

Cyberspace Psychopathology

Mental dislocations, avatar-mediate personalities, autistic behaviors and out of control attitudes.

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Abstract

In this review the authors, after a first description of the “Internet phenomenon” and particularly of the psychological and psychopathological risks related to its use, propose the reader a series of unpublished papers on this theme, developed during the last year. In this review a lot of interesting aspects are discussed: the problem of defining the syndrome and the possible criteria; the explanatory models proposed by various authors and the possible therapy of the syndrome.

Key words.

IRP (Internet Related Psychopathology), cyberspace, addiction, avatar, diagnostic criteria.

Introduction

It was around 10 years ago when we studied the so-called Internet Addiction for the first time. (Cantelmi e Talli, 1998). Our interest in this unique pathology appeared when a lady from Northern Italy came to our department showing clear dissociative signs after a prolonged exposure to the Net. We could not identify the precise role played by the Net. Even though we analyzed in detail her clinical picture 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 few 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” spread at global level by becoming the best mean of communication among all the others. From one side, its spreading increased scientific knowledge related to the Net psychopathologic aspects and from the other it made possible to get every kind of information from it.

The technology, on which the Net is based, has changed. The broadband has enabled safer and faster connections, at the same time the arrival of the telephony and digital TV made Internet more useful and attractive. Nevertheless, its anarchic spirit remained pleasantly integral, just like its capability to stimulate fresh mental paths.

This review intends to examine the most important scientific contributions obtained so far. English authors, who outlined an ideal route marked by the following contents, have provided most of the contributions as: definitions, diagnostic criteria, impact of disorder, theoretical patterns, tendency, Net services and toxicity, means of assessment, treatment.

As conventionally agreed, we will use the expression *Internet Related Psychopathology* (IRP) in order to indicate a series of online disorders and behaviors (cyber-sex addiction, cyber- relationship addiction, muds addiction and so on...) (Cantelmi et al., 2000).

Moreover, we will fully touch the new scientific contributions that our equip developed in the last year. They represent a new knowledge that we hope will enrich the 1998 heritage.

Twenty-eight definitions for a disorder.

The very first computer addiction cases appeared already in the 70s and 80s (Shotton, 1991). It is obvious that those kinds of problems were related to the PC use-abuse and not to Internet, since it did not exist yet.

It was the American psychiatrist Ivan Golberg (1995) the first scholar who assumed this “illness” by defining it *Internet Addiction Disorder*. He edited on the web all relative diagnostic criteria with a provocative purpose. 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 e Hollander, 2002), etc.

Similarly to the Chinese boxes, IRP can be intended as a smaller subset of a bigger problem that on the basis of the specific addiction object (see the terminological table) can be split up in *Cybersexual Addiction*, *Cyber Relationship Addiction*, *Muds Addiction*, *Compulsive Online Gambling*, *Compulsive Online Shopping*, *Information Overload Addiction*, *EBay Addiction* and *Trading Online Addiction* (Young, 1996).

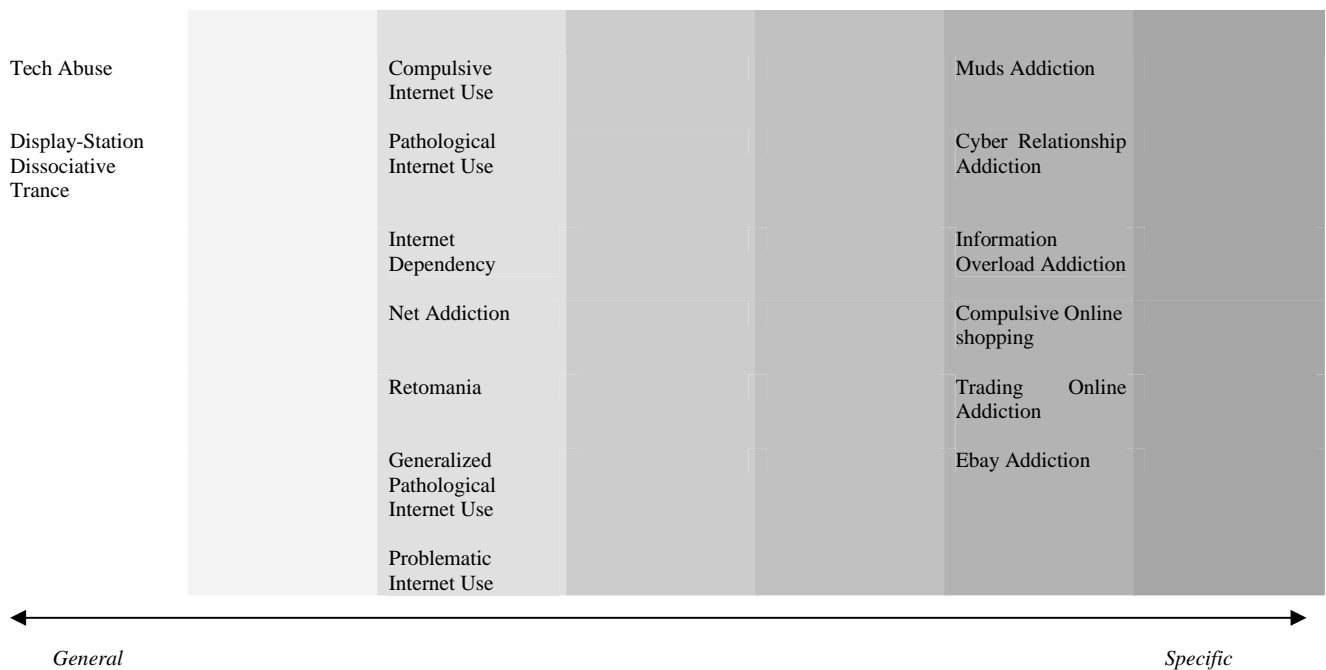
Lavenia and Marcucci (2005) perform a further distinction between *Cybersex Addiction* and *Cyberporn Addiction*, by assigning to the first type of addiction a sexual interactivity (man-machine-man system) that is completely absent in the second type of addiction (man- machine system).

In his cognitive-behavioral pattern, Davis (1999) suggests to use the term *Specific Pathological Internet Use* (opposing to *Generalized Pathological Internet Use*) in order to identify any specific form of online Addiction. As already said, the authors of this article proposed the acronym IRP that stands for *Internet Related Psychopathology*.

We suggested a further definition in order to underline the “exhilarating” aspect of the Net.. Indeed, with the word *Retomania* we want to specify a kind of “almost-maniacal” exaltation culminating into dissociative remarkable phenomena (Cantelmi et al., 1999; Cantelmi, 2000).

Carretti offers a good remark by explaining the Video Display Dissociative Trance. As provided by the DSM he confirms that it is a disorder induced by technology. It shows a clinical picture that can be related to an intense Internet intoxication (Caretti, 2000; Cantelmi, 2001).

Technological Addiction	Pathological Computer Use	Internet Addiction	Specific Pathological Internet Use	Net Compulsion	Cybersexual Addiction	Cybersex Addiction
Cyber Addiction	Compulsive Computer Use	Internet Addiction Disorder	Internet Related Psychopathology		Compulsive Online Gambling	Cyberporn Addiction



Terminological itinerary of IRP in accordance with a “general-specific” continuum.

Diagnostic criteria.

Historically, IRP has been diagnosed by using assessment criteria different among them. 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 those people affected.

Afterwards, she thought to apply the same criteria to the pathologic gambling. This disorder is considered very close to IRP phenomenology, since it does not imply the assumption of chemical substances (Young, 1998 e Potenza, 2006). Some criteria for the pathologic gambling (“run-up” to the losses, committing illegal acts to finance the game and finding money to relieve a financial situation caused by the gambling) were not considered applicable to IRP, indeed a new specific criteria was created by scratch (spending online more time than predicted) Johansson, Gotestam, 2004; Leung, 2004.

Shapira and his colleagues (2000) proposed some interesting guidelines that highlight the emotional aspects connected to the loss of control. They also focus their attention on the intense anxieties and worries relevant to the immoderate Net use.

Recently, the authors of this article proposed a set of criteria organized in *overt* (evident) and *covert* (hidden) symptoms. In order to diagnose the disorder it is necessary identify at least two *overt* symptoms and at least two *covert* symptoms, for a period of time not inferior to 6 months (Cantelmi e Talli, 2007).

Up to now IRP does not belong to any diagnostic system yet. People affected by the syndrome can be included in the category of the *Disorder of impulses control not differently specified*. Nonetheless, proposals to include this type of addiction into the next edition of the DSM (Diagnostic and Statistical Manual of Mental Disorder) become even more persistent. Last proposal came from the pages of the authoritative

American Journal of Psychiatry. J. Block published an article, where he identifies IRP as a peculiar type of disorder referable to the compulsive- impulsive specter (Block, 2008).

It is necessary that 5 or more of the following symptoms show:
1. Do you feel excessively absorbed by 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 satisfaction?
3. Did you try 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 keep staying online longer than you plan?
6. Did you risk loosing important relationships at work, at school because of 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 Internet to escape from problems or relieve your dysphoric mood? (Feelings of powerless, guilty, anxiety, depression?).

Diagnostic Criteria for Internet Addiction (Young, 1998)

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

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

It is necessary the presence of 2 or more OVERT symptoms and 2 or more COVERT Symptoms for a 6 months period of time at least. Symptoms are not better explained by other disorders.
OVERT
1. Too much time spent logged on, not justified by work or study reasons.
2. Evident offline symptoms (ex. nervousness, irritability, Depression, etc.)
3. Negative consequences due to the immoderate use of Internet. (ex. Social isolation, scarce work efficiency, etc.)
COVERT
1. Unrestrainable impulse to connect to Internet
2. Repeated attempts to control, reduce and interrupt Internet Use
3. Frequent lies about immoderate Internet Use
4. Recurring thoughts or imaginations about Internet.

The effect of the disorder

The figures of IRP effects on the population vary in a substantial way. It depends on the methodology of the survey (surveys conducted in or out of the Net) and the type of instruments used (questionnaires based on several diagnostic criteria). Generally, online surveys indicate a rate of diffusion included between 3% and 11% (Kershaw, 2005; De Angelis, 2006).

For instance, Greenfield' survey conducted on a sample of 17251 subjects with an age between 8 and 85 years shows a disorder effect rate equal to 5.7% (Greenfield, 1999).

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

Generally, studies completed on the net can better gather a big quantity of data in a period of time relatively short (Egger e Rauterberg, 1996; Eppright et al., 1999). Nonetheless, online supply can select subjects that use Internet frequently or that think to have a problem in the Internet usage modality.

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

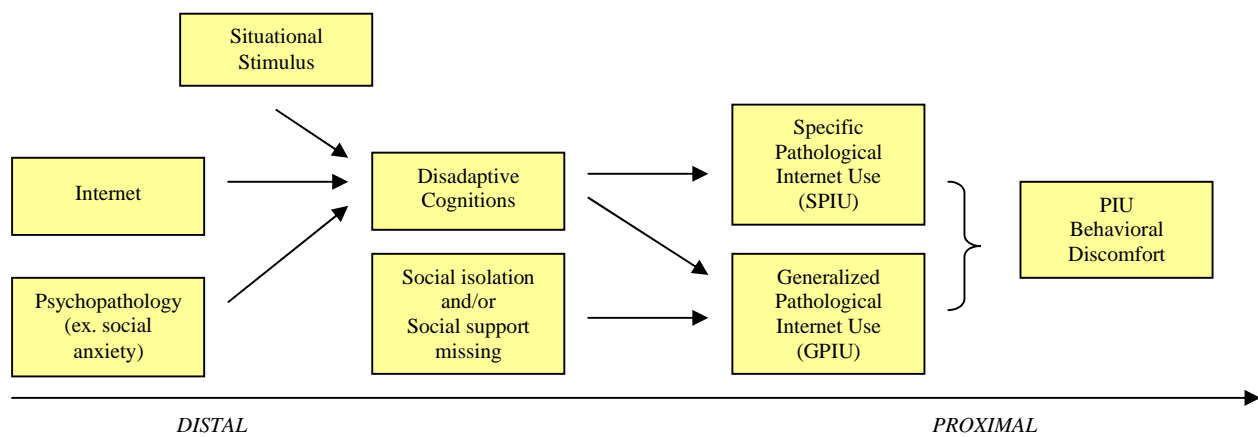
Theoretical patterns

In this review, we will analyze only some of the patterns proposed aiming to explain IRP phenomenon.

Young's ACE pattern (1998) summarizes the main factors that make easy and/or induce the beginning of the disorders related to Internet:

- Accessibility: the easy and immediate accessibility to any online service allows an immediate gratification of the smallest need.
- Control: the very high control that can be performed on the online activity goes with an unreal perception of omnipotence.
- Excitement: the huge quantity of stimulus present on the Net allows reaching a high condition of psychological excitement.
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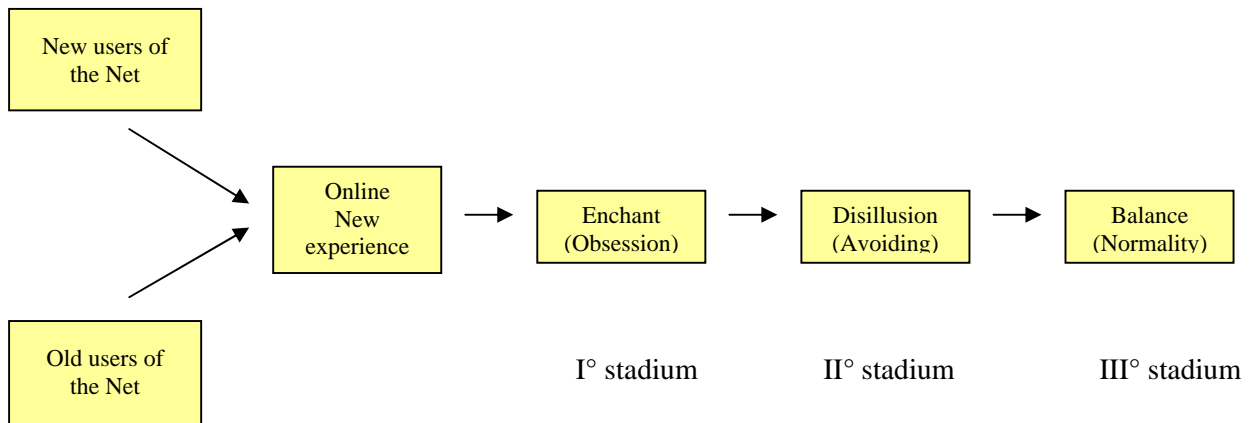
In his pattern, Davis (1999) uses a cognitive-behavioral approach, on whose base the *Pathological Internet Use* (PIU) comes from problematic cognitions linked to some behaviors that intensify or detain the disadaptive response. This theory highlights cognitions and thoughts of the individual intended as main source of the abnormal behavior. According to the author, the disadaptive cognitions related to a person starting automatically with Internet 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 (ex.: erotic material, gambling, auctions, etc.). These types of dependences are specific-content addictions and will exist regardless the presence of Internet. The generalized PIU, instead, includes a generalized and multidimensional overuse of Internet that can be referable to the use of the Net.



Davis's cognitive-behavioral model (1999)

Cantelmi and his colleagues suggested a pattern that shows a virtual path pushing the subjects to become real net addicted users in a progressive way. Initially, users experienced a *toxiphilic phase*, characterized by a constant and growing interest in the email checking and a certain persistence in surfing on the web. Afterwards, they experience the *toximaniac phase*, characterized by a hyper focalization on interactive applications as chat and mud, by building a multiple identity (Cantelmi et al., 2000).

Grohol (1999) believes that subjects suffered from this disorder are, more frequently, new users of the Net, which not accustomed yet to the new technological environment remain as “enchanted”. However, even those who have been using the net since longer time could develop the disorder, but only after discovering a new particularly attractive application. Anyways, both new and old users will reach stadium III, the stadium of the balance, soon or later.



Grohol' s pattern of the Pathological Internet Use (1999)

According to Carretti, the Video Display Dissociative Trance (*Trance Dissociativa da Videoterminale*) (Caretti, 2000) represents one of the possible consequences of the pathological computer addiction and its applications. This disorder implies an involuntary condition of trance with alteration of the awareness condition, depersonalization and loss of the usual sense of personal identity that can cause a possible personal replacement of the original identity with an alternative one. From the psychodynamic point of view, we can distinguish three evolutionary levels: addiction, regression, and dissociation.

Addiction implies:

- A ritual hyper-involvement with the computer and its applications;
- An obsessive-compulsive relation with the virtual experiences and realities;
- A tendency to dream with open eyes prevailing over the action in the real relationships;
- An aware or unaware shame as peculiar detail of the weakness of the Ego;
- Phobic tendencies towards social life.

Regression implies:

- A tendency to imaginary relationships that compensate lacking real relationships;
- Autistic retreat;
- Autistic fantasy as defensive modality of the Ego.

Dissociation implies:

- Liability of the borders of the Ego;
- Dispersion of the Oneself;
- Depersonalization that is separation and alienation from themselves until the loss of the vital contact with the reality.

Digital Notes (1/6)

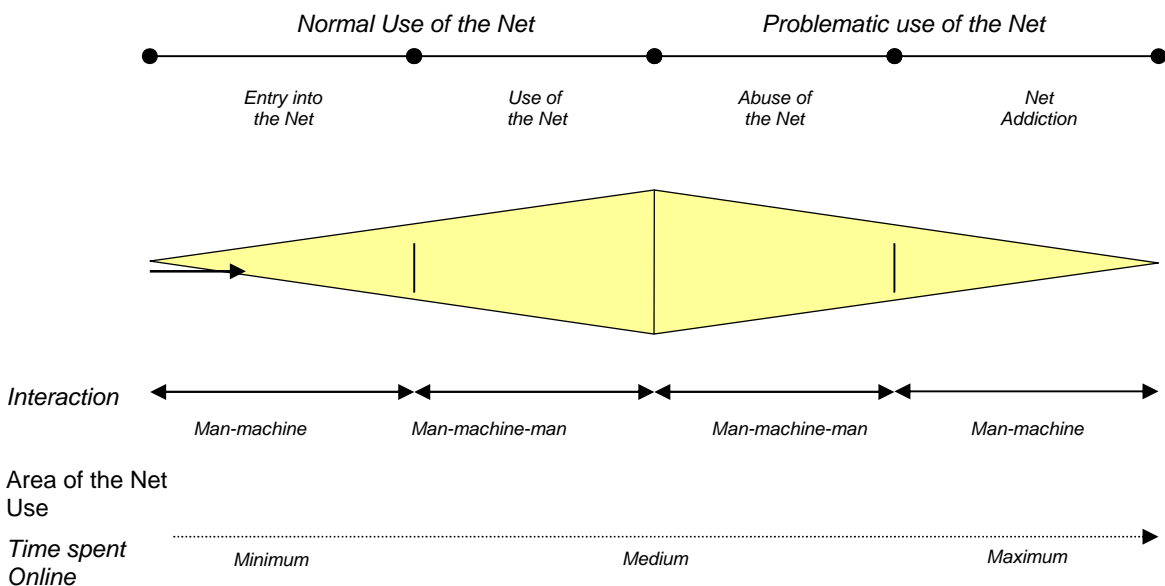
A simmetrical pattern

The idea of this pattern is that during the “normal” use of the Net there should be a progressive increase of the experiences, in the same way to the use of major online instruments and services. If the first approach to the Net is usually represented by the use of the email or of the web (by zapping from one site to another), then other more complicated and sophisticated applications will be used , such as chat, newsgropu, mud, etc..

In the “pathologic” use of the Net this process repeats itself, but in a symmetrical way. Regardless the experiential background acquired with previous connections, the user will downsize gradually the use of the Net by increasing his/her time online progressively. Obsessiveness is typical of specific themes of the Net such as sex and muds, etc.. We can distinguish 4 evolutionary precise phases that push the user to become progressively a real Net addicted:

- Entry into the Net: the user gets in contact with the Net throughout web or emails. He seems like as bewildered as curious to do new experiences. From a relational point of view, he establishes with Internet a new type of relation defined “*man-machine*” (even though the user communicates with other people, then these people will become a secondary interest compared with 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 is also aware of the dangers characterizing this technology. From the relational point of view, he establishes with Internet a relation defined “*man-machine-man*” (the Net will be conceived as a mean of communication).
- Abuse of the Net: the user begins to select more satisfying applications of the Net. He increases his time spent online. From a relational point of view, he establishes a kind of relation defined “*man-machine-man*” (the user begins to use the Net and he also uses people he meets online, even though he does not seem to be aware of it).
- Net Addiction: the user limits the use of the Net by dedicating his/her time only to few applications and services (particularly chat and muds). From the relational point of view, he establishes a relation defined “*man-machine*” (even though the user communicates with other people, these ones will be conceived as objets of pleasure).

From a graphical point of view we can summarize what we discussed so far in the following way:



Predisposition

Nowadays, it is not easy to draw a profile of the psychological characteristics of Internet users. Moreover, it is not possible to state with certainty whether there are inducing factors able to explain the abuse of such an instrument. It is obvious that the psychological (family and relational problems) or psychiatric difficulties (personality disorders, social phobia, etc..) represent a strong risk factor (Cantelmi, 2000).

Many studies could verify how various is the typology of Internet users and how different are the reasons that push subjects to have recourse to this new reality and get totally absorbed by it. Some subjects admit to use the web just because they look for a new exiting identity. Some others are just pushed by the stimulating perspective to remain anonymous. Some others use it just to reduce the strain and the everyday stress and some others just because they want to know new people and because they feel comfortable and safe on the Net.

According to a survey conducted by Marcucci and Lavenia (2004), IRP personalities would have in common the schizoid side. Individuals with this characteristic tend to isolate and have difficulties in building durable social relationships. Their interests and hobbies usually increase their condition of isolation from people since they are more interested in things (objects, machines, etc..) than in people.

It has been suggested that male subjects could have a major tendency to develop Internet Addiction because of the excessive use of the Net. Male subjects would be more dedicated to activities with a very high "tossicologic gradient", such as videogames, virtual sex and gambling (Morahan-Martin, 2000). This is what comes from many surveys conducted out of the Net on university students (Scherer, 1997; Morahan-Martin, 2000; Chou, 2000). For example, a survey completed on a sample of students in Taiwan shows that a very high percentage of male subjects had already used online games in comparison with female subjects (81.8% against 36.4%) (Ko et al., 2005). Moreover, this survey showed that male subjects had a higher score on a scale evaluating Internet Addiction (*Chen Internet Addiction Scale*), and that a higher amount of male subjects, compared to female subjects, spent more than 10 hours playing online (Chen et al., 2003).

According to Wallace (2000), people with a higher "locus of internal control" would be more attracted by the Net because of the sensations of control it offers (the chance of choice of websites, what to read and what to download, etc..) On one hand, an important difference has been ascertained between subjects who use the Net and subjects who do not use the Net. On the other hand, concerning the rate of internality, it was not possible to verify the same difference among groups of users with a diverse level of involvement (use, abuse, addiction).

Digital Notes (2/6)

Net Analysis

During this analysis we enjoyed applying the specifics of the Transactional Analysis relevant to IRP. We distinguished four fundamental attitudes (positions) concerning how an addicted user perceives himself/herself, his/her surrounding reality and the virtuality of the Net. We ascribed to each position the main reason and the probable use modality of the Net, that can be specific (a specific PIU is typical of users addicted by a specific Internet function- ex.: erotic material, gambling, muds, etc..) or generalized (a generalized PIU implies a generalized and multidimensional overuse of Internet referable to the use of the net. The abuse of the chat and emails are often considered a reaction to a social difficulty.

Reality (good – bad)	Subject (good – bad)	Virtuality (good – bad)	Position
bad	bad	good	The subject uses the net to avoid to think about himself and the surrounding reality (autistic seclusion). PIU is probably generalized.
bad	good	good	The subject uses the net to escape from a frustrating reality (getaway) PIU is probably generalized.
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. PIU is probably generalized.
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. PIU is probably specific.
bad / good	bad / good	bad	In this case the subject cannot depend on the Net.

Digital Notes (3/6)

“Net addicts for escape ” e “Net addicts for Action”

Writings about IRP often define an Internet addicted user as a subject who seeks comfort in the Net to avoid thinking about his/her problems. Instead, the pattern that has been proposed wants to show that “internet addicted” subjects choose to log onto the Net for different reasons and that the same application (chat, mud, etc..) could have different meanings and consequences for the subject.

It is possible to distinguish two different types of “Net addicts”:

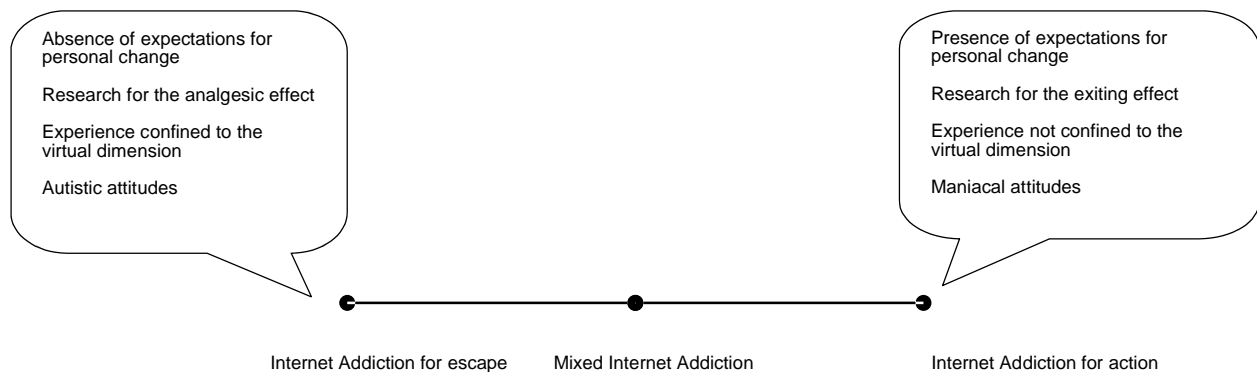
- Net addicts for Escape
- Net addicts for Action

The Net addict for escape represents the real stereotype for an Internet addict, since he uses 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. He/she logs onto the net only exclusively to escape from the real sorrow of his/her life without wishing any successful expectation or personal change (the Net is like an analgesic). He does not believe he can change his/her psychological condition; he/she just needs to use the net to get exited and dull his/her 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 Internet to achieve an objective that goes beyond the excitement. Cyberspace represents for them a big

tank of stimulus, but above all the ideal space to make their high expectations concrete. Action fields vary from online social relationships that can go beyond the virtual dimension to the online gambling, considered as a great occasion to make money. In those cases of intense intoxication the Net addict for action produces and pursues so ambitious and far from reality objectives to poach into mania. As known, the beginning of the addiction induced both by substances and behaviors implies several causes. Causes do not come from the same situation, but they could come from several factors whose interaction, as in a dangerous cocktail, can generate disorder:

$$\text{Addiction} = \text{Inducing factors} + \text{triggering factors} + \text{perpetuating factors}$$

Both the Net addict for escape and the Net addict for action use the Net for excitement. But while the first one uses it to escape from problems, the second one uses the Net to achieve success or make a change in his/her life. According to the aetiological sequence of the addiction, it is necessary to specify that the real target of online use is basically the will of taking action online and not the excitement in itself. Concerning the predisposition to IRP, we have to consider a different psychological situation depending on the type of the Internet Addiction we talk about. In the case of Internet Addiction for escape, personalities with depressive aspects and/or tending to social difficulties would be more exposed to the syndrome. Instead, in the case of Internet Addiction for action, personalities more vulnerable would be those characterized by personal disorder (narcissism, obsession, etc.) and/or depressive (compensated) or maniacal aspects. However, it is important to specify that subjects can use every online service both for escaping and for seeking success. Graphically, we can represent IRP as a continuum that starts from the "Addiction for escape" and arrives to the "Addiction for action".



In order to better understand the difference between the two different types of Internet Addiction, we could think about another condition of dependency. Pathological Gambling is a type of addiction analyzed in depth and recognized by the IRP scientific community recognizes it. The scholars are aware of the fact that this form of addiction can reveal itself with different modalities depending on the type of player. For some of these players the game can just represent a way of escaping and excitement (Internet addicts for escape) for some others it is just a big opportunity for winning or getting a personal change (Internet Addicts for action). Both of them get excitement from the game, but with two different reasons. Following two representative cases of addiction we analysed at our surgery department during 2005-06:

Maria, 27 years old, Net addict for action. The patient came to our surgery for a psychotherapeutic session in consequence of a strong Internet "intoxication". Before then, she never showed either mental trouble or relational difficulties. Maria started to use the Net in an anomalous way just before summer, by spending more than 70 hours weekly chatting, sometimes she used to spend all nights long chatting online. The real reason of her behaviour was to find a boy who spends her summer with. Maria met potential admirers in her town so that she could really meet them. In

the end of September she met about 30 boys, but she did not become fond of anyone: "I was never happy... I was not able to find a man that I imposed to myself to find".

Giovanni, 23 years old, Net Addict for action. The patient in question presented an accentuated form of depression concomitant to the compulsive use of online pornographic material. His parents did not know that since about a year, at any time of the day and night he logged onto erotic chats and masturbated with virtual partners. The anamnesis shows serious relational problems. Giovanni lives a solitary life, he has no friends and he has never had either sentimental or sexual relationships. Only when he is logged on line he is able to bear the burden of his problem, despite his deep sense of shame that afflicts him after each self-erotic relation. In the period of time of extreme abuse the patient can remain logged on until 80 hours weekly.

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 research carried out by Young (1997), addicted users spend longer time in synchronic communication environments like chats (35%) and MUDs (28%). Therefore, we assume that the same synchronic communication implies such a gratification that it triggers an even more active behaviour from the user.. Moreover, we can distinguish other additive characteristics connected to these peculiar resources.

For example, MUDs present outstanding elements of depersonalisation, since they use a technology that minimizes the playful contest by making easier the identification of the player with the character (Cantelmi, Giardina Grifo, 2002).

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

A not very common phenomenon but related to this type of communication is the so-called *Zigarnick effect*. It is a state of anxiety and accentuation of the thought linked to the interrupted experience in chat. The user disconnects from the Net and thinks that somewhere there is a dialog that is still going on even though he is not taking part in (Martignago, 2001).

Many of the aspects underlined so far are developed by the so-called metaworlds, as the so famous *Second Life*. What characterizes this virtual world is the chance of having an alter ego available, that is the digital representation of themselves (avatar) that interacts in a world where there are characters corresponding to real people. Each encounter or conversation happening in *Second Life* takes, therefore, a connotation of a real interpersonal relationship. Differently from chats and Muds, there is a strong element of the human communication; that is the non-verbal language. It makes interactions more appropriate, if compared to the real ones, even though the avatars mediate the communicative exchange. In the metaworlds we can find the same mechanisms of persuasion used in the advertisement; whereas the most frequent expressions are: "make your dreams come true" or "you will get what you desire".

“Just like in the advertisement, the desire to be more than what we are is encouraged: more beautiful, 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” (Randazzo, 2008).

The major risk to get closer to *Second Life* or other metaworlds takes place when people choose the virtual world as option to the real one. From one side, the consistency of the metaworld with the real life offers the certainty of a family pattern and a pattern closer to our stereotype. From the other side, the wider chances offered by the parallel reality makes it more attractive than the real world.

Digital Notes (4/6)

Identity Dislocations: planetologic metaphor

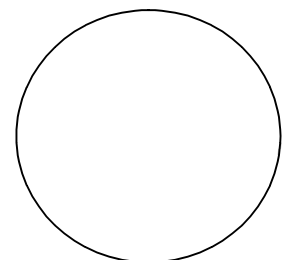
The title makes reference to the identity and particularly to the potentialities that the Net offers by determining dissociative psychological alterations. Previously, we touched the so-called “Display Dissociative Trance”, which is a diagnostic label applicable to those cases whereas the usual personality splits in alternative psychological forms, that can be defined digital. But, what do we mean by dissociation? By this scientific term, we make reference to the separation process of one or more parties (conscience, memory, perception of the environment, usually integrated) of the mental process from the conscience ; the consequence will be one of the single part behaving like a mental identity independent from the whole personality.

In order for our reader to better understand this phenomenon, it is helpful to use the astronomic example of the Planetology (a branch of Astronomy that studies the origins of the planet), by comparing the Earth to the real Onself and the Moon to the rising digital Onself. Meteoric events symbolize further metaphorical elements, indeed they stand for factors disturbing the psychological balance and finally the atmosphere represents a complex of psychological and environmental sources that the individual use to deal with the identity scission. The substance coming out from the Earth after a meteor impact can represent it.

We believe that a “sane” personality cannot develop this kind of psycopatologic phenomenon, despite a total and prolonged use of the Net.

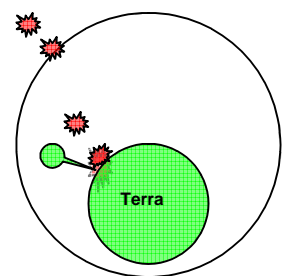
Nevertheless, cases of addiction could take place anyways, especially when the Net offers opportunities used to compensate a condition of personal inadequacy or to develop parts of personality not appropriatedly expressed in the real life.

Therefore, the Earth seems like intact and protected by its atmosphere.



The situation changes considerably when particular traumatic events invade the Onself (they are usually referable to family environment) or when hereditary factors jeopardised it from its origins by developing as consequence a predisposition to dissociation. Nevertheless, this vulnerability remains incubated for a long period of time untill a further stress factor will be added.

A meteoric swarm will hit the Earth. A cloud of terreste material develops, but it remains trapped in the atmosphere.



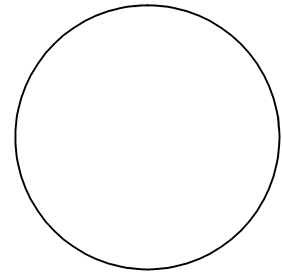
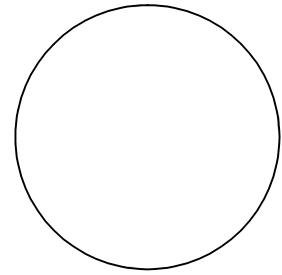
During this phase the individual meets the Net. But it must be clear that we are talking about a bad use of the Information Technology that determines the above-mentioned stress factor. In the psychopathological escalation additive behaviours will appear first, then the regression and in the end of the process the identity split. The Net reveals new feasible opportunities that bring virtual, dramatic and real consequences for a Onself offended by the real life and that is in a continuous research of new balances.

The atmosphere breaks and lets the terrester cloud come out.

A new alternative digital identity is formed, it is independent from the real one, it is characterized by a new awareness of the Oneself and a new surrounding environment.

The way of thinking and the behaviour considerably change from the primary personality, by developing new targets that appear straightly connected to the contents and the experiences lived in the Net. Serious symptoms will manifest, such as allucinations, delirium, mnesic lapses and psychomotor agitations.

After a meteoritic collision, materials expelled by the Earth thicken and consolidate by creating a new celestial body that is the Moon.



Cyber-intoxications

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 (above all coming from the United States), we remember:

- Cybersex Addiction. The word cybersex concerns all those activities with sexual feature performed on the Net by using e-mail, IRC, CUSeeMe channels, etc.. The person who makes online sex is a person afraid of a real physical relation and who has big difficulties in affective relationships. But it is possible to prove abuse and addiction situations even in those subjects that have good affective and relational resources. They develop an additional modality of the virtual sex use not because they are afraid of the real sex, but because they just want to take an attitude that at the beginning is playful. Some of them can keep this aspect under control, but some others progressively get involved, and this can bring to the compulsivity and the need to log on everyday for hours and hours.
- Compulsive online Gambling. It is a disorder already recognized since a long time and it reveals envisaged in the mental disorders diagnostic manual. The chance to have access to the virtual casinos or sites for gamblers from home enables the development of the compulsion that has a bad effect on the relational and economic life and can involve very young people.
- MUDs Addiction. As already said MUDs (Multi-users dungeon o Multi-user dimension) are interactive role-playing games, where the users can interact simultaneously. It consists in creating a

fanciful character with which the subject identifies and plays. The player can decide physical and mental features of his/her alter ego, places he will visit and etc... Compared to traditional role-playing games, muds include more depersonalisation aspects because they make use of a technology that makes less evident the playful context and enables a major identification of the player with the virtual character.

- Cyber relationship Addiction. Some subjects suffering from IRP feel a strong stimulus to establish amicable/affective relationships throughout e-mails chat lines or newsgroup to the detriment of their own real family and social relationships. Since there are no visual matches, people on the chat could lie about their identity (concerning physical features, age, sex, job and status) just to feel the euphoria of an indefinite freedom, introducing themselves to other people and having the chance to fulfil in a virtual way their Ideal Ego. Just to keep a satisfactory virtual image of himself/herself, acquaintance, created among people regularly getting in touch, with remains confined to the limits of the Net. From one side, the use of chats reproduces a relational and communicative context with the Other, and from the other side 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 environment, is characterized by the exhausting research for any type of information even trivial; the user does not distinguish useful information from useless one. It is possible to search information throughout activity like *web surfing* (passing from one site to another) and/or surveys conducted on material placed on database.

Digital Notes (5/6)

The role of "cognitive dissonance" in the addiction phenomenon.

We believe that cognitive dissonance (Festinger's cognitive dissonance is a theory based on the assumption that "the individual aims at being consistent with himself/herself") marks out addictive behaviours because of the fragmentation.

Generally, "rewards" provided by Internet decrease when tolerance begins. The individual has to face a conflicting observation: he/she connects to the net to feel better, but at the same time signs of uneasiness that before were absent now come out. At this point the situation might have two differing developments.

The first development is represented by a first chance to defend himself/herself and deny the discrepancy. The individual could modify his/her own attitude by making it more compatible to the Internet use. This is the beginning of the addiction. Indeed, it is during this phase that a transformation of the personality occurs, soon after the involvement into the use will take place. In other words, this should be the phase of the beginning and stabilization of the addiction. Addiction starts after a certain period of "learning" of the use modalities; after that the individual feels closer to the Net.

The second development starts when the sane reaction to the initial addiction takes place. The negative consequences of the habit will be observed and recorded. The interior fragmentation will not be minimized and the disease will be used to strengthen the will of reducing time spent on line. We believe that the addiction is supported by a "pathological reduction of the dissonance" that strengthens the addictive behaviour instead of removing it with realistic thoughts.

Means of assessment

Many books have been written in order to evaluate IRP. Some of them are the following: *Internet Addiction Questionnaire*, Suler (1996), *Davis Online Cognition Scale*, Davis and colleagues (2002), *Chen Internet Addiction Scale*, Chen (2003) and *Internet Addiction Test*, Young (1998), this last one is probably the most used and the most common in all over the world (Talli et al., 1998).

In Italy Del Miglio, Gamba and Cantelmi (2001) proposed an instrument called UADI (*Uso Abuso Dipendenza da Internet*), namely Use Abuse Internet Addiction .

This questionnaire was drawn up at “La Sapienza” University in Rome, and up till now it is the only one Italian instrument validated on the population. UADI is made of 75 items. It is possible to answer to one of each by following Likert scale with 5 levels (1=absolutely false; 2=rather false; 3=neither true or false; 4=enough true; 5=absolutely true)

The test shows 5 main dimensions:

- Compensatory escape (EVA): the tendency to escape from the everyday difficulties throughout Internet;
- Dissociation (DIS): the appearance of bizarre sensory experiences;
- Impact on the real life (IMP): the appearance of consequences in the real life, change of habits, moods and social relationships;
- Experimentation (SPE): the tendency to use Internet to experiment parts of the Oneself and/or look for new emotions;
- Addiction (DIP): the appearance of addiction signs, like the progressive increase of time spent logged on, compulsivity and excessive involvement.

Digital Notes (6/6)

A new assessment mean: IRP-AS

A growing number of researches and a fast spreading of computer use programs for psycho-diagnostic purposes in many application spheres (work, school, hospital, military filed) prove that the psychological assessment through PC represents a current topic in the psychological diagnostics.

The mean that we propose comes from the need to evaluate the IRP phenomenon in a objective way, by trying to avoid using the classical methodology of the “self-report” questionnaire. Therefore, a new diagnostic software has been created to perform qualitative and quantitative inferences.

The current version beta of the program can operate in a silent way; this means that the net user will perceive it only when the use of the Net becomes problematic. Only in this particular case the software will start up and will warn the net user about the dangers related to its telematic abuse.

The software will perform two different types of analysis:

- Quantitative analysis. Since the program can detect the movements of the user on the net (in chats and Muds) and the connection time, it can evaluate the level of the involvement achieved by the user (if he/she uses, abuses and how much he/she depends on the Net) and some important indicators as tolerance risk or dissociation risk.
- Qualitative analysis. Moreover, the program allows to display the main contents explored during the web navigation (pornographic, political, ecological contents, etc) and calculate the appearance frequency. In this way it is possible to understand whether a subject uses the chat for friendship or sexual reasons.

In terms of use-abuse-addiction they calculate the daily involvement (Il coinvolgimento giornaliero (Cg)) on the basis of some indicators, such as the frequency of daily use (la frequenza d'uso giornaliera (Fg)), basic motivation (la motivazione di base (M)), if it is playful or working, daily time spent online (il tempo di permanenza online giornaliero (Tg)), difference of time spent online between the last two weeks (la differenza di tempo di permanenza online tra le ultime due settimane (Ts2 / Ts1)) and the level of daily exposure (il livello di esposizione giornaliero (Eg)).

Particularly, the last indicator represents the trend of how much time the subject connects to the net without interruptions: the higher it is the higher is the probability that the subject develops a dissociative symptomatology.

Instead, the ratio Ts2 / Ts1 allows to evaluate the tendency of the subject to increase progressively his/her time spent online (tolerance phenomenon).

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

Concerning the qualitative analysis, contents mostly researched by net users are counted and grouped in general categories (violence, sex, etc...). In this way, it is possible to integrate the results of the quantitative analysis with the content information, so that it is possible to outline those interests and needs that the Net satisfies for the subject.

This operation allows to understand 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.

Examples of analysis

Online Activity	Daily Use Frequency	Ts2 / Ts1 Time spent online (minutes)	Reason exposure 1 = <120' 2 = 121'-240' 3 = 241'-360' 4 = >360'	Involvement. 1= Personal 2= Working
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Chat	3	30	0,75	1	1	67,5
E-mail	2	12	1	1	1	24
Research	5	2	0,66	1	2	3,3
Gambling	0	0	0	1	1	0
Mud	6	420	1,2	3	1	9072
Trading 0	0	0	1	1	0	
Web	4	20	0,66	1	2	26,4
Game	2	244	1	2	1	976

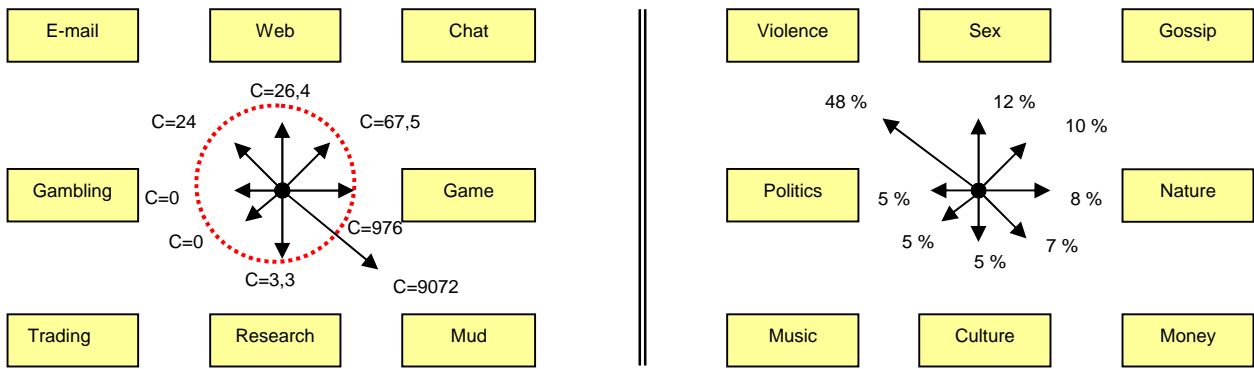
Table of quantitative collection

Contents	Percentage
Violence	48
Sex	12
Gossip	10
Nature	8
Money	7
Culture	5
Music	5
Politics	5
Total	100

Table of qualitative collection

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

Final Diagnostic Table



Graphic summaries of the analysis

What kind of treatment?

As Young already noticed, a certain difficulty has been reported in finding the right treatment to this problem. It has been more difficult in a country like Italy. Many psychiatrics and psychotherapists are not qualified yet to handle IRP and some other don't even recognize its existence (Fata, 2000).

As a rule, the following treatments are prescribed:

- Groups of self-help: composed of people with the same problem, they share the same experiences in order to reacquire control over the Net.
- The Twelve Steps: it supports the personal and spiritual recovering of the individual through a path similar to the one of the Anonymous Alcoholics.
- Therapeutic Counselling: it helps net addicts to become aware of their problem by encouraging their psychological change.
- Individual Psychotherapy: it is particularly suggested in case IRP goes with previous pathology. Patients become aware of the deepest parts of themselves and their change.
- Detoxication Strategies: useful to face up and resolve the problem, especially from the behavioural point of view.

Despite the scarcity of researches above-mentioned, Italy has been one of the first among the European countries to experiment a form of online psychotherapy aimed at cases of Net Addiction. The service, accessible through the site www.psychoinside.it, offered free consulting and therapeutic supports (Cantelmi, Putti, Talli, 2001).

Conclusions

In the last 10/15 years only few phenomena had such a considerable growth as the Net. Less are the technological innovations able, at a so short distance from their beginning, to enter into common use, to influence the 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, with this review we tried to provide certain references on what is and what is not IRP. Therefore, we gathered a lot of information and data disconcerting for its proportions, like the unquestionable pathological potential of the Net. Even though researches completed are not able yet to put in a cause/effect relation the appearance of specific symptoms with the intensive use of the Net, we cannot deny that the Net represents a strong catalyst of preexisting psychopathologies. It embodies an ideal place where it is possible to express the worst and the most pathological aspects of the Oneself.

It has been verified that an important psychopathologic risk indicator is represented by the very long time spent online. The higher is the time spent on the Net the higher is the probability of developing one of the various forms of addiction. On the basis of our experience, the user should not exceed 5-6 hours per day, only for work or study reasons (Cantelmi, Carpino, 2005).

Among the new contributions we presented (Digital Notes), it is deserving to mention the IRP-AS, a software for the evaluation of the syndrome on the basis of the time spent online. This instrument could represent a big support for preventing new addiction cases, just like already happens for the road incidents, indeed road instruments (speed cameras) can detect the speed to prevent incidents.

In order to take advantage from the considerable capacity of the Net with no risk of remaining trapped, it is necessary to know the instrument adequately, be aware of the factors encouraging the telematic overdose and recognize the signs warning us that we are abusing it.

Moreover, we discussed a little bit about *Second Life* phenomenon, a metaworld that counts about 6 millions of inhabitants.

Nowadays, designers have just implemented a new software in the system that allows the use of the voice to communicate with other Avatars who share the same virtual dimension. A new interactivity system will follow for sure among the 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 games of the Virtual Reality and by military pilots during the flight simulations. The instinctive moving of the eyeball would replace the movement performed by the mouse by obtaining the three-dimensional illusion of moving and taking action in the virtual environment, as if we were in the reality of the primary world. In the next future the current studied on the neurosciences could develop the use of the neuronal sensors. They could be able to blend the holographic image of the virtual dimension with the cerebral image in a single vision. This is what already happens when we watch a TV movie and we identify ourselves so much into the scene that we may lose the outlines of the screen (R. Nattero, G. Barbadoro, 2007). In this case the captivation into the Net would be total with the perspectives that we could imagine...

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