Clinical treatment of Internet and digitally-enabled compulsive behavior

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How can the Internet and other digital devices be addictive? Initially, the concept seemed implausible and although I am not claiming that Internet and other digital device addiction is equivalent to the serious problem of drug and alcohol addiction, *there* does appear to be numerous commonalities. For the purposes of simplicity and clarification of concepts I will be referring to the *Internet* throughout the text, but this reference includes other digital devices such as cell phones, PDA's/Blackberry's, and portable/console gaming devices.

Although there are some differences in how these devices operate, there are enough similarities in the psychological aspects of these devices that several generalized conclusions may be made. Differences not withstanding there are numerous commonalities between behavioral (process-type) and substance-based addictions.

Some digitally-mediated behaviors that have been seen as potentially addictive include: on-line pornography, cyber-sex, web cams, emailing, texting, instant messaging, on-line gambling, on-line shopping, auction sites*,* Internet gaming and portable/console gaming (especially MMORPG's), and general Internet surfing. There are probably as many possibilities for compulsive Internet behavior as possible pleasurable behaviors. Although the above list is by no means exhaustive, there are many psychoactive features that *all pleasurable* Internet/digital behaviors have in common.

Use of these devices serve to alter our mood and consciousness and therefore can produce a drug-like *"high"*. In addition, there is preliminary evidence, though mostly anecdotal, that Internet behaviors can produce tolerance and withdrawal symptoms. It is widely accepted that the presence of tolerance and withdrawal indicates an addictive process. A more accurate term would perhaps be *compulsive behavior* which may include the less serious level of *abuse* as well as *addiction.*

Although evidence seems to suggest that Internet addiction comprises approximately 6% of Internet users, there are clearly greater numbers of individuals world-wide who find they are over-using and abusing this technology.   There is ample evidence to suggest that in most, if not all, of these behaviors, there are neuro-chemical changes involving elevations of Dopamine as well as other neurotransmitters; what appears to be happening in essence, is that we become addicted to this state of elevated neurochemicals. The "drug-of-choice" seems to less important than the fact that these technologies produce alterations in mood and consciousness and follow a highly extinction-resistant variable ratio reinforcement schedule. Some other **factors** that have been associated with the relative addictive potential of the Internet are:

1. *Accessibility/Availability*: The Internet never closes and is always available. (Cooper)`

2. *Intensity*: The power of connecting to the world is intoxicating.

3. *Stimulation*: There is endless availability of stimulating and potent content.

4. *Time Distortion*: (Dissociation) Most of us loose track of time and space when we are on line and cannot judge our own use.

5. *Means of Connection:* We all want to connect to ourselves, the world, other people, and to spiritually sources.

6. *Anonymity/Role and Fantasy Play (*Cooper*)*: People believe they can be anyone they want online and that no one knows who they really are!

7. *Disinhibition*: We say and do things less cautiously online and we do things we might not ordinarily do.

8. *Accelerated Intimacy*: We tend to express ourselves more openly and rapidly when we are online.

9. *Ease of Access*: When things are easy we tend to use them more freely.

10. *Affordability (Copper):* The Internet provides cheap and powerful entertainment.

11. *Socially acceptable*: The Internet in all its forms is part of popular culture.

12. *The Story without an End*: Information is available with no boundaries there is always another link, email, or website so we keep looking until we find something more or better?

13. *Instant Gratification* (Classical conditioning)*:* The quicker and more contiguous direct, we get reinforced or rewarded the more addictive it becomes.

14. *Sex:* Human sexuality is forever changed. We are able to access sexual content never before available with relative ease and convenience.

15. *Interactivity*: We control the whole process which is very compelling.

16. *The Hypnotic Trance*: The images, sound, colors and movement all create a dissociated state.

The major factors that seem to foster the Internet's addictive qualities are: ease of access, availability (it is always on and available without delay of gratification), lack of boundaries (no beginning and no end), the experience of time distortion while online which produces a sense of dissociation and an alteration of consciousness, perceived anonymity, a sense of disinhibition (the

ability to enact hidden or uncomfortable aspects of yourself), and relatively low cost.

There are many theories on the etiology of the power of the Internet and other digital technologies; the fact remains however that there are definitive behavioral effects from it's' use and abuse. There are countless examples of how the over-use or abuse of the Internet creates numerous psychological problems and issues.

Psychologists, therapists, and counselors cannot readily intervene at this effected psychological state; rather, we must intervene somewhere earlier in the addictive cycle--at the behavioral and emotional level. All addictive behaviors begin simply as pleasurable behaviors, which also serve to distract and numb us from pain and discomfort. In essence we seem to be searching for connection to ourselves, to other people, to pleasure in our life and to avoid pain and discomfort. The problem is that what begins as a solution to pain or discomfort often produces secondary problems in life functioning; this is where Internet addiction and compulsive Internet use deserves our clinical attention.

Internet addiction and compulsive Internet use appear to reflect a unique combination of several factors, which when combined, produce a synergistic effect. In the Internet addiction process both the content and the Internet medium itself serve to accelerate their mutual impact and potency. Typically,

the content consumed online is highly stimulating and reinforcing irrespective of the mode of access. However, the nature of the Internet medium itself often produces a more fertile context within which such stimulating content can be abused. The power of all of these technologies is derived from the synergistic interaction of stimulating content (e.g. games) and the Internet/digital medium itself.

We are moving from a classical model of addiction to one of addressing how all these digital technologies enable or support addiction and other psychological exits and wounds--many of which pre-date the addictive behavior.

The fact is that digital technologies *are* psychoactive and can alter mood states and are therefore potentially addictive. Addictions of any type can be an exit or coping symptom of other on-going wounds in the family or home situation which further contributes to psychological issues and problems. The Internet and other digital technologies are amplifiers and sensitizers of previous issues and problems. All behaviors, including self-medication via addictive behavior, serve to fill a need, albeit subconscious. They often serve

as a *drug of choice* and as such elevate dopamine levels.

In describing the clinical treatment of Internet addiction and compulsive Internet use a degree of caution should be taken given the current state of the art.

First, and perhaps foremost, is the fact that currently there is some question as to what Internet addiction *is* and *is not* ,and if we are dealing one unitary phenomena or a constellation of several problems and symptoms that are globally described as *Internet addiction*

We know that most people like to experience pleasurable things, and to avoid unpleasant feelings. We also know they will repeat experiences they experience as pleasurable.

Normal life seems dull compared to the excitement of the *addiction "hit"* and many addictions get their start from a general sense of relief from boredom and emptiness. Boredom can present you with a very uncomfortable feeling of being ill at ease, which many people try to escape from. I believe that many self-destructive behaviors get their start this way.

All addictions are initially an attempt to solve a problem (boredom/emptiness/fear/anxiety), but in the process of this self-medication, the addiction process develops, thus beginning a new problem.

It is my contention that the basic psycho-physiological and neurochemical process of addiction are similar regardless of the initial source of the *"intoxicating high."* So, what do all the above behaviors have in common? What makes them all potentially addictive, or abused? There are a unique set of factors and features that produce several key results: First, there has to be some *alteration of mood and consciousness* as previously stated. This is not unique to the Internet, because as noted there are many such stimulating behaviors readily available to us everyday. And secondly, there must be some *negative impact* on a major life sphere such as parenting, legal status, health, financial stability, personal relationships, or work/school performance. The most common effects seem to be significant impacts on marriage and work/school performance.

There is little doubt that we find the Internet as well as PDA's, computers, cell phones, and home/portable game consoles pleasurable. These technologies represent a multi-billion dollar industry and are growing with no apparent end in sight.

Pleasurable media technologies are by no means new: television, radio, telephone, and movies can all be placed in this pleasurable media category. Digital communications entertainment technologies seem to have taken the concept of pleasure to a *new level* and with an efficiency, availability, and ease of access never seen before in modern society. Computers and Internet, (in their

various access modalities, including cell phones and PDA's) are easily abused, habit forming, mood and consciousness altering, and appear to be addictive for some individuals.

Perhaps the most all encompassing aspect of the Internet that accounts for its addictive nature is that the whole Internet itself functions of an *Intermittent Variable Ratio Reinforcement Schedule*.
What this indicates is that human behavior operates on some very predicable principles: every time you click on a web site (whatever type), open an email, or search for something on line, you get a "hit" or reward. This is highly reinforcing, and as previously noted, has numerous neurochemical changes associated with it. Most notably are elevations of dopamine. The Internet operates by providing desired information (an important email, a desired image, a purchase or simply information one is searching for) that one is seeking on line, but it does so very intermittently (unpredictably). In other words, we find what we are looking for, but with unpredictability. This, combined with the instant gratification and time distortion while online, make the Internet it highly resistant to extinction. We will keep searching over and over again for something because every once in a while we "hit" what we want. This is a similar principle as we see with gambling.

The critical point here is that the Internet (digital media) is itself addictive and can facilitate and enable compulsive use behavior.

Our research indicates (and this is corroborated by numerous other studies) that at a minimum, approximately 6% of individuals become compulsive in their use of the Internet. We also know that sexual behaviors such as pornography and gaming are highly addictive.

It is the combination of stimulating content, along with the Internet modality, which produce a synergistic effect, each amplifying the other's psychoactive (*high producing*) properties. This is not to say that free choice is completely eliminated, rather it is a further understanding of the addictive and compulsive properties of Internet and computer behavior.

Developing a Treatment Plan

A treatment plan for Internet-enabled problems always begins with a clear assessment of specific nature of the Internet, computer, or digital device problem.

In assessing the problem, firstly, attention must be paid to the nature and type of the content being consumed and secondly to determine if that content

was used addictively prior to the abuse of the Internet. The clinician must determine whether there is a primary or secondary problem. If the context that is being consumed, e.g. sexual material or gaming, was an issue prior to the use of the Internet then a clear history must be taken to determine the nature of the addiction pattern. Internet-enabled problems may cross many other clinical areas. Mood disorders, Impulsive Disorders, and Substance/Alcohol abuse patterns should be assessed and treated if they are found to be a positive factor.

Paraphilias, sexual compulsions (addictions) and relationship problems should be assessed. In *many cases* (as high as 50%) there may be a pre-existing sexual compulsion/addiction patterns if the primary complaint is Internet addiction in young adults. Affective Disorders, such as depression and anxiety issues may be an influencing factor as they often motivate self-medication behaviors which may contribute to Internet addiction.

Often psychosocial triggers serve to initiate an Internet-enabled problem, but once the compulsive pattern takes hold it is self-maintaining and is perpetuated as any addictive pattern. An initial work-up/intake should always be conducted in the context of treating any addictive pattern.

1. You must account for the parent or guardian's motivation level when assessing or treating children/adolescents. Care should be taken to match your interventions as well as their available psychological resources. If the parent or guardian is not sufficiently motivated for the

proposed treatment plan then it will likely fail. Only prescribe a level or

care and treatment that are realistic given the patients and family's

level of motivation, time, and resources.

In summary, when helping adolescents and children with Internet

addiction problems, there are several key issues that must be kept in mind:

1. The clinician must clarify differences between *psycho-educational,*

   preventative, and therapeutic treatment strategies. The method or

   modality that is utilized is dependent upon the level of motivation and

   resources available at the time of presentation.

2. Children/Adolescents should be seen separately in clinical treatment from

   their family or care-giver system.

3. The clinician must utilize the entire support/care-giver system to producer

   a positive treatment outcome.

4. Interventions (whether educational or therapeutic) should involve peer

   group whenever possible.

Most children, adolescents, and young adults have their Internet,

Computer, Cell Phone, and Game Console/Portables paid for and logistically

supported by parents or guardians. This is done despite parental displeasure, disapproval, and concern. Parents and guardians provide this support frequently regardless of negative impacts in school performance, family involvement, and changes in social behavior, etc.

Care should be taken in helping to re-empower the parent or guardian in reclaiming control of the family system and not surrendering to the ease of letting the child/adolescent "rule" the family because it is *easier* to let them do so. This "*adolescent rule" occurs* frequently because of the knowledge the child/adolescent often possesses, along with the ease of letting them have their way. Our lives are more peaceful, because as long as they have access to "their" technology they are silent and not disruptive to the family.

Warning signs of Child/Adololescent Digital Technology Abuse

1. Increasing amount of time spent on games, Internet or other digital technology.
2. Negative changes in school/work behavior.
3. Decreased social/familial involvement.
4. Increased isolation and social withdrawal as all digital technologies tend to isolate.
5. More time spent online, cell phone, or game device.
6. Changes in mood.
7. Increase in erratic or unpredictable behavior.

8. Spending money on technology, games, or monthly game fees.

9. Greater risk-taking behaviors.

10. Increased secrecy around their digital and Internet behavior.

Evolution in the treatment of digitally-mediated problems and Internet abuse

First, we must recognize that there are normal and adaptive social aspects to digital communications such as using text, IM, email, and chat for adolescents. These technologies belong to our youth and they have embraced them fully. They are as simple and easy to use to them as our toasters are to us adults! They use these technologies to connect and to engage with their peers and it is therefore part of the "*youth culture*" This may seem novel to adults, but they are fast becoming a "*norma*l" method of social interaction way for adolescents.

Care should therefore be taken in assessing the pathological aspects of these behaviors outside of the social, developmental, and cultural context of our youth.

What people are looking for in Computers, PDA's, and Cell Phones, and Game Devices?

♦ In a word: Connection (pleasure) and/or Distraction/Numbing (avoidance

of pain).

♦ The connection we are seeking is with ourselves (lost/disowned parts of ourselves), other people, the global community, and something greater than ourselves (spirituality). We seem to use the Internet as a tool to reach beyond ourselves.

♦ What we do online and with all our digital devices has an ecological validity—in other words it makes sense in the total context of our lives and serves a function within our psychological dynamics. Any clinical treatment must take this into account so as to understand how the symptom fits into the total context of the person's life.

Specific Treatment Interventions

1. Determine the level of motivation of the patient and his/her family or support system. Identify who is the "customer" for your interventions and how to best access their cooperation/collaboration in forming a treatment alliance and plan.

2. Structure interventions based on realistic motivation and available resources.

3. Always understand the developmental and psychosocial context of the symptom, e.g. Why now? What stressors are going on in child's life? Social/peer issues?

4. Utilize *family re-education* to educate parents and children on **Healthy Computing** behaviors.

5. Use *family systems therapy techniques* of strengthening boundaries and re-empowering the parents (new parenting skills). Re-empower Parents/Guardians to re-assert rules/limits/boundaries/consequences. Help parents' practice these new skills and rehearse their implementation.

6. *Modifying and controlling* their use/abuse pattern through behavioral techniques of contingency management and reinforcement. Don't assume the parent cannot reassert their power and control in managing their children's' behavior. They simply may need information and permission to *"take the helm"* as leaders in the family. The child or adolescent will NOT give them permission to do this—you must help re-assert the generational hierarchy in the family system. Stabilize the child/adolescent's use/abuse pattern (abstinence or controlled use) though the use of external tools and behavioral contracting. Be sure to listen for symbolic messages in the communications or behaviors of the addicted person within the context of the family system. In other words, they may be expressing feelings and needs subconsciously through their behavior.

7. *Marital/relationship counseling* may be necessary for the parents to help them get clear on how to collaborate in helping their children.

8. *Medications and/or individual counseling/therapy* for the child may be indicated particularly if there are concomitant features of anxiety,

depression, or other behavioral issues. Also to help them identify alternate pleasure streams in their life.

9. Structured Treatment Programs can be used if outpatient interventions prove unsuccessful.

10. Prevention strategies can be integrated anywhere along this continuum. Inducing incentives to real-time living and help the parent provide new opportunities for activities to replace the virtual activity that the children/adolescent had been overusing. Inducing incentives to real-time living, e.g. its fun to live without digital stuff!

All approaches, tools, and techniques are non-linear and the clinician can move back and forth between interventions as necessary. These approaches are meant to be flexible and can be mixed and matched as the situation calls for.

There is no exact order to the treatment approaches offered here; rather they should serve as a rough guide to organizing effective treatment plan.

Closing

"*Is living in a virtual world filled with digital distractions the only way to live*?"

We live in technically changing times. Our world is indeed getting smaller and we ideally should feel more connected to those around us. Ironically however, the very technologies that purport to connect us to others often have an alienating and isolating effect. These digital communication-entertainment

technologies (Internet, email, IM/texting, cell phones, PDAs, MP3/IPODs, and portable and console gaming devices) are fun and helpful in our lives, but they all have addictive and abuse properties--they can alter our mood and consciousness, distract us, and provide an '*exit*' from living in the present. All of these devices have the capacity to numb us, medicate us, and time-shift, thereby moving our attention from where we *are* to *somewhere else.* The problems of virtual addiction come is contributed to from many sources as discussed earlier in the text, but the biggest problem is actually created from what we **avoid** or **don't do** in our lives while using and abusing these devices, They take us away from balanced living in our work, education, relationships, physical fitness, and other important spheres in our lives.

Digital technologies have brought us a new worldwide phenomenon. Clearly, these technologies will not disappear--nor should they. There are many important and useful aspects to the Internet and computers, and they are forever entwined into modern society. Internet use is now essentially viewed as normal and expected. But many of us suffer from some form of *digital distraction* or *virtual addiction*, and the most affected by this problem are our *children and adolescents*! Dominant popular culture in the world now dictates that digital technology is way of life; it functions not simply as a technical tool to improve our

lives, but rather as an integrated and organizing aspect of our daily activities. We have even begun to organize our lives around these digital technologies, as opposed to structuring our technologies around a healthy balance in daily living. It seems that as long as we fail to see the power that these technologies have in our lives, the more likely we will be unconscious as to the negative impact they can produce from their use and abuse. The ability for us to recognize the potential *positive and negative* impact of these technologies is what will allow us to manage their use in a more positive and conscious manner.

My message is simple. We must learn to appreciate the power and position that the Internet and other digital technologies have today, and how to learn to mange these devices with greater conscious awareness. This will go a long way toward establishing a healthier and more balanced approach with all of these wonderful technologies. It wasn't long ago that we had no recognition of the addictive potential and damaging effects of smoking, gambling, alcohol, or narcotic substances. It was only after our knowledge and public awareness improved, that we were able to develop educational, treatment, and prevention methods to help address these public health problems.

The impact of digital distraction and virtual addiction are only part of the problem; a larger and perhaps more pervasive problem is the need for the global education of the power and impact of all digital technologies.

In the long run, we must learn to live life with '***conscious computing***' and to integrate our digital tools into a healthier balanced lifestyle. We must learn to have our machines serve us, instead of the other way around. Knowledge and conscious use of technology can only improve our health and well being and help us lead the way to lead both productive and healthier lives.