
C H A P T E R 4

Uses and Gratifications of Internet Addiction

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HOW DO online activities that begin as fleeting diversions evolve into favorite activities and pleasurable habits but sometimes progress to problematic forms of excessive Internet use? And, given the ready availability of so many different enjoyable online pastimes, how is it that problematic forms of use are not even more prevalent? This chapter examines the development of Internet habits from the perspective of communication research that focuses on the uses and gratifications (UGs) that individuals seek online. It develops a model of Internet usage among normal populations that combines both conscious and nonconscious mental processes to account for the initial stages of the progression from normal Internet use to more problematic forms. The self-regulatory mechanisms that moderate excessive Internet use are discussed along with prevention strategies for controlling the growth of potentially harmful Internet habits.

USES AND GRATIFICATIONS OF INTERNET ADDICTION

In order for therapists to assess clients who suffer from Internet addiction, it is important to consider what makes the Internet so appealing. The following outlines several theories on uses and gratifications of Internet addiction. Among addicts, their use of the Internet goes beyond using technology as a functional information tool. Among addicts, something much deeper and richer is occurring. It is important for therapists assessing a client who suffers from Internet addiction to understand the underlying reasons contributing to the behavior. What is often called media habits, each client uses the Internet

with specific intentions. These intentions can take on multiple forms from general pleasure-seeking behavior, to using it as a form of entertainment, to using it as a means to fulfill social needs. The reasons vary but throughout these models each is explained so that therapists can examine what needs Internet use is fulfilling among clients. This will enable them to develop individualized treatment plans that should sustain recovery.

GOOD INTERNET HABITS AND BAD ONES

How do ordinary Internet activities initially attract their users, develop into diverting favorite activities, and then sometimes become fulfilling pastimes but at other times turn into potentially harmful or even pathological habits that disrupt the lives of their users? Also, given the wide range of appealing online activities tailored to seemingly every conceivable need and available 24/7, how do so many Internet users avoid becoming hooked on a favorite pastime and descending into a downward spiral of mounting use, withdrawal from vital life activities, and rising isolation and despair? In the context of the present volume, the goal is to help clinicians, educators, and parents understand and encourage healthy, normal use as well as uncover the processes that may lead to excessive use that threatens psychological well-being.

The present investigation explores these issues from the perspective of the uses and gratifications (UGs) paradigm of communication research that seeks to explain media use among normal, nonclinical populations. Long considered a dominant paradigm accounting for the use of so-called old media modalities such as television and newspapers, the UGs paradigm has enjoyed something of a renaissance through its application to the Internet (e.g., by Papacharissi & Rubin, 2000; Song, LaRose, Lin, & Eastin, 2004), where its explanatory power has been enriched by the conceptualization of new mechanisms that help to explain the initiation of pleasurable pastimes and the development of media habits (e.g., LaRose, 2009; LaRose & Eastin, 2004; LaRose, Lin, & Eastin, 2003).

The chapter begins by recounting the basic elements of UGs. Next, it reviews applications of the paradigm to Internet use and recent refinements that explain new media use. Then the processes by which normal Internet use may progress to problematic habits are explained. Finally, the chapter considers the implications of UGs for the prevention of problematic forms of Internet use.

THE USES AND GRATIFICATIONS PARADIGM

The uses and gratifications (UGs) paradigm originated in the efforts of the communication researchers of the 1940s to identify the functions of the mass media (Ruggerio, 2000). Elihu Katz, a noted media sociologist and student of Karl Lazarsfeld's, and his colleagues are often credited as the originators of the UGs paradigm as it is known today. The basic premises of UGs are that media users are active in their selection of media content and make

deliberate choices among the media alternatives available to them based on their needs. Simply put, UGs are the reasons people give for using various media. Katz, Gurevitch, and Haas (1973) is a frequently cited seminal study that differentiated media based on the needs they fulfilled for their audiences. For example, television was associated with entertainment needs whereas newspapers were associated with information needs, offering support for the basic premise that media selections fulfill distinct audience needs.

Gratifications are assessed through responses to verbal statements about respondents' reasons for media consumption (e.g. enjoyment, social interaction), typically assessed on a multipoint rating scale. For example, Rubin (1984) used a five-point agree-disagree scale ranging from "strongly disagree" to "strongly agree," whereas Papacharissi and Rubin (2000) asked how much respondents' reasons were like the stated reasons on a scale ranging from "exactly" to "not at all." An early refinement was to distinguish gratifications sought from the media from gratifications obtained and to examine the match between the two in order to obtain superior predictions of media consumption behavior. The difference between gratifications sought and gratifications obtained is in the time frame of the assessment—that is, whether respondents are asked about the gratifications they will seek from future media use or about the gratifications they experienced from past media use. If the same person is asked about both past and future use, the arithmetic difference between the two can be computed, a measure of how well expectations were met. However, gratifications sought produced the best empirical predictions of media consumption compared to gratifications obtained or to the arithmetic difference between the two, so gratifications sought became prevalent in the research that followed. These are posed in the present tense (e.g., "I use the Internet . . . to help others," Papacharissi & Rubin, 2000) to convey the sense that the statements are continuing motivations for media use.

Thus, to assess whether an individual is using the Internet as a form of entertainment, the statements in Table 4.1 under the heading "entertainment gratifications" would be presented to the individual and they would be asked to indicate how much each statement was like their own reason for using the Internet, on a scale of one to five, where 1 is not at all like their own reason and five is exactly like their reason. The total score across the three questions provides an indication of the degree to which entertainment is a motivation for Internet use. The scores may then be compared between gratification dimensions to determine the primary motivation for each individual. As will be explained below, high scores on the "pass time" dimension are of particular interest since that is the one most associated with the development of problematic Internet use. A complex model of interactions among gratifications, psychological (e.g., needs, habits), and sociological constructs (e.g., media systems, social norms) was also proposed at that time (Palmgreen, Wenner, & Rosengren, 1985). However, in practice, UGs researchers focused on delineating the gratifications sought from various media

channels (e.g., television, VCRs, face-to-face communication) and types of content (e.g., soap operas, sports, prime-time entertainment), often starting from lists of gratifications adapted from an early study of television (Rubin, 1983). The gratifications are assessed by media consumers on multipoint rating scales and subjected to exploratory factor analysis, yielding the UGs dimensions associated with the medium or type of content in question. The factors that emerge typically number at least four gratifications: entertainment; information seeking; to pass time (e.g., to relieve boredom); and for social reasons (e.g., to have something to talk about with friends). Media can then be described in terms of the most salient uses and gratifications associated with them and through correlations with measures of consumption, consumer demographics, or other psychosocial variables of interest. However, the ability of UGs to explain media consumption behavior is rather limited, usually accounting for no more than 10% of the variance in media usage (Palmgreen et al., 1985) and the same range of results has been found for Internet use (Papacharissi & Rubin, 2000).

Although media habits were present in early conceptualizations of UGs (e.g., Palmgreen et al., 1985, p. 17), they were not thought to have a direct effect on behavior. Rather, their effect was through beliefs about the media and gratifications sought—that is, by active media selection processes. At the operational level, gratification statements from Rubin (1983) implying the presence of habits (e.g., “Because it’s a habit, just something to do”; “Just because it’s there”) were often included in later UGs studies. Based on a factor analysis of viewing motivations, Rubin (1984) made a conceptual distinction between an instrumental media orientation, marked by goal-directed information seeking through selection of media content, and a ritual orientation, “the more or less habitualized use of a medium to gratify diversionary needs or motives” (Rubin, 1984, p. 69). However, Rubin’s own data did not strongly support this distinction. His habit measure had only a moderate loading (.59) on a factor that also included “pass time” and companionship motivations, identified with ritualistic uses. The habit item used in that study was also significantly correlated with convenience, economic, communication, and behavioral guidance gratifications, motivations associated with the instrumental orientation. Thus, active gratification seeking and habits remained more or less confounded, both conceptually and empirically.

Later researchers often drew upon Rubin’s motivations, including the habit-related items. However, lacking the minimum number of three items required to identify a statistically reliable separate variable, habits were either dropped from the analyses or confounded with other gratifications dimensions, usually with entertainment or “pass time” factors (LaRose, 2010). As a result, the influence of habit was not fully appreciated by UGs researchers for many years or, in the words of one team of researchers who attempted to revive the concept, habit was left “lurking in the literature” (Stone & Stone, 1990) as a fringe issue even as accounts of media addictions began to emerge (McIlwraith, Jacobvitz, Kubey, & Alexander, 1991).

USES AND GRATIFICATIONS OF THE INTERNET

The advent of the Internet posed both opportunities and challenges to UGs. On the one hand, the interactive capabilities of the new medium were clearly an “active audience” experience that might amplify the power of UGs to explain media consumption (Ruggerio, 2000). On the other hand, researchers realized that the gratifications articulated by television viewers (from Rubin, 1983) that were the basis of many old media UGs studies would not necessarily fit the new interactive medium.

New types of gratifications emerged from Internet-related studies. The most ambitious of these started over with qualitative research that asked participants to identify the uses of the Internet (Charney & Greenberg, 2001; Korgaonkar & Wolin, 1999) without reference to UGs found in previous old media studies. Some of the gratification dimensions that resulted paralleled those long recognized for conventional media, including entertainment, information seeking, social interaction, and “pass time” gratifications. Others were perhaps relevant to both new and old media but had been overlooked by the mass media researchers, such as novel sights and sounds (Charney & Greenberg, 2001). Yet others reflected unique aspects of the new online world. For example, Papacharissi and Rubin (2000) proposed adding interpersonal communication gratifications to the standard list used in mass communication research, recognizing the widespread use of applications like e-mail and chat. Other new gratification dimensions have included problem solving, persuading others, relationship maintenance, status seeking, coolness, career, and search, as well as interactivity and economic control (Korgaonkar & Wolin, 1999); personal insight (Flanagin & Metzger, 2001); virtual community (Song et al., 2004); peer identity (Charney & Greenberg, 2001); and cognitive gratifications (Stafford & Stafford, 2001). Table 4.1 reproduces the Internet gratifications from one such study that has been widely cited in the communication literature.

A SOCIAL COGNITIVE MODEL OF UGS

The advent of the Internet also reopened the question of whether other variables besides gratifications sought might explain media attendance. My colleagues and I (Eastin & LaRose, 2000; LaRose & Eastin, 2004; LaRose, Mastro, & Eastin, 2001) proposed additions to the UGs paradigm drawn from Bandura’s (1986) Social Cognitive Theory (SCT). Recognizing that the Internet was a new and, in the beginning at least, a rather challenging medium to master, we added Internet self-efficacy, or belief in one’s ability to successfully perform behaviors in pursuit of valued attainments (Eastin & LaRose, 2000).

We also reconsidered the meaning of gratifications sought, noting that there were important distinctions between them and outcome expectations, or the subjective probability that a particular outcome will be obtained for future

Table 4.1
Internet Uses and Gratifications

Interpersonal Utility Gratifications

I use the Internet . . . To help others, To participate in discussions, To show others encouragement, To belong to a group, Because I enjoy answering questions, To express myself freely, To give my input, To get more points of view, To tell others what to do, Because I wonder what other people said, To meet new people, Because I want someone to do something for me.

Pass Time Gratifications

Because it passes time when bored, When I have nothing better to do, To occupy my time.

Information Seeking Gratifications

Because it is a new way to do research, Because it is easier, To get information for free, To look for information, To see what is out there.

Convenience Gratifications

To communicate with friends and family, Because it is cheaper, Because it is easier to e-mail than tell people, Because people don't have to be there to receive e-mail.

Entertainment Gratifications

Because it is entertaining, Because I just like to use it, Because it is enjoyable.

Note: Response options ranged from exactly (5) to not at all (1) like my own reason for using the Internet.
Source: Papacharissi and Rubin (2000).

behavior. That is, behavior is better determined by what individuals expect its consequences to be for themselves (i.e., expected outcomes) rather than by the outcomes they presently seek but may not actually expect going forward (i.e., gratifications sought). For example, someone may say that they use the Internet because it is entertaining, to use a common UGs formulation, but might be thinking of past occurrences rather than what they expect of future use. Also, commonly used frames of reference used to pose gratification-sought statements such as the one on the previous sentence do not allow for the possibility that different gratifications may be expected in the future. SCT also offered a priori dimensions of expected outcomes and gratifications: novel stimuli, monetary, enjoyable activity, social, status, and self-reactive outcomes (Bandura, 1986, p. 232ff). An analysis of Internet UGs studies (LaRose, Mastro, & Eastin, 2001) suggested that status and monetary outcomes had been overlooked in previous research, perhaps owing to the limited ability of conventional mass media to deliver them. Following this argument, an "entertainment" gratification statement could be rephrased thusly: "Using the Internet how likely is it that you will feel entertained," assessed on a seven-point scale ranging from "very likely" (scored as 7) to "very unlikely" (scored as 1; see LaRose & Eastin, 2004).

In the current context the most important addition to the UGs model was the self-regulatory mechanism of SCT. That mechanism can explain how deficiencies in self-regulation lead to habitual behavior that is not under

the control of active self-instruction. Self-regulation has three subprocesses: self-observation, judgmental process, and self-reaction (Bandura, 1991). Self-observation entails paying attention to the relationship between behavior and its outcomes and the regularity of the rewards for behavior. In the judgmental process self-observations of behavior are compared to personal, social, and collective norms. Self-reactive influence may be applied when behaviors are observed and found to fall short of standards of conduct or fail to maintain compliance with norms. For example, individuals may observe that they are spending too much time on the Internet relative to their own standards for efficient time utilization. Or they may realize that they are failing to conform to norms for participation in family activities due to their online activities. In response, individuals may resort to a variety of self-control methods in an attempt to bring their behavior under control. For example, they may reward themselves for cutting back on the number of hours they spend playing online games, or may punish themselves by indulging feelings of guilt or engaging in self-criticism: "I am becoming such a mouse potato that I can't stand myself!"

Empirically, deficient self-regulation breaks down into two dimensions: deficient self-observation and deficient self-reaction (LaRose, Kim, & Peng, 2010). The former indicates lack of awareness and attention to behavior (e.g., "It is part of my regular routine") while the latter reflects a failure of self-control (e.g., "I feel my Internet use is out of control"). While habits involve deficient self-regulation, not all forms of deficient self-regulation are habits. For example, impulsive behaviors that occur at the first opportunity to perform them also reflect deficient self-regulation but are not habits since no repeated behavior is involved. However, the focus of the research reported here has been on habitual forms of deficient self-regulation.

The addition of self-efficacy and self-regulation mechanisms substantially improved the predictive power of UGs to explain between 30% and 40% of the variance in Internet consumption behavior. In this model (see Figure 4.1), expected outcomes, self-efficacy, deficient self-observation,¹ and deficient self-reaction² are direct predictors of Internet use. Self-efficacy is also a predictor of outcome expectations, deficient self-observation, and deficient self-reaction. That is because an individual's perceived ability to use the Internet is a logical precursor to experiencing its outcomes and to trying out behaviors that later become habits and even later may become uncontrollable ones. However, these relationships are likely reciprocal in nature. The achievement of expected outcomes bolsters self-efficacy as users progressively master more complex online tasks. The repetition of behavior initiates habits but also provides practice that enhances self-efficacy as well. Finally, prior experience with the Internet is a precursor of both Internet self-efficacy and expected outcomes. These latter links reflect the enactive learning mechanism of socio-cognitive theory in which expected outcomes are shaped by direct experience.

¹Habit strength in the original version.

²Deficient self-regulation in the original.

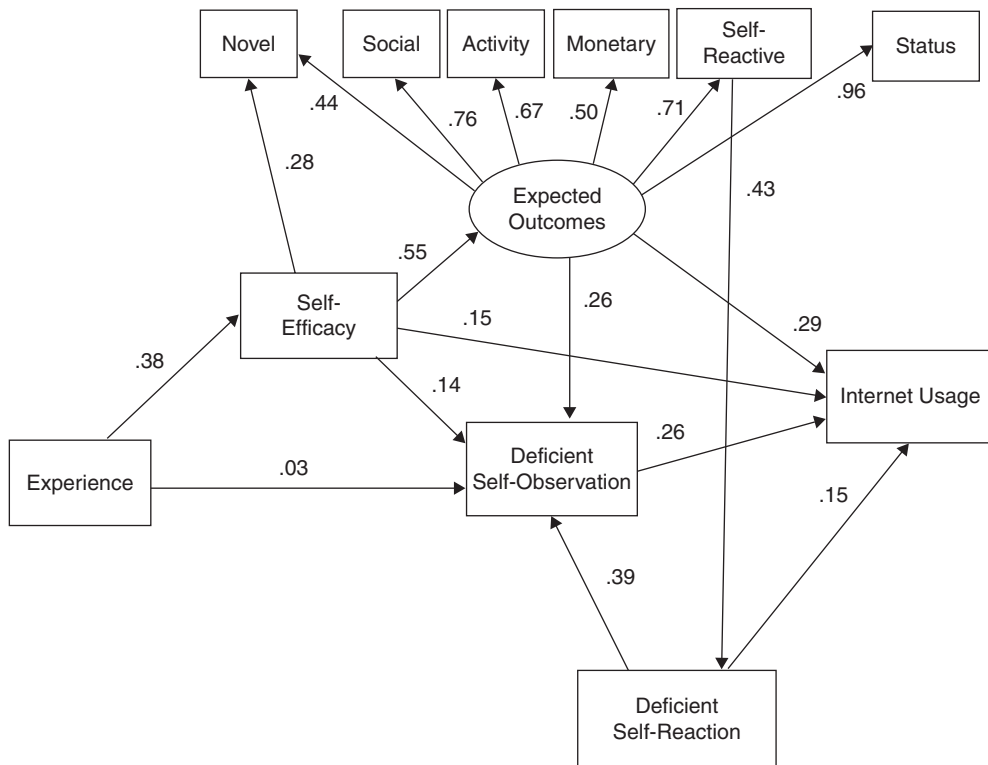


Figure 4.1 Socio-Cognitive Model of Uses and Gratifications

Source: Adapted from LaRose and Eastin (2004).

Observational learning from the experiences of others can also affect expected outcomes but is not illustrated in the diagram.

FROM USES AND GRATIFICATIONS TO NONCONSCIOUS HABITS

The relationships among expected outcomes, deficient self-observation, deficient self-reaction, and behavior hold the key to understanding how normal media use becomes habitual. With repetition, media consumption may become automatic and no longer be controlled by conscious thinking about immediate outcome expectations. That means that media selections are no longer active in the sense proposed by UGs (LaRose, 2010). Automatic behaviors are characterized by a lack of awareness, attention, intentionality, and/or controllability. Deficient self-observation encompasses the first three of these dimensions, while deficient self-reaction is identified with the fourth, lack of controllability. Thus, when examining repeated behavior as opposed to novel or impulsive behavior, deficient self-observation and deficient self-reaction are two dimensions of habit.

Habitual behaviors may be prompted by internal or external cues that were present in the context in which the habit was initially established. While active selections based on gratifications sought guide the initial selection of media, control is transferred to nonconscious processes with repeated selections of the same media. Thus, UGs initially cause habits to form through the repetition of behaviors that are initially under conscious control.

Habit formation is hastened by repeating the behavior under stable circumstances (Verplanken & Wood, 2006). Then, after habits are formed, behaviors are cued under those same circumstances and may be performed automatically. “*May be performed automatically*” is an important qualifying phrase to bear in mind since all habits, even deeply ingrained ones, are subject to cortical control. For example, a normally irresistible urge to respond to an incoming tweet might be suppressed if the user is engaged in an online game.

A wide variety of stimuli have been suggested as components of the stable circumstances thought to be required for the establishment of habits (i.e., in Verplanken & Wood, 2006). These include time, location, the presence of others or selected objects, preceding behaviors, goals, and mood states. But recognizing that habits are cognitive structures, it is possible that any related thought process could provide the necessary stable circumstance. So an online gaming habit might be triggered by the arrival of daily game time, the sight of one’s computer or a familiar play partner, the goal of relaxing after a day’s work, or an encroaching feeling of boredom. However, any game-related image or cognition might serve as a trigger. For example, an online gambling habit might be evoked by seeing a magazine ad for a Las Vegas casino. Also, media habits seem to be less context-dependent than habits in other domains (LaRose, 2010). This may be a function of the ubiquity of the media and their images across locations and times and their increasing platform independence. Moreover, habits are continually undergoing reorganization in the quest for greater cognitive efficiency and may be prompted by a changing array of cues that may not have been present initially. This is especially likely to be the case for Internet habits due to the wide variety of contexts and unlimited moments of time in which they may be accessed. For example, an Internet gaming habit originally tied to the computer in the gambler’s bedroom might subsequently be prompted by the sight of a workstation in the place of employment.

As habits gain in strength, control by active selection processes diminishes, even to the point that conscious intentions no longer have a significant impact on online behavior in the presence of strong habits (Limayem, Hirt, & Cheung, 2007). Evidence of the progression of habitual control over online behavior is found by comparing UGs studies reflecting differing points in the process of habit formation. Lin (1999) explained nearly 50% of the variance in the intended use of the Internet, an unprecedented degree of success in the annals of UGs research, among a sample of adults who had not yet adopted the Internet, for whom habit formation was impossible. LaRose and Eastin (2004) found that the deficient self-observation dimension of habit was an

equally important predictor of general Internet usage as expected outcomes or gratifications. Another study (LaRose, Kim, & Peng, 2010) found that both deficient self-observation and deficient self-reaction were equal in strength to gratifications when a favorite Internet activity for which habitual use patterns had presumably been established (e.g., social networking, downloading, gaming), as opposed to general Internet use, was the criterion variable.

After habits are established, UGs may still determine behavior to some degree, such as when an entertaining favorite activity consistently ceases to amuse, activating conscious selection processes anew. However, it is also possible that when asked about media behaviors that have become habits, individuals may endorse gratifications that they no longer actively seek. Not wishing to appear to be mindless so-called mouse potatoes, they may do so to rationalize media consumption to themselves or to manipulate the impressions they make on the researcher. In that sense, habits may to some degree cause gratifications (Newell, 2003). Another possibility is that when researchers ask about gratifications sought for habitual behaviors, individuals summon memories of the active selection processes that originally guided their behavior. For example, they may dimly recall that they initially went online to access e-mail (fulfilling a social gratification such as "I use the Internet to keep up with friends") even though their current uses revolve around multiplayer games.

Recent findings in brain physiology and social psychology (reviewed in LaRose, 2010) support the contention that behavioral control passes from active consideration of the outcomes associated with media consumption centered in the brain's cortex to automatic association with contextual stimuli that trigger behavior, governed by structures in the cerebrum called the basal ganglia. This mechanism is necessary to maintain daily functioning in a complex environment. Were it not possible to assign certain behaviors to automatic control, individuals would be unable to process the information necessary to make the myriad of decisions that face them each day. In other words, automatic thinking conserves scarce attentional resources. After some number of repetitions (the exact number is unknown), media behavior is controlled by nonconscious, automated processes although still subject to override by the cortex. Individuals no longer need to attend closely to the behaviors they perform nor to the outcomes they expect as a result, entering a state of deficient self-observation in present terms.

LOSING CONTROL

Deficient self-reaction has been proposed to explain how gratifying Internet activities turn into habits and sometimes into potentially harmful ones that disrupt the lives of individuals (LaRose, Lin, & Eastin, 2003). Deficiencies in self-reactive influence indicate a behavior that is out of control. The operational measures of the variable (e.g., "I have tried unsuccessfully to cut down on the amount of time I spend online") indicate that individuals have

tried to moderate their behavior without success. Still, that is not necessarily an indication of pathology since they may have been responding to routine reminders to budget their time more effectively, such as repeated reminders to arrive at dinner on time, rather than to relationship- or job-imperiling threats.

Earlier, habits were defined as a form of automatic behavior lacking in awareness, attention, intentionality, and/or controllability. However, these four dimensions are independent (Saling & Phillips, 2007). So individuals may be painfully aware of an excessive online behavior and even intend to discontinue it but still be said to have a habit by virtue of the behavior's lack of controllability, or deficient self-reaction in present terms. Likewise, individuals may lack awareness, attention, or intentionality (i.e., deficient self-observation) but still feel in control of a media behavior, or at least have not as yet failed to control it.

Deficient self-reaction has proven to be a consistent predictor of Internet usage in studies conducted by my colleagues and me (LaRose & Eastin, 2004; LaRose, Kim, & Peng, 2010; LaRose, Lin, & Eastin, 2003; LaRose, Mastro, & Eastin, 2001). The same relationship is found in research using variables with different names but that convey the same sense of failed self-control. For example, the Compulsive Internet Use Scale ("How often have you tried unsuccessfully to spend less time on the Internet?" "How often do you find it difficult to stop using the Internet when you are online?") was correlated .42 with Internet usage (Meerkerk, van den Eijnden, Vermulst, & Garretsen, 2009). Leung (2004) found that respondents with five or more symptoms of Internet addiction (e.g., "Have you made unsuccessful attempts to cut down how much time you spend online?") averaged 35 hours a week online, compared to 27 hours for those with fewer symptoms. However, the latter variables also include indicators of the consequences of use, such as missing social engagements or getting into trouble at work or school, which might be better regarded as expected (negative) outcomes of Internet use in the present model.

The presentation of correlations between measures of compulsive/problematic/pathological Internet use and the amount of time spent on the Internet as evidence of the validity of the former raises the question of how much Internet use is "excessive" or "problematic." But that is perhaps the wrong question. For example, millions of adults in the United States function normally even while consuming over 30 hours of television per week. Why would 30 hours of leisure Internet use necessarily be problematic? Total media consumption averages 50 hours a week, and more and more of those media are accessed online, so why would 50 hours a week necessarily cause problems? Even 60 hours a week leaves plenty of time for work and sleep. Multitasking media use while eating, housecleaning, and commuting expands the boundaries of "excessive" even further. However, only a few hours a week could be problematic if other life activities in a busy schedule are forsaken or if those few hours are being spent running up ruinous online

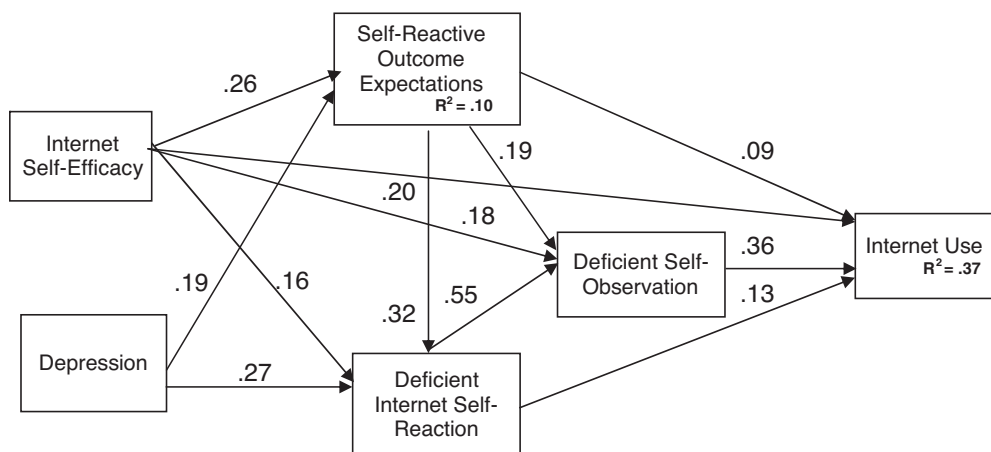


Figure 4.2 Internet Addiction Model

Source: Adapted from LaRose, Lin, and Eastin (2003).

gambling debts, making unaffordable online purchases, or carrying on an extramarital affair online.

It is the function of the usage rather than its amount that can make the Internet use excessive and problematic. The linkage between self-reactive outcome expectations and deficient self-reaction shown in Figure 4.1 may hold the key. That relationship suggests the possibility that when the Internet is being used as a form of primary mood adjustment for dysphoric moods, it overwhelms rational self-control. Behavioral addictions may result (Marlatt, Baer, Donovan, & Kivlahan, 1988); that is, those expecting the Internet to cheer them up or relieve boredom are likely to also be deficient in self-reaction.

A pattern of mounting use resulting in the neglect of relationships and important life activities may also trigger a downward spiral as the consequences of neglect produce dysphoria. Figure 4.2 illustrates the next steps in the spiral (LaRose, Lin, & Eastin, 2003). Depression leads to further seeking of self-reactive outcomes to relieve dysphoric moods, leading to further deficiencies in self-reaction and mounting use, and so on. Moreover, depression also has a direct impact on deficient self-reaction since depressed people tend to slight the success of their own efforts to restore effective self-regulation (Bandura, 1999). That can accelerate the downward spiral with each turn of the cycle.

Thus, to assess whether someone is in imminent danger of forming a problematic Internet habit, clinicians might explore whether the online behavior in question has become the primary means of relieving dysphoric moods and probe for signs of depression associated with mounting use. In conventional UGs terms, that happens when “pass time” gratifications are especially salient. Rather than administering an UGs inventory like that shown in Table 4.1, that might be determined by asking about what was done to relieve recent episodes of boredom, stress, or depression. If online activities are frequently

mentioned, that would be an indication of a potential problem. Indications that the behavior has become automatic in nature also provide early warning signals. The Self-Report Habit Index (SRHI) (Verplanken & Orbell, 2003) has been shown to be a reliable and valid measure of psychological habit strength, assessed through the level of agreement with statements such as the behavior is performed without thinking or would cause distressful feelings if it was not performed. If the symptoms of Internet addiction or indicators of Compulsive Internet Use (Caplan, 2005) are evaluated on multipoint, agree-disagree scales, then low to moderate levels of endorsement (i.e. at or near the mid point of the scales) could be an indication of progression from a normal pattern of media use to a potentially harmful and pathological one.

WHY ISN'T EVERYONE AN INTERNET ADDICT?

At this point it is appropriate to wonder why Internet addictions are not more common and indeed why everyone is not engaged in pathological online habits. After all, the Internet is a veritable cornucopia of appealing leisure activities tailored to every imaginable taste and available almost everywhere on a 24/7 basis. Short of bottoming out and resorting to professional help, how can the cycle be broken?

One possibility is that some online activities may be inherently more prone to abuse than others, and only those who become involved with the most inherently addictive ones develop problems. For example, the social skill account of problematic Internet use (Caplan, 2005, 2006) recognizes that many accounts of abuse are associated with social uses of the Internet. It argues that problematic uses are a function of deficiencies in social skills, leading to a preference for online social interaction, then to compulsive use (what has been called deficient self-reaction here), and finally to negative consequences such as the loss of a grade in school or trouble at work. Following that argument, social networking and instant messaging applications should be the most prone to problems. However, a comparative analysis of favorite Internet activities that incorporated both the social skills account and the previously cited model of habitual Internet use found that the downloading of music and video files was potentially the most problematic activity. But also, the differences among favorite activities were generally small, although social networking and instant messaging were more associated with deficient self-observation (but not with self-reactive outcome expectations or deficient self-reaction) than downloading, gaming, or online shopping (LaRose, Kim, & Peng, 2010). Following the logic of the model presented earlier, any pleasurable online activity could develop into a problematic habit if it is consistently used to relieve dysphoria.

Perhaps a better answer to the question of why pathological Internet use is not more common is that most individuals are able to maintain effective self-control or restore it when it is disrupted. Many respond to the warning signs emitted by their spouses, bosses, or bank statements by summoning the resolve to moderate the offending behavior. But also, Internet habits are

to some degree self-limiting. The pleasurable activities that initially dispel dysphoric moods wear out quickly (LaRose, 2008), triggering a search for new activities and the moderation or discontinuance of old habits. In addition, the negative consequences that attend deepening involvement with habitual activities also may restore effective self-observation (LaRose, Kim, & Peng, 2010) and inspire renewed efforts to bring online behaviors that are operating "on automatic" once again under the control of conscious thought processes.

IMPLICATIONS FOR THE PREVENTION OF INTERNET ABUSE

The present analysis is predicated on studies of Internet use among normal populations, so it is beyond our scope to further consider the etiology of pathological forms of Internet use or to speculate about effective treatments for them. However, it is known that habits, even nonpathological ones, are difficult to break once formed (Verplanken & Wood, 2006), so it behooves us to consider how they might be prevented from forming in the first place and disrupted after their formation but before harmful cycles of self-medication by means of Internet occur.

It was argued previously that deficient self-regulation is the key to understanding the development of uncontrolled Internet habits. Effective self-regulation may also be the key to moderating uncontrolled online behavior. Interventions aimed at bolstering self-regulation of television viewing, another medium said to have addictive qualities, have reduced television consumption and the negative effects of excessive viewing, including obesity and violent tendencies, among children (Jason & Fries, 2004; Robinson & Borzekowski, 2006).

Since habits are formed by repetition under stable circumstances, one obvious strategy for disrupting habits is to alter the contexts in which the triggering cues are likely to occur. For example, varying the time, location, preceding activities, and the company one keeps when accessing favorite online activities should weaken habits. However, extreme disruptions in the context of a behavior, comparable to turning off TV for a week in Robinson and Borzekowski (2006), may be necessary, and extreme acts of willpower may be required to execute such changes. It might be possible to take advantage of naturally occurring changes in the context of Internet behavior such as the beginning of a new school year or work schedule or the purchase of a new computer to bring about the necessary contextual change. The context of Internet use might also be altered automatically by the use of web site filters that block access to problem-causing content. Societal-level policies that facilitate Internet habits might also be changed, such as imposing usage-sensitive charges on Internet use or so-called sin taxes on the consumption of certain kinds of content.

A variety of persuasion techniques similar to those developed in health interventions might also have an impact on habit formation. Since lack of attention to a behavior is one of the earmarks of habits, keeping a diary of one's

online activities or inspecting activity logs on web sites that provide them to users would draw attention to behavior and undermine habits. Reflection on the mood states that preceded indulgence in a favorite online activity, mounting use, or sessions that last longer than intended (or remembered) would provide an early warning of habits that are in danger of spinning out of control. Another possibility is to use self-help or public education approaches to build upon the natural defenses uncovered by LaRose et al. (2010), in which awareness of negative consequences linked to Internet use appeared to reawaken attentiveness to Internet behavior. Alternatively, self-efficacy beliefs related to diminishing Internet use could be bolstered through persuasion, access to testimonials from successful quitters, or gradual reductions in use. Or societal or group norms (e.g., within a family or specific school) for Internet use might be emphasized. These strategies would likely only work when habits are still forming, however. When habits are strong, individuals filter out information that might persuade them to change their behavior (Verplanken & Wood, 2006). However, persuasion tactics such as these might amplify the effectiveness of context changes.

Finally, self-regulation has been likened to muscle-building. Overexertion temporarily depletes self-regulatory resources, whereas sustained, incremental exercise of the resource seems to strengthen it. And, just as strengthening the muscles in our arms by lifting weights in the gym gives us more strength to lift objects in our homes, the strengthening of self-regulation in one behavioral domain generalizes to others (Baumeister, Schmeichel, & Vohs, 2007). That suggests that restoring self-regulation to one form of media consumption (e.g., television) or even in completely different behavior domains (e.g., eating or exercise habits) might enhance the ability to regulate Internet behavior as well.

SUMMARY AND CONCLUSION

Internet users initially actively select online activities that gratify needs such as entertainment, information, social interaction, and diversion. With repetition, favorite online activities gradually become automatic, habitual behaviors that may be activated with limited awareness, attention, intentionality, or controllability in response to contextual cues. Habitual behaviors may be explained in terms of deficiencies in self-observation and self-reactive influence that supplant the conscious pursuit of expected gratifications of online activities as determinants of Internet use. Habits that become a primary means of relieving dysphoric moods have the greatest potential for spinning out of control by undermining the ability of individuals to regulate their own behavior through self-reactive influence. Self-help programs and public education campaigns may be effective in controlling habits in the early stages of their formation. However, entrenched habits are resistant to change and may require substantial alterations in the context of Internet use before change can occur. The relationship of uses and gratifications (UGs) of Internet use to self-regulation

of online behavior is thus crucial in the development of Internet habits that disrupt lives and also in the prevention of problematic forms of use.

Therapists can use these models to assess why each client becomes addicted to the Internet. Understanding the personal motivations among clients will help build effective recovery strategies that are individualized to each client. Finally, recovering addicts often struggle with how to overcome difficult situations or emotional problems while abstaining from alcohol, drugs, sex, or food. They miss the escape hatch their addictions provided, and while learning to live without them, may turn to the Internet as a new and socially acceptable way to cope. What they do not often realize is that by doing so they have perpetuated the addictive cycle. Addicts often look to the Internet as a way to escape reality without really dealing with the underlying problems that cause the addictive behavior. They turn to the Internet instead of dealing with relationship problems, money problems, work problems, or school problems. The same issues that drove them to drink or overeat or gamble are still not being resolved.

Using the Internet becomes a quick fix and an instant cure that washes away troubling feelings, feelings that they have not learned to deal with. Based on these models, we see that Internet addicts can lose themselves in anything that piques their interest, allowing the difficulties they face to fade into the background as their attention becomes focused on the Internet. However, while they can obtain significant gratification from Internet use, they are simply substituting one addiction for another and engaging in avoidant behavior. It keeps addicts from dealing with issues contributing to the addiction, leading to a vicious cycle. By applying these models, both the client and therapist can raise awareness of the reasons why the Internet is so alluring and determine a proper course of recovery.

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