

The Reinforcements and Punishments in Social Media Addiction

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Abstract. In contemporary society, as electronic devices are having rapid development and growing popularity among the public, social media, as a by-product, has had various effects on all cohorts, aging from below 6 to over 80. The reinforcement and punishment of users by social media has been the focus of attention, not only affecting physical health but also indelibly changing people's minds. This paper aims to define this novel social media and electronics addiction and focus on how this addictive behavior develops. We concentrate on the causes and manifestations of the positive reinforcement and negative punishment associated with social media addiction, analyze and study them, discuss how social media will affect people in the future, and finally explore some approaches to address the symptoms.

Keywords: Social media addiction, Operant conditioning, Reinforcement, Punishment.

1. Introduction

Social media addiction is a common type of behavioral addiction in recent years. The general phenomenon is being overly concerned about social media due to an uncontrollable urge to engage in social media, and devoting an excess of time and energy to social media, which harms other aspects of life. This addiction incorporates similar symptoms as other substance-related addictions, such as emotion modifications (mood shifts caused by participation in social media platforms), preoccupations (time of social media usage), tolerance (increasing use), withdrawal symptoms (unpleasant feelings when behavior ends), conflict (personal mental problems) and relapse [1].

Operant conditioning plays an important role in making social media addictive. This concept consists of two key terms: reinforcement and punishment. They are both applied on the social media platforms by SNS companies, aiming at grabbing people's attention and occupying more of their time. The mechanism of social media is relatively simple. Users can get feedback on their posts in the forms of "likes", a signal of approval from other people regarding the content. This is supposed to act as a reward or a reinforcement. Some researchers discover that such positive feedbacks function in similar motivational mechanisms as other basic types of rewards, like wealth or food. It is shown that the neural and computational mechanism of social rewards such as "likes" closely overlaps with the non-social rewards, suggesting that social media might maximize the function of reinforcement.

Nowadays, as social media addiction is getting more common than before, more population tend to suffer from this symptom and have some mental problems. Many people use social media habitually, and it starts to spill their lives, crashing many parts of people's daily routines. For example, some individuals may check their social media while driving or walking, some may check their phones frequently during a short trip, and others may go online even when they are watching a movie in the cinema [2].

The collected data about social media addiction is also severe. Anecdotal data shows that a significant fraction of users engage in obsessive smartphone use, which has even started to resemble an epidemic. According to a survey, 15% of young adults are extremely reliant on cellphones, while 45% of US citizens claim they cannot live without their smartphones. When forced to put down their phones, about 88% of people experience intense worry, anxiety, loneliness, and sometimes even

physical disease. More seriously, more corporate executives are inclined to spend more time on social media, which is related to the plagued of obsessive-compulsive disorders. A set of physical health symptoms arises as well, including phubbing, checking habits, the cycle of responsiveness, sleeplessness, stress, minimal human interaction, and work interventions [3].

2. Formation of social media addiction

2.1 Section Headings

The general definition of social media addiction, a type of behavioral addiction, is somewhat compulsive usage of social media sites that significantly impairs users' functioning in critical areas. Its formation of it can be explained in one specific way. In the perspective of operant conditioning, social media triggers the desire for people's self-disclosure, this desire will be stimulated more in the catalyst of variable ratio reward from the internet, which are the feedbacks, named reinforcements and punishments in operant conditioning [4].

In the normal situation, using the definition of reinforcements and punishments, the positive reinforcements are the rewards that make people keep using social media, for example, the complimentary comments received, while the negative reinforcements mean taking away the bad results in order to stimulate the using of social media, the theory is also applied to punishments. However, the function of punishments has gone far more than that, it can also be used as reinforcements, which can stimulates the motivation of action. For example, when receiving a bad comment, in normal situation people tends to see the comment as a punishment which triggers their negative emotions. In the situation of punishments are treated as reinforcements, a bad comment stimulates a person's desire to rebut and defend themselves, and that leads them to use more social media as replying. That is the problem, the bad comment here has become rewards or a stimulator, and it triggers the willingness of people to use social media, so why is that?

2.2 Punishments as reinforcements

We can use the fruitflies experiment to explain this phenomenon. The experiment is first made by Hiromu Tanimoto, Martin Heisenberg, and Bertram Gerber from the University of Wurzburg [5]. The experimenters used several fruitflies that had received the training of electric shock paired with a specific odour. And then they separated the fruitflies into two groups. The only factor was the interstimulus interval (ISI), which was the amount of time between the beginning of exposure to the "trained" smell for the association and the shock.

Depending on the temporal order of the trained scent and shock that they had encountered during training, the flies had opposing reactions to the trained odour during testing (either conditioned avoidance or approach). Fly behavior indicated conditioned avoidance when the odor came before the shock. However, flies displayed a conditioned approach when the shock came before the odor.

In conclusion, the fruitflies were able to associate the same odour with either danger or safety in different situations. When odour preceded the shock, it becomes a predictor of danger, When they come after shock, they can also be used to anticipate safety. Similar temporal dependencies apply to bidirectional synaptic plasticity, where the order of two inputs affects whether synapses are potentiated or depressed. The theory is also applied to the condition of social media addiction, the sequence of the input however in this situation has become the role wants to play on the internet. For example, people treat social media as a sharing platform that wants to receive compliments, the bad comments are seen as inhibitors that reduce their desire for social media. And people who use social media to search for attention, on the contrary, are attracted by bad reviews.

3. Punishment and reinforcements

3.1 Punishments vs reinforcements

With the knowledge of punishments can work as reinforcements, another question has come up, can punishments exert the same effect just like reinforcements. The answer is no. Although punishments can work as reinforcements, however, these “reinforcements” has accompanied many drawbacks.

This question can be explained using the concept of stereotype. Stereotype, literally means a set idea that people have about what someone or something is like, and the stereotype people have given to the reinforcements is something we can get after accomplishing a task, while the stereotype of punishments is something we cannot do, if we do this, we may get bad results. These perceptions have restricted the function of “punishment” and “reinforcement”, so when the punishment, which means to inhibit behavior, is used as a reward, the effect may decrease, just like the key to the door, punishment doesn’t match the reflex neurons in our brain for inspiring our motivation to do the targets.

Likewise, we can use an experiment to explain from another perspective [6]. In a situation where the individual dislikes activity A. The punishment is designed such that the recipient must choose between two much more unpleasant possibilities to force the person to engage in the activity. It is discovered that the person is currently in a conflict position where they can choose to participate in the activity or receive punishment. Finally, with no doubt the individual may become more dislike activity A, since the punishments push pressure on it, which is the process of classical conditioning, the punishment has associated with activity A. So punishments can only be used as a temporary drive, the motivation it stimulates cannot last for a very long time as reinforcements. Another point is that even though punishment can be used as a reward, it is always companied by pain and anxiety, the negative mood forms are always taken a larger proportion than the positive one.

3.2 The influence of punishment

After a large amount of information, combined with the analysis, we categorized the formation of punishment into several causes.

In recent years, social media has become an essential part of young people's lives. Young people are exposed to and utilize social media daily, and they exchange information through social media to provide themselves with a degree of mental satisfaction. But for some people who are social media dependent, one of the reasons for this symptom is the anxiety that comes with social media. The function of most social media is to allow people to show their lives to others. Whenever people see people who are superior to them both materially and spiritually, they will naturally develop a sense of anxiety. For teenagers, face anxiety is the most dominant aspect. In social comparison theory, Leon Festinger asserts that individuals have the psychological tendency to compare themselves with others in order to determine their self-worth, and are influenced by social situations, sometimes comparing themselves with those who have better conditions than themselves, and sometimes comparing themselves with those who have inferior conditions, in order to pursue their self-worth.[9]This behavior is magnified to the extreme in adolescence [7].

Many young people compare themselves with others, for example, in terms of quality of life, wealth, and so on. [8]Studies have found that women are more prone to jealousy than men. People often have an inferiority complex when they see people who are superior to them and feel that they are not good enough in a certain field compared to their ideal type, which even affects their self-esteem and hurts themselves or others. With the amount of idealized content being posted on social media and the increased amount of time occupying on internet, the anxiety generated by young people will gradually increase, thus leading to prolonged social media usage [8].

In addition to the anxiety generated by comparisons in appearance, wealth, etc., the anxiety generated by people in terms of diet, especially a healthy diet, is also a cause of social media addiction. Some young people or people who are concerned about their health will often focus on their exercise

program and food intake, and these people will compare these aspects with others to create a sense of satisfaction or urgency [9]. This persistent behavior can lead to significant anxiety and unhealthy effects on the self, such as decreased physical and mental status and eating disorders. While there is no obvious association between eating problems and social media addiction. However, young people can experience anxiety while following people who share a healthy lifestyle and diet, leading to health problems and social media dependence [10].

The third more important reason is because of the COVID-19 pandemic. As the virus has spread globally, people have received a variety of negative effects and face-to-face human interaction has become less and less frequent as a result. As a result, people will spend more time on social media, and they will choose to engage in recreational behaviors such as watching TV shows or playing games. Because of the psychological and physical effects of COVID-19, people will devote themselves to the virtual world. In Chinese society, for example, close to 1/3 of the population faces moderate and severe social media and Internet addiction, as well as having a more profound impact on some people who were once addicted to social media [11].

Because of the Chinese government's epidemic prevention policy, people were encouraged to stay home during the epidemic and reduce their interaction with 1 other people. People turned to the virtual world of social media, where participants attempted to seek inner freedom and desire to communicate in a variety of ways online in an attempt to reduce the anxiety and stress caused by the epidemic and to alleviate the symptoms. Thus, COVID-19 has increased the heavy use and over-reliance on electronic devices [12].

We also observe the stimulation of social media for its users at the time of use, that is, the software attracts the attention of the users. Although we did not discover a link between addictive behavior and the attention-attracting aspects of the user, this behavior is thought to be produced by changes in neurological substances within the brain.[14]Surprisingly, we discovered that some negative stimuli such as comments and views on social media are perceived as attention grabber. The researchers concluded that although there is no clear evidence that people's attention is disturbed, people make subjective evaluations of themselves and of the items they see in question. The change and appearance of the stimulus results from seeing the objective evaluation of others. It is during this period that people subjectively seek out what they desire to see, and it is during this period that the stimuli have their greatest effect. Although the emergence of this attentional bias was found in the study, this bias was not significantly associated with social media addiction, so further research on this will be conducted in the future.

4. Conclusion

Whereas most existing researches on social media addiction focus on the mechanism of reinforcement based on operant conditioning, this study aim at concluding the available research on how can punishment function as a positive mechanism on social media platforms. It proved that both reinforcement and punishment can motivate individuals to stuck on social media. However, the drawbacks of punishment cause more people to become addicted, and it is sometimes inevitable under current social circumstances.

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