iatry books, visit our website www.jaypeebrothers.com, for detailed information on psychiatry books, visit our website www.jaypeebrothers.com, for detailed information on psychiatry books



Indian Psychiatric Society Publication



CYBERPSYCHIATRY

Foreword
Salman Akhtar

Editor
Sudhir Bhave

Co-Editor
Sushil Gawande



Contents

1. Nature, Structure, Impact, and Science of Cyberspace 1
Mary Aiken, Sushil Gawande
What is Cyberspace: Definition of Cyberspace with Reference to the Current Science *1* Relationship Between Cyberspace and the Real World *2* Human Behavior in Cyberspace *3* Cyberspace is a Real Place *5* Societal Change in Cyber Contexts *5* Cybertherapy (Artificial Intelligence and E-therapy) *8* The Environment of Cyberspace: Precautionary Principle *10* The Future: Cyberspace and Cyberpsychiatry *11*

2. Human Development in the Age of Cyberspace 15
Savita Malhotra, Ruchita Shah
Growing up in the Cyberage *15* Cyberspace as an Environment (A Potential Influencer of Development) *17* Impact of Cyberage on Development *18* Growing up in Cyberage: Both a Boon and Bane! *24*

3. Impact of Cyberspace on Social Structure and Dynamics 29
Ragul Ganesh, Siddharth Sarkar
Social Media *30* Social Networking Sites *30* Virtual Life *31* Social Structure and Social Change *32* Internet: Double-edged Sword *33* Impact on Interaction *34* Family Dynamics *35* Cyberbullying *35* Social Media Relationships *35*

4. Cyberspace: The Good, the Bad, and the Ugly 39
Mohan Sunil Kumar, Sharmitha Krishnamurthy, Nitya Dhruve
The Reach and Power of Cyberspace *40* Cyberspace: The Good, the Bad, and the Ugly *41* Impact of Cyberspace on Wellbeing *48* The Baits and Nudges of Cyberspace *48* Why do People Misbehave Online? *49*

5. Addictions to Cyberspace-I: Online Porn, Shopping, Gaming and Gambling 52
Rachna Bhargava, Preethy Kathiresan, Yatanpal Singh Balhara
Prevalence *53* Impact *54* Management *55* Specific Online Addictions *55*

6. Addictions to Cyberspace—Part Two 68
Shinjini Choudhury, Vijay Krishnan, Pravin Dullur
Social Media Addiction *69* Stock Trading Addiction *72* Offline Addictions *74*

7. Other Cyber-linked Pathologies 80
Sujit Kumar Kar, Abhinav Tewari, Prashant Choudhary
Cyberchondria *81* Munchausen by Internet *82* Cyberstalking *85* Revenge Porn *86* Webcam Sex Tourism (WST)/Webcam Child Sex Tourism (WCST) *88* Cyberbullying *91* Digital Self-harm *93* Attention Deficit Hyperkinetic Disorder due to Excessive Screen Use *93* Other Emerging Cyber-Pathologies *96*

8. Epidemiological Perspectives on Cyber-linked Behavior 101
Vikas Menon, Karthick Subramanian, Jayant Mahadevan
Prevalence and Risk Factors for Cyber-linked Behaviors *102* Epidemiological Data from India on Cyber-linked Behaviors *109* Psychiatric Comorbidity in Cyber-linked Behaviors *109* Health Consequences of Indulgence in Cyber-linked Behaviors *112* Scope for Future Research 115

9. Assessment for Pathological Internet Use ("Internet Addiction")..... 121
Prabhat Chand, Shabina Sheth
Assessment *122*

10. Management Principles of Cyber-psychiatric Disorders in Clinical Setting 131
Vivek Kirpekar, Abhijeet Faye
Cyber-psychiatric Disorders *132* Current Literature on Management *133*

11. Prevention of Internet-related Disorders 144
Sudhir Bhave, Neha Bhave Salankar
Identifying High-risk Groups *144* Prevention Programs *146* Program Characteristics *147* Where to Target Interventions *147* Prevention of Nonaddiction Internet use Disorders *149*

12. Forensic Aspects of Cyberpsychiatry 153
Avinash De Sousa
Status of the Forensic Aspects of Cyberpsychiatry *153* Forensic Aspects of Online Psychotherapy *154* Forensic Aspects of Cyberbullying and Cyberstalking *155* Forensic Aspects of Online Psychiatric Consultation and Prescription *155* Forensic Aspects of Pornography Addiction *156* Forensic Aspects of Cybersuicide *157* Forensic Aspects of Cybercrimes *158* Forensic Aspects of Cyberstalking *158* Forensic Aspects of Smartphone Addiction *159* Forensic Aspects of Online Sexual Predators and Pedophilia *160* Forensic Aspects of Online Designer Drugs *160* Conclusions and the Future of Forensic Cyberpsychiatry *160*

13. Research Methodology in the Digital Era 163
Koushik Sinha Deb, Nishtha Chawla
Accessing Digital Data for Research *164* Digital Data Organization for Research *167* Digital Data Summarization *167* Web-based Digital Primary Data Collection *169* Digital Research Tools for Mental Disorders *169* Digital Data Analysis *171*

14. Utilizing Cyberspace for Telemental Health Services: An Overview 176
Debanjan Banerjee, Vyjayanthi N Venkataramu, TS Sathyanarayana Rao
An Introduction to Cyberspace and Cybermedicine *176* Telemental Health: Scope and Provisions *178* The Promises of Telemedicine *178* Telepsychiatry: an Overview *179* Lessons from the Covid-19 Pandemic: Telemedicine Model from China *185* Telepsychiatry Guidelines: A Collaborative Initiative of NIMHANS, IPS, and Telemedicine Society of India *186* Evidence and Challenges for Telepsychiatry *187* Novel Approaches of Telepsychiatry: Beyond Diagnosis and Pharmacotherapy *191*

15. Future of Cyberpsychiatry: The Paths Ahead 199
Vyjayanthi N Venkataramu, Debanjan Banerjee, TS Sathyanarayana Rao
Cyberspace and Psychiatry: Our Understanding so Far *199* Potential Mental Health Issues Related to the Overuse of Cyberspace *200* Family/Social Relations and Internet Use *203* Cyberspace and Identity Formation *204* Enslavement by Technology *205* A Perspective on the Post-pandemic Digitalization *206* The Future of Online Therapies *207* Artificial Intelligence in Psychiatry: A Novel Arm *208*

Appendix 213

Index 219

CHAPTER 4

Cyberspace: The Good, the Bad, and the Ugly

Mohan Sunil Kumar, Sharmitha Krishnamurthy, Nitya Dhruve

SUMMARY

Like oxygen, which cannot be seen or felt, cyberspace is also an essential and pervasive element in most (if not all) our lives. In this chapter, we introduce the reader to the realm of cyberspace, its integral presence in daily functioning and the broader role it plays in shaping the individual and the collective psyche.

First, we will describe the reach, power and misuse of cyberspace. Then, highlight the stark distinction between the two groups of cyberspace consumers, the digital natives and digital immigrants. Secondly, given the vastness of cyberspace, for clarity, we have delineated it into three aspects, namely, the good, the bad and the ugly.

The good side of cyberspace puts forth the positive impact cyberspace has had in different domains of human civilization and development. The bad side of the cyberspace highlights the insidious ways in which technology can get the better of us through clever and subtle manipulation. The ugly side of cyberspace alerts one to the dangers of the "dark side" of cyberspace that poses a threat to safety and wellbeing, which can have significant public health implications.

Cyberspace is a bundle of contradictions. It connects and divides, saves time and wastes it, brings us closer but keeps us apart, makes life easier and more complicated at the same time! Given the reach of cyberspace, it has the potential to be used as a tool to better our lives. And just as quickly be used as a weapon to destroy.

With a summary on the impact of cyberspace on our wellbeing, we reach the fag end of the journey by taking the reader through pointers highlighting the baits and nudges of cyberspace. Drawing to a close with an understanding of why people misbehave online, we conclude how cyberspace is just a tool, not inherently good, bad or ugly. Its design, understanding and use by individuals ultimately decide the outcome.

INTRODUCTION

William Gibson coined the term "cyberspace" in 1982 and introduced it in his novel, "Neuromancer published in 1984 (Gibson W (1984) Neuromancer, Ace Book, New York). Cyberspace has since become a mainstream pseudonym for the internet. It is an artificial sphere created by informatics, a digital world characterized by telecommunication webs, a series of devices and information systems interconnected through them. In reality, it is just a virtual space, the fifth domain that overlaps with four other essential spatial areas, i.e., land, sea, air, and outer-space.

JAYPEE BROTHERS

With cyberspace permeating almost every aspect of our lives, technological aids have become an extension of ourselves—our phantom limb. People using modern equipment to communicate has led to the emergence of a new lexicon of abbreviations, emoticons and stenographic skills. The term "age" is no more limited to just information age, the computer age, digital age. It extends to the emoji age, internet age, connected age, cloud age, google age, facebook age, smartphone age, and ultimately "posthuman age" (Aeon 2016). The more glamourous the name, the more vaporous it seems.

The "arrival" of cyberspace has already meant the lives of the majority of human beings have a host of new challenges, threats and opportunities. It is an unexplored territory which depends on our actions, inactions and reactions to predictable and unpredictable outcomes. This virtual arena caters and contributes to our increasingly shortening attention spans, appeals to the instant gratification, comes with almost no effort, no dire consequences, and is relatively anonymous and empowering. It comes as no surprise that cyberspace wields so much importance in our lives yet makes us vulnerable at the same time.

Human behavior in cyberspace happens through the field of "Captology", which looks at the use of persuasive technologies. This area pioneered by BF. Fogg and the Stanford Persuasive Technology Lab, it explores the overlapping space between persuasion in general (influence, motivation, behavior change, etc.) and computing technology.

THE REACH AND POWER OF CYBERSPACE

The internet, now used more than a billion people worldwide comes to ground in about 200 countries. India has 560 million internet users—the second highest in the world—with projections of reaching 666 million in 2023 (Statistica, 2019). A lot can happen over a "cyberspace" second. A second in cyberspace translates to 2,600,000 emails sent, 200,000 WhatsApp messages exchanged, 60,000 YouTube views, 16,000 Facebook logins, 7,500 tweets and 770 Instagram posts. We are thus making cyberspace a far-reaching and unifying medium, transcending all manner of geographical and sociocultural barriers. Digitalization has seeped into our lives and has changed the way we communicate, transact, search for knowledge and function. Also, how we think and spend time otherwise. In this backdrop, people who use the internet fall into two broad groups:

1. *Digital immigrants:* Those who grew up in a world without cyberspace. They constitute the Generation X (people born between 1965 and 1980) and the older generation.
2. *Digital natives:* Those who were born into the digital age or the cyber world. They include Millennials (came at the turn of the 21st century and later), Generation Y (born between 1981 and 2000), and Generation Z (2000–2015). Cyberspace has created a generation gap between those who are "tech-savvy" and those who are "tech naive". It has also emerged as a way of measuring adaptation processes and skills across the generations (with digital natives having an upper-hand over digital immigrants). **Table 1** is highlighting the differences in the functioning of digital immigrants and digital natives.

JAYPEE BROTHERS

TABLE 1: Functioning profile of digital immigrants versus digital natives.

Area of functioning	*Digital immigrants* 	*Digital natives* 
Spatial functioning	Reading books, magazines, newspapers; watching TV; spending time outdoors	Unlimited scrolling and looking for information online. A sedentary lifestyle with less physical activity
Social functioning	Direct, face-to-face involvement	Indirect, speedy formats like e-commerce, e-conferences and information obtained from the net without any interpersonal interaction
	Building relationships—working on long-term processes like friendship	Networks formed for transactional purposes or occasional groups established on an adhoc basis
Social contacts	Face-to-face, by phone	Networking, email and social networking sites (SNS)
Cyberspace control and energy	None	Addiction, compulsion
Attitude to technology information	Focus on the utility aspects	Using technology for entertainment
	Fear/hesitance towards technological novelties for fear of disturbing regular modes of operation/functioning	Welcome novelty
Functioning mode	Linear, one task at a time	Multi-tasking, parallel processing
Values and gratification	Delayed gratification	Instant gratification
Learning	Learning based on concentration and memory	Learning based on attractiveness and change

CYBERSPACE: THE GOOD, THE BAD, AND THE UGLY

Being engulfed on all sides by the cyber world, there could be three broad categorizations of online behavior to consider:

1. *The good or the optimal/healthy:* Regulated, sustainable use of technology to help or enable self and others; making tasks easier to accomplish and reducing one's carbon footprint.
2. *The bad or the maladaptive:* Dysregulated use of technology that tends to be harmful to the individuals in the long-run, especially at the cost of their physical, mental, social, and economic health.
3. *The ugly or the criminal:* It includes the illegal online acts which aim at causing deliberate physical, mental or fiscal harm to others.

The Good

No space has been left unconquered by cyberspace be it academics, politics, education, entertainment, sports, recreation, business, commercial, or local industry. The advent of cyberspace has been the most major game-changer for humanity since the Industrial Revolution of the 1800s. It has ushered in urbanization and modernization.

JAYPEE BROTHERS

Cyberspace has evolved to be the go-to place for live-edutainment for a considerable chunk of the population. Other vital critical infrastructures entangle the cyberspace. It is the hub of all essential commercial services from groceries to electricity, from errands to transportation. Socialization is not just limited to family and friends but extends to the strange world of strangers.

By allowing access to information and other resources, cyberspace is a crucial player in the democratic process as well. It provides a means for citizens to be more informed, aware, vocal and participative in systems of governance. More and more people are relying on nontraditional media (like Facebook, Twitter, WhatsApp, etc.) for updates on news, trends, and information. Therefore, making cyberspace a dominant force in forming attitudes, shaping public opinion, breaking stereotypes, decision-making and goal-directed behavior.

Cyberspace has helped level the playing field in a diverse country like India, where there is an evident urban-rural divide. Be it in the form of having virtual classrooms, teleconsultations and facilitating business and financial transactions. Playing computer games has been found to improve peripheral vision, attention switching, multitasking, and speeding up decision-making.

History repeats itself. The cyber world has only a future with no past, making it a challenge. Having access to more shared information and staying connected is good. However, there are always the downsides to note, which is why one will need to be mindful of the way technologies interact with our brains and our psyche. One way to counteract any undue influence of technology would be to exert self-control.

And not engaging in activities that deplete one's mental resistance, like skipping meals or being sleep-deprived. We must take note of the consequences of uncontrolled technology usage, which have public health implications or else risk facing the negative impact on individual and collective health.

The Bad

It is essential to note that technology is inherently neutral. Still, it is how we use it that determines whether it is a boon or a bane. It is a fact that anyone using the internet is vulnerable to potential threats from the dark side of the same. The higher the dependence, the more the vulnerability. Dysregulated use of technology tends to be harmful to individuals in the long-run, especially at the cost of their physical, mental, social and financial health. It includes:

Stickiness

The internet has created a new generation of slaves, ones who voluntarily choose to be bound by the threads of the World Wide Web. Whether we are for or against it, the internet wields a dominant force in our lives. There are few (if no one) who are immune to its influence. It has the power to bring us together or draw us apart. It can make the world seem like a smaller place and but also more distant at the same time.

Binge-watching

Also known as "marathon viewing", it is the practice of watching TV for a long time, typically a full series of a TV show watched in rapid succession. Has been primarily

JAYPEE BROTHERS

made possible by streaming services and digital platforms that produce content quick and easy to consume.

Gaming and Gambling

Gaming is an act of spending a disproportionate amount of time playing games, with the exclusion of academics, jobs and other priorities. Gambling is disruptive and addictive behavior. It involves making guesses, taking risks and betting on uncertain outcomes. Gaming disorder has been considered a mental health condition and included in ICD 11 (World Health Organization, 2018).

At a time when 135 million Indians are obese (Ahirwar, 2019) with a projection of 27 million obese children by 2030 (World Obesity Federation Report 2019), India, lesser physical activity is a key risk factor, contributing to obesity. More time spent online translates to less time spent on physical activity, contributing to the growing pandemic of obesity.

Compulsive Buying

Compulsive buying disorder (CBD), or oniomania is a condition of obsession with shopping and buying behavior that causes adverse consequences. It relates to the preoccupation with obtaining and procuring goods regardless of need, cost or utility. It is associated with poor impulse control, and the easy availability and accessibility of products with tempting offers making it hard to manage. Cyberspace increases the vulnerability to compulsive buying. It is through enabling of dark patterns that trick the user into thinking certain things about engagement that might not be true.

Cyberloafing

Cyberloafing is a relatively innocuous but detrimental practice of using work time to check on personal errands, social media which lowers work productivity and efficiency. Beware of the brain hacks that are devised and designed by tech companies to trigger impulsive behavior and spend vast amounts of time online. These hacks often end up interfering with focus and concentration, thus reducing one's productivity and efficiency. It is the cognitive traits that make the brains of humans hackable.

Multitasking, multislacking and quick changes of stimuli have led to the activation of different brain areas. It has developed new neuronal connections to adapt to challenges faced by people living and working in cyberspace. It is evident in the brain of the digital immigrant and is proof of learning capacity and neuroplasticity. Sometimes, however, these experiences result in "burnout" manifested as attention deficits or distractedness.

Curated World

While we are living in a highly connected age, with 75% of the global population connected and a half on social media, we are unsure about how this will impact social skills, empathy and so on. Empathy is a mental construct that allows us to resonate with other's positive and negative feelings. Magnetic resonance imagings (MRIs considered studying areas of the brain that were activated and inhibited in the usage of digital technology. Spoken and written communication activates the Broca's area.

JAYPEE BROTHERS

The writing and reading emotions activate the right inferior frontal gyrus, previously associated with nonverbal communicative skills. (Small and Vorgan 2011, p. 28) Due to instant gratification of needs on the internet and providing curated content that matches expectations, activation of the limbic system happens. The frontal lobes and parietal cortex (which help us plan, control and inhibit cognitive and emotional arousal) are less activated. This curated world by our preferences, choices, and machine learning could be keeping us away from the real world, rather even reality!

Technoference

Technoference is the interference and interruption of technology in couple relationships and the implications for personal and relational wellbeing. Cyberspace has changed not only the way we communicate but also the form and the frequency of communication. We spend more time chatting or texting with someone sitting miles away and spend less time engaging in face-to-face interaction with the people in front of us. Over time, this has a detrimental effect on our social competency. In that, we become less sensitive to social and bodily cues, lack empathy and self-confidence in intimate relationships and have difficulty dealing with interpersonal frustrations. So, while the internet has succeeded in connecting people from different corners of the world, it has also created distance between people living under the same roof. While technoference is everywhere, it is still not a substitute for the real thing, i.e., direct person-to-person contact. Real human bonding is fueled by biological processes that can happen only in the presence of other people, which social media cannot deliver on.

What is observed in a digital native's brain, whose function in cyberspace is second nature, is a very different process (Dr. Gary Small, UCLA, Semel Institute of Neuroscience and Human Behaviour, 2008). The research focused on those rarely activated brain areas and neural connections in cyberspace which are activated in offline social interactions and solving complicated memory tasks. For instance, the amygdaloid body (which is responsible for initiating and maintaining eye-contact) has less activation. Research has found that regular social contacts are crucial for the development of memory for both the elderly and the young.

There is also a drop in the number of interactions between parents and child. It undermines the process of transmission of culture. It prevents intergenerational support, which in turn affects long-term functioning of society as a whole. On the raise are questions about the impact of widespread technology access and usage by children and its implications on their social, cognitive and emotional development and brain functioning. In contrary to the common perception, concentration deficits and over-excitability disorders in children act as a new model of cognitive functioning. For example, "Indigo children" refers to children who are highly talented but socially maladjusted (Carroll L, Tober J 1999). They have exceptional creativity, intellect, insight and exaggerated self-esteem. But, also are present issues with discipline, observance of norms, respect for authority, dissatisfaction and boredom when it comes to working in a conventional social structure like school. The numbers of such children are increasing, linking their behavioral characteristics to the brain changes that occur as a result of their technology usage. The rapidly changing norms of normal

JAYPEE BROTHERS

functioning and overlay with symptoms of mental illness have challenged an astute mental health professional, sometimes delaying diagnosis and professional help.

Cyber-tsunami

Tsunami is technically an arrival or occurrence of something in overwhelming quantities or amounts. Cyberspace exposes people to a broad range of information (whether true or false). It interacts with their perceptions of threat, personal bias and fears adding onto pre-existing levels of stress and anxiety. Rising stress levels, like the rising tidal waves of a tsunami, in turn, have brought an imbalance in the human condition globally with more and more people reporting mental health problems, mainly post-traumatic stress disorder (PTSD) and a sense of abject desperation. The former was initially considered a soldier's mental health issue. But it is now seen in civilians too. Given their exposure to horrific graphic images and videos available online, the latter is polarizing people into being overly protectionist or extremist.

Cyber Pollution

Traditionally the truth is seen as objective, absolute, timeless with no room for ambiguity. However, in the realm of cyberspace, truth is subjective, ever-changing, relative and time-bound. That one knows today to be accurate, need not be so tomorrow. There is no fixed truth that set-in stone; in fact, it is in a state of flux. While this flexibility allows for many "truths", it also has the potential for chaos, given the uncertainty. In the milieu of running into a digital form of cyber pollution, some commonly faced problems categorized under specific domains include conditioning, drag-along, escapism, triggering, meandering, task or pattern-based.

- *Conditioning:* Response becomes more predictable with repeated reinforcement, with the latter being the reward for the desired response.
- *Drag along:* When one sets out to do something and ends up doing something different that is off the track entirely. In the process of getting sidetracked, decisions get mismanaged even with the best intentions.
- *Escapism:* This is a commonly observed distraction with smartphones and social media to relieve oneself from boredom or unpleasant realities by engaging in entertainment and fantasy.
- *Triggering:* Situation specific triggers that lead the user to go awry.
- *Meandering:* Instances of filling in of time gaps with doom scrolling on the social media sites or smartphone with continuous switching over between the task at hand and the latter.

  Task or pattern-based—Routinely using gadgets to fill pre-sleep boredom including gaming, reading or other activities.

Echo Chamber Effect

Humans are in constant need of seeking social approval, being active members of social groups sharing common ideas and interests. However, for every point of view, there is a defending viewpoint. The beliefs that concord with the ones the group tend to get amplified and subsequently reinforced with time. The ones that are in discord end up getting rejected. Continuous harmony and discord can eventually result in

JAYPEE BROTHERS

polarization. It results in an "echo chamber effect". Confirmation bias, then begins to set in. There is the tendency to specifically look for, recall, interpret and favor only specific information confirming thoughts and beliefs expressed previously. There is thus a specific way of social grouping, constantly pivoting around a single point of view. Referred to as "social media tribalism", this behavior is exhibited typically by groups whose self-organization mimic those of tribes or clans. Here those whose viewpoints do not concord are ostracized, the fear of which keeps many forcefully agree upon ideas that do not concur with their values. Some commonly observed cognitive bias typically noted in social media discussions include:

Anchoring: Also known as focalism, it is the tendency to rely too heavily on a single piece of information or the very first part of information when making subsequent decisions. It implies that people are not always rational in their thinking process when it comes to the crucial decision-making process.

Availability cascade: Also called as the Truth Effect. It is a self-reinforcing process wherein collective belief gains plausibility with repeated public dissemination. It has the potential to hamper critical thinking, thereby compromising the validity of decisions.

Anthropomorphism: It is the tendency to imbue animals or objects with human characteristics.

Bias blind spot: It is the tendency to become blind to one's own biases but on the contrary to become highly sensitive to the preferences in others. This cognitive bias can significantly distort our understanding of reality, without even making us aware of the mechanism, leading to a flawed decision-making loop.

Continued influence effect: Also known as continued influence of misinformation. It is the tendency of one to continue to believe previously known information far after being proven to be false. The falsehood persists in our thinking leading to faulty decision-making loops.

Dunning–Kruger effect: It is also known as Mount Stupid or Smug Snake. It is the tendency for incompetent, unskilled individuals to overestimate their ability and the failure of experts to recognize their competence by underestimating their ability. It can lead to one struggling to have a more realistic view of their skills which in turn affects their behaviors and decisions, from the mundane to the life-changing.

Framing effect: Our choices are influenced majorly by the situational context, and we end up concluding these framed contexts, which can be misleading.

Gambler's fallacy: It is also known as the Monte Carlo fallacy or the fallacy of the maturity of chances. It is a tendency for one to make assumptions on the future probabilities with an influence from past events.

Hostile attribution bias: It is the tendency to interpret other's behaviors as having hostile intent. Like being aggressive or threatening when the behavioral intention is relatively neutral or benign.

JAYPEE BROTHERS

Identifiable victim effect: It is the tendency to respond more strongly to a single identified person at risk than to a large group of people at risk. Incidentally, this cognitive bias is the reason that charities soliciting funds for help in the Third World always show individuals at risk in their brochures.

Omission bias: It is the tendency to judge harmful actions as worse or less moral than equally dangerous omissions (inactions).

Peltzman effect: It is the tendency to take higher risks when perceived safety increases.

Reactance: It is the urge to do the opposite of what someone wants you to do out of a need to resist a perceived attempt to constrain your freedom of choice.

The Ugly: When the Right Intentions Go Wrong, and Wrong Intentions Go Right

The murkier and the uglier side of cyberspace refers to the illegal and criminal online acts aimed at causing deliberate physical, mental or fiscal harm to others. It includes severe forms of Cyberbullying, cyberstalking, cyber-dating abuse, cyber-violence, cyber-crimes including catfishing, phishing and in extremes to cyber-terrorism and cyberwar. Catfishing is the act of creating a fake identity/persona to fraud, deceive into a relationship or abuse another.

Phishing is a cybercrime. Target (s) are contacted via email, phone or text message. It is what anyone who is acting as a legal entity does. The motive is to trap individuals to provide confidential information, such as personally identifying information, banking and credit card data, and passwords.

Cyber-stalking is the act of monitoring another person's online activity with or without their consent. It is a kind of surveillance, boundary violation and form of control, which could be an extension of an abusive relationship.

Cyber-dating abuse is the abuse, threats, or harassment digitally perpetrated within a romantic relationship through technology or other forms of new media such as social networking sites, text messages, or emails (Zweig, Dank, Yahner, & Lachman, 2013). Sending threatening emails, posting hostile messages on the internet, and obtaining personal information about the victim without his or her consent

Cyberbullying is the use of social media to shame, troll and harass people across different social media. There are many reported instances of people using cyberspace to bully, threaten and shame, spread hate and fear, scam/deceive people and disseminate unverified, false and even malicious information.

An extreme form would include the Blue Whale challenge in 2017, which encouraged vulnerable teens/adults to hurt themselves and finally kill themselves using the threat of harm.

Another way of Cyberbullying is the revenge porn. It is uploading of intimate photos or videos of an individual (without their consent or knowledge) to shame them.

There is a tendency to indiscriminately believe whatever one comes across on the internet is true. It is known as Pierre Salinger syndrome, was named after the former White House Press Secretary, who in 1996 incorrectly attributed the crash of flight TWA 800 to the friendly fire by the US Navy.

JAYPEE BROTHERS

"Cyberterrorism" is using information technology and computers to threaten, create fear and carry out violent acts to further political or ideological agendas. Absence of awareness of the applicability of law adds onto people's vulnerability. Anonymous nature allows miscreants to act without regret. Fear and greed fuel cybercrimes. The Information Technology Act (2000), introduced to control and curb cyber-crimes in India and amended in 2008 to focus on data security and regulating cyber-terrorism.

IMPACT OF CYBERSPACE ON WELLBEING

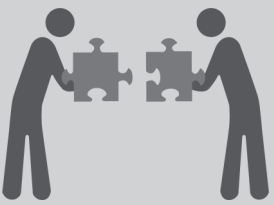
The effect of cyberspace on wellbeing is evident and can be broadly divided into three domains—physiological, psychological, and social **(Table 2)**.

THE BAITS AND NUDGES OF CYBERSPACE

Brignull has (https://www.brignull.com) identified 12 types of dark patterns which seem to catch pretty much everything when it comes to having users tricked.

- *Bait and switch:* As you set out to do something, a different, less desirable thing happens instead. It is same as the bait and switch technique of sales where the advertisement of a low-priced item attracts a customer but then ends up in getting lured to pick a pricier good. Bait-and-switch ads are illegal and carry stiff penalties.
- *Confirmshaming:* This is a technique of guilting the user to commit to something by wording the options in a way that would shame the person into compliance. This technique guilts the user into doing something. One example is signup forms that include choices such as "Yes, Sign Me Up I want to Save Money" and "No, I Don't Want to Save Money".
- *Disguised advertisements:* Disguised advertisements misguide by diverting the navigation by having the user click on the same.
- *Forced continuity:* Free trials that are not free but a trap to continuity, fall into this category of dark patterns. By having the person share their credit card details and making the subsequent cancellation cumbersome.

TABLE 2: The effect of cyberspace on wellbeing.

Physiological	*Psychological*	*Social*
		
Sleep disturbance	Inattention	Reduced social interaction
Obesity	Poor concentration	Enhanced polarization
Increased stress hormones	Self-esteem issues	Diminished empathy
Skin hunger	Impulse control issues	Loneliness
Repetitive stress injuries	Lack of deeper processing	Fear of being left out

JAYPEE BROTHERS

- *Friend spam:* This is an act of getting access to friend contacts through a game or a service and subsequently spams with a message that claims to be sent by the friend himself or herself.
- *Hidden costs:* This is an age-old trick—old wine in a new bottle. The act of including unexpected charges at checkout, e.g., delivery charges, handling charges, tax, etc.
- *Misdirection:* It is the trick of designing the webpage content in a way to distract the customer from paying attention to something else more important.
- *Price comparison prevention:* Designing sites in a way that makes it impossible to compare the price of one item with another, making it difficult for one to make an informed decision.
- *Privacy Zuckering:* Named after Facebook chief executive officer (CEO Mark Zuckerberg, it is the technique of getting tricked with sharing information about oneself more than intended on social networking sites.
- *Roach motel:* An untimely, unnecessary premium subscription to online content by enabling a more accessible user interface for a subscription (e.g., 1-button click subscription) but an arduous unsubscription process.
- *Sneak into the basket:* Noticing an extra add on item that not purchased sneaked into the shopping cart through a checkbox on a previous page is a dark pattern in action.
- *Trick questions:* Generating trick questions in a way that tricks the user on the landing interface by attempting to respond to a deceptive item and color-coded in a way that is not usual, e.g., having the "Proceed" Button color-coded in red and "No Thanks" in grey.

WHY DO PEOPLE MISBEHAVE ONLINE?

Attributed to a phenomenon called the online disinhibition effect coined in 2004 by Professor John Suler, it is the tendency to act out more intensely online than one would in person. It is posited as a cause behind many cyber-crimes. The inhibition failure is due to these six factors.

1. *Dissociative anonymity:* One's identity is anonymous or unknown to others, which allows for action without consequence. Besides, people even convince themselves that their online behavior is not really "them."
2. *Invisibility:* One is not seen and therefore, more at ease in communication, transactions, etc. There is no pressure to look a certain way or even be at the receiving end of disapproving looks, long stares, etc
3. *Asynchronicity:* The communication exchanged can have a time lag. It indicates that emails and texts do not have an immediate response, unlike in real-time interactions where the back and forth occurs instantly. The delay in between is disinhibiting since one does not have to respond quickly.
4. *Solipsistic introjection:* Without face-to-face conversations, we vocalize or subvocalize other people's messages. Its basis is on our voice based on how we have characterized them. Since we are "talking to ourselves", we feel comfortable to say anything.

JAYPEE BROTHERS

5. *Dissociative imagination:* Detaching one's "real self" from the actions of the "virtual self" as if they are two separate entities, which means that the person cannot be held accountable for the effects of the online persona.
6. *Minimization of authority:* The Internet provides a level ground with no hierarchy of power. Everyone regardless of who they are in "real life" is equal in cyberspace and have equal opportunities to express themselves.

CONCLUSION

Although technology has undeniably eased communication and transactions, provided a level playing field and reduced the carbon footprint of the world—"one man's tool is another man's weapon". Despite all good intentions, the use of technical advancements to harm rather than help society is a cause for concern. An example is the use of technology in large-scale, organized crime, such as international terrorism, drug trafficking and mafia cartels. It is used to commit crimes that constitute more personal assaults on individuals such as Cyberbullying and abuse (even leading to suicide), sexual predation, revenge porn, and damage to a person's identity. While these dangers are damaging, what is also a cause for concern is the excessive amounts of time spent online doom surfing without any real need or purpose. This seemingly innocuous activity robs people of the time that could have been used for more productive tasks or even connecting in realtime with another human being. Another example is teaching, where the instant and immersive format of cyberspace makes conventional modes of education and learning unattractive for the digital native who find classes boring, obsolete and sluggish. Their shortened attention spans and need for instant gratification and easy access to information makes the process of imparting knowledge more challenging. With power, comes responsibility. The consequences of using cyberspace are bound to grow, hence the effect on everyday life. It is useful to note that it is not our deliberate usage of technology but instead our impulsive usage, which is problematic. In the latter, lack of full awareness contributes to uncontrolled and impulsive use that can interfere with memory, result in stress, sleep disturbance, lack of attention and concentration, as well as problems with socializing and changing one's perception of the world. The positive consequences are addressed commonly and accepted usually. Conversely, adverse effects gain less attention. It is because cyberspace delivers both good and bad. The challenge of differentiating the two can be expressed by paraphrasing a cliche: one man's terrorist (adverse effect) is another man's freedom fighter (desired effect). It is, therefore, very much in the interest of the public to have safe and secure cyberspace.

BIBLIOGRAPHY

1. Ahirwar R, Mondal PR: Prevalence of obesity in India: A systematic review. Diabetes Metab Syndr. 2019;13(1):318-21.
2. Barak A (Ed.). Psychological Aspects of Cyberspace: Theory, Research, Applications. New York, NY, USA: Cambridge University Press; 2008.
3. Brignull H. Types of Dark Patterns. Available from: https://darkpatterns.org/types-of-darkpattern.html [Last accessed October, 2020].
4. Caroll L, Tober J. Indigo Children, Hay House Inc; 1999.

JAYPEE BROTHERS

5. Carr N. (2020, October). The internet as an engine of liberation is an innocent fraud – Nicholas Carr: Aeon Essays. Aeon. https://aeon.co/essays/the-internet-as-an-engine-of-liberation-is-an-innocent-fraud.
6. Fegan J (2016). The psychological effect of cyber abuse can be devastating. Available from: https://www.irishexaminer.com/viewpoints/analysis/special-report-psychological-effect-ofcyber-abuse-can-be-devastating-409534.html [Last accessed October, 2020].
7. Gibson W. Neuromancer. New York: Ace Book; 1984.
8. Internet usage in India. https://www.statista.com/topics/2157/internet-usage-in-india.
9. Ramírez JM, García-Segura LA, Medina CGL (Eds). Cyberspace: Risks and benefits for society, security and development. Cham, Switzerland: Springer; 2017.
10. Rashid I, Kenner S. Offline: Free Your Mind from Smartphone and Social Media Stress. Chichester, United Kingdom: John Wiley and Sons; 2019.
11. Small G and Vorgan G. Meet Your iBrain. Scientific American Mind, 2008;19(5):42-9. Retrieved November 8, 2020, from http://www.jstor.org/stable/24939975
12. What Are Dark Patterns? (And Why You Shouldn't Use Them) Available from: https://designshack.net/articles/ux-design/dark-patterns/ [Last accessed October, 2020].
13. What is Phishing? Available from: https://www.phishing.org/what-is-phishing [Last accessed October, 2020].
14. Whittaker J. The Cyberspace Handbook. London: Routledge; 2004.
15. Zweig JM, Dank M and Yahner J, et al. The rate of cyber dating abuse among teens and how it relates to other forms of teen dating violence. J Youth Adolescence. 2013;42:1063-77. https://doi.org/10.1007/s10964-013-9922-8

JAYPEE BROTHERS

for detailed information on psychiatry books, visit our website www.jaypeebrothers.com, for detailed information on psychiatry books, visit our website www.jaypeebrothers.com, for detailed

CYBERPSYCHIATRY

Salient Features

- One amongst the very few comprehensive and authoritative texts in the field of Cyberpsychiatry, has expositions on various facets of psychological problems associated with the use of the Internet
- The universally exploding use of the cyberspace all over the globe is frequently a cause for concern due to its improper use. This can lead to a variety of psychiatric problems, and these need to be addressed by, amongst others, competent professionals
- Various chapters in the book expound the nature of the cyberspace, effect of its use in the early developmental stages, various psychiatric disorders associated with the use of the Internet, their assessment, prevention and management, research and a futuristic look at this field
- Chapters, authored by some of the most eminent mental health professionals working in this area, will be a valuable help in attempting to reduce the morbidity associated with the misuse of the cyberspace
- It is likely to benefit both students and experts in the field of mental health and the various stakeholders.

Sudhir Bhave MD is the Professor, Department of Psychiatry, NKP Salve Institute of Medical Sciences and Research Center, Nagpur, Maharashtra, India, and holds several honorary positions at various teaching institutions. A topper throughout his academic years, he has published more than 25 research papers and contributed chapters to several books on mental health. He is the chairman of the "Cyberpsychology" specialty section of the Indian Psychiatric Society, and has special interest in this field. He is also an acclaimed light music vocalist and is acknowledged as an authority on music.

Sushil Gawande MD is an Associate Professor, Department of Psychiatry, NKP Salve Institute of Medical Sciences and Research Center and Lata Mangeshkar Hospital, Nagpur, Maharashtra, India. He is an active member of the Cyberpsychiatry Section of the Indian Psychiatric Society. He has contributed many research papers and chapters in the books on psychiatry. His special area of interest is Cyberpsychiatry and Behavioral Psychiatry.

Printed in India

Available at all medical bookstores
or buy online at www.jaypeebrothers.com



JAYPEE BROTHERS
Medical Publishers (P) Ltd.
EMCA House, 23/23-B, Ansari Road,
Daryaganj, New Delhi - 110 002, INDIA
www.jaypeebrothers.com

Join us on facebook.com/JaypeeMedicalPublishers

Shelving Recommendation
PSYCHIATRY

