tendency to use the Internet to experiment with parts of oneself and/or seek new emotions;

- Addiction (DIP): the appearance of signs of addiction, including progressive increase of time spent online, compulsivity and excessive involvement.

Cantelmi and Talli (2007) propose to examine the IA phenomenon in the most objective way possible, using software that overcomes the classical methodology of the “self-report” questionnaire. The developed software (IRPAS) can operate in an unobtrusive way—this means that the user will be aware of it only when Internet use is possibly becoming problematic. In this particular case, the software will start up and warn the Net user about the dangers related to its abuse.

The software performs two different types of analyses:

- Quantitative analysis: Since the program can detect the actions of the user online (for example, in chats and MUDs) and the connection time, it can evaluate the level of involvement achieved by the user (if he/she abuses the Net and how much he/she depends on the Net) and some important indicators such as tolerance risk or dissociation risk (see table 4, next page).

- Qualitative analysis: The program displays the main contents explored during Web navigation (pornographic, political, ecological contents, etc.) and calculates the appearance frequency. In this way, for example, it is possible to understand whether a subject uses chat for friendship or sexual reasons (see figure 5).

In terms of use-abuse-addiction, the software calculates daily involvement (Cg) on the basis of some indicators, such as the frequency of daily use (Fg), basic motivation (M), if it is playful or working, daily time spent online (Tg), difference of time spent online in the last two weeks (Ts2 / Ts1) and the level of daily exposure (Eg). Particularly, the last indicator represents the trend of how much time the subject is connected to the Internet without interruption. The higher this value is, the higher the probability that the subject develops a dissociative symptomatology. The ratio Ts2 / Ts1 allows the evaluation of the tendency of the subject to progressively increase his/her time spent online (tolerance phenomenon).

$$Cg = (Fg \cdot Tg \cdot Eg / M) \cdot (Ts2 / Ts1)$$

Concerning the qualitative analysis, contents most frequently researched by users are counted and grouped into general categories such as violence, sex, etc. In this way, it is possible to integrate the results of the quantitative analysis with content information, so that it is possible to outline interests and needs that the Net satisfies for the subject.

This operation allows the understanding of whether a subject uses the chat for friendship or sexual reasons and whether his/her form of MUD addiction concerns role-playing with a sexual or violent content.



Figure 5. . Examples of qualitative analysis (Cantelmi & Talli, 2007).

Table 4  
*Examples of quantitative analysis (Cantelmi & Talli, 2007)*

Online Activity	Daily Frequency	Time spent online (minutes)	Tot. / Tot.	Reason exposure	Motivation	Involvement
				1=<120'	1=Personal	
				2=<121'-240'	2=Working	
				3=>241'-360'		
				4=>360'		
Chat	3	30	0,75	1	1	67,5
Facebook	2	12	1	1	1	24
Research	5	2	0,56	1	2	33
Gambling	0	0	0	1	1	0
Mail	6	120	1,2	5	1	8075
Download	0	0	1	1	1	0
Web	4	20	0,56	1	2	26,4
Game	2	244	1	2	1	976

Contents	Percentage
Violence	46
Sex	12
Group	10
Nature	0
Money	7
Culture	5
Music	5
Politics	5
Total	100

Level of involvement	Use of the Net	Televisual Risk	Dissociation Risk	Diagnosis
Use	Generalized	No	No	MUD Internet Addict in the addiction phase
Abuse	Specific	Yes	Yes	MUD internet is predominantly violent
Dependency				

#### WHAT KIND OF TREATMENT?

As Young already noted, finding the right treatment to this problem has been difficult. It has been even more difficult in a country like Italy. Many psychiatrists and psychotherapists are not qualified yet to handle IA and some others do not recognize its existence (Fata, 2000).

As a rule, the following treatments are prescribed:

- Self-help Groups: composed of people with the same problem, they share the same experiences in order to reacquire control over the Net.

- The Twelve Steps: this supports the personal and spiritual recovering of the individual through a method similar the method used for Alcoholics Anonymous.

- Therapeutic Counseling: counseling helps Net addicts become aware of their problem by encouraging psychological change.

- Individual Psychotherapy: it is suggested particularly if IA goes with the previous pathology. Patients become aware of the deepest parts of themselves and how they can change.

- Detoxification Strategies: useful to face up to and resolve problems, especially from the behavioral point of view. Despite the scarcity of studies conducted on the above-mentioned forms of treatment, Italy has been amongst the first of the European countries to experiment with a new form of online psychotherapy aimed at treating cases of Net Addiction. The service, accessible through the site [www.psychinside.it](http://www.psychinside.it), offers free counseling and therapeutic supports (Cantelmi, Putti & Talli, 2001).

#### CONCLUSIONS

In the last 10-15 years, few phenomena underwent such considerable growth as the Internet. Few technological innovations have been able to, in such a short amount of time, enter into common use and influence everyday life so much. "The technical evolution of the information mean is so fast that the analysis of a phenomenon will be completed when the phenomenon readapts itself or gets transformed into another" (Gaston, 2005).

Nonetheless, in this review provided references to help determine what is and what is not IA. Therefore, we gathered a large amount of information and data, disconcerting for its proportions, like the unquestionable pathological potential of the Net. Even though completed studies are not yet able to discern a cause/effect relationship, the appearance of

specific symptoms concerning intensive use of the Net shows that we cannot deny that the Net represents a strong catalyst for preexisting psychopathologies. It embodies an ideal place where it is possible to express the worst and the most pathological aspects of oneself.

It has been verified that an important psychopathologic risk indicator is represented by long amounts of time spent online. The greater the amount of time spent on the Net, the higher the probability is of developing one of the various forms of addiction. On the basis of our experience, the user should not exceed five to six hours per day, only for work or study reasons (Cantelmi & Carpino, 2005).

Among the new contributions we presented, it is important to mention IRP-AS, software for the evaluation of the syndrome on the basis of time spent online. This instrument could represent a large amount of support for preventing new addiction cases. Similarly to vehicular accidents, instruments such as speed cameras can detect speed to prevent incidents.

In order to take advantage of the considerable capacity of the Net without risk of becoming "trapped," it is necessary to know the instrument adequately, be aware of the factors encouraging telematic overdose and recognize the signs warning us we are abusing it.

We discussed the Second Life phenomenon, in which there are six million inhabitants. Recently, designers have implemented new software that allows voice communication between Avatars who share the same virtual dimension. A new interactivity system will surely follow among users and the virtual world, such as tactile instruments or instruments for the perception of perfume. In the future, the monitor could be replaced by the use of specific glasses already used in the most sophisticated Virtual Reality games and by military pilots during flight simulations. The instinctive movement of the eyeball would be replaced by the movement performed by a mouse, obtaining the three-dimensional illusion of moving and taking action in the virtual environment, as if the user were really in the observed world. In the next future, the current studies on the neurosciences could develop into the use of neuronal sensors. Researchers could be able to blend the holographic image of the virtual dimension with the cerebral image into a single vision. This already happens when we watch a movie and we become so absorbed in the scene that we may lose the outlines of the screen (Nattero & Barbadoro, 2007). In this case, the captivation of the Net would be equal with the perspectives that we could imagine...

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