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Cyber Violence with Biosocial Perspective and The Role of Preventive Legislative Mechanism

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Abstract

The term biosocial in this study stands for a social variable that can potentially influence violence or cybercrime through a biological mechanism. This study adopted Owen (2014a)'s Genetic-Social and meta-theoretical framework to conceptualize cybercrimes and build a model of cyber violence that could help in predicting aggressive online behavior and the role of the state legislatures to prevent these types of cybercrimes. The study adopted a historical-normative research method which involved documentation search and archive segmentation according to the research variables. In this qualitative study, the data was collected from various sources including cyber law archives, databases and repositories. The data was analyzed with two research methods: system analysis and synthesis of internal and external documentation on the topic under study. The findings of the study revealed that cybercrimes and the related delinquent and criminal behavior are the results of the interaction between the human biological predispositions and social interactions. The study recommends establishing a National Cybersecurity Authority or A national level Cyber Security Guidance bureau to develop, implement, and supervise administrative and legal mechanism and strategies.

Keywords: Cyber Security; Biosocial Perspective; legislative mechanism; cybercrimes

Introduction

Biosocial criminology is a domain that lists and explains factors that contribute to criminal behavior emanating not only from environmental and social factors but from biological factors as well. These factors include health risks, genetics, psychophysiology, and neuropsychology and disruptive social matters that develop criminal tendencies in individuals. In the modern times, such criminal tendencies become ostensible in the form of Cyber violence, thus giving a biosocial perspective to cybercrimes. This would include online hostile and aggressive behavior against victims who can be from any background with regard to age, gender, ethnicity, sexuality or social class. There are several biological factors including molecular genetics, brain structure and neuropsychological framework that link biology with

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antisocial behavior, giving rise to new offenses of biosocial nature. Similarly, there are other social factors like education and socioeconomic status that also contribute to crime and aggression. A large amount of research has been carried out in last two or three decades that talk about the interaction between biological and social factors in various behavioral disorders and criminal offences. This study is also an attempt to understand the nexus between "Biological" and "Social" Variables and examine how these variables can be applied to cyber violence and cybercrimes and whether administrative and legislative measures have been able to curtail such offences.

Cesare (2006) was perhaps the first scientist to establish a link between biology and crime. In his book, *L'Uomo Delinquente (The Criminal Man)*, this Italian scientist observed a few physical characteristics of criminals (e.g. long arms and fingers, sharp teeth, extended jaws, and abnormal clusters of body hair that distinguished them from other citizens. He believed that criminals due to their biological abnormalities were indulged in criminal activities instinctively. Socially, they lacked free will and therefore were not morally responsible for their criminal actions, which further added the biosocial perspective to Lombroso's argument. Lombroso (1896) is also criticized for not having considered social factors that could lead to criminality. Apart from Lombroso, there were a few other early criminologists like Raffaele Garofalo (1852–1934) and Enrico Ferri (1856–1929) who tried to identify the biological determinants of crime and violence. However, they did not consider deprived social conditions, poor nutrition and health care and destitute lifestyle that could have genetically determined many of the physical traits that led to criminal activity. Moreover, their studies were based on small, nonrandom samples and inadequate control groups. In short, the biosocial variable of crime was proven methodologically less robust and naïve, which led many 20th century scholars to turn their attention to more sociological explanations of criminal behavior.

The use of biosocial variable as a meta concept for crime and aggression again rose to attention at the turn of the 20th century, by many psychiatrists and criminologists (Ellis et al., 2019; Englander & Muldowney, 2007; D. Fishbein, 1996; D. H. Fishbein, 2001; Paternoster et al., 2016; Siegel & McCormick, 2006), who believed that certain physical characteristics indicated a "criminal nature" : for example, Schulz et al. (1997) found the role of cortisol in aggression; Eagleman (2011) brought to attention the role of the pre-frontal cortex in teenagers and underdeveloped brains for impulsivity, and so on. There are studies that have discussed the behavioral patterns of criminals: Buckels et al. (2014) associated crime with Machiavellianism, sadism and psychopathy; Bishop (2013), too, identified anti-social personality disorders reflected as hate trolling and online offences; while Suler (2004) called it online disinhibition effect, when it comes to cyber violence or cybercrimes.

Owen (2014a)'s Genetic-Social or the meta-theoretical framework has been adopted globally to study online violence and cybercrimes. There is a general belief that Owen's meta concept of Flexible Causal Prediction (FCP) is rooted in cyber violence; which further paves the way to the approach of biosocial variable of crime. When Owen's Genetic-Social approach was first applied to cyber violence, it led to many questions such as whether the biosocial variable and neurological mechanism of an individual work together for impulsive behavior seen in teenage cyber-trolling. The argument that Eagleman (2011) had put was 'the human prefrontal cortex did

not fully develop until the early 20s, and this is the cause of the impulsive behavior of teenagers’.

Besides the biosocial perspective, there are also some ontological and practical issues of administrative and legislative mechanisms. In a few places, administrative sanctions and criminal sanctions are levied against the inefficiency of state officials to stop such cybercrimes, however, such measures have failed to stop the cyber offences of biosocial nature.

Hence, the primary objective of this study was to know how the administrative or legal mechanism of a nation could attempt to understand the biosocial perspectives of cybercrimes and resolve the issues accordingly. Based on this major objective, a few sub-objectives were derived, namely:

1. To define the nexus between bio criminology and social behavior;
2. To define more precisely the biosocial variable and Cyber violence;
3. To outline the administrative and legislative mechanism that could be established to check cybercrimes in a biosocial perspective.

Literature Review

- *Biological theories and Criminal behavior*

There are various biological theories of crime that justify the linkages between certain biological conditions and criminal behavior. Lombroso (1896) was the first to take up this linkage who, based on skulls and facial features of criminals, hypothesized that criminality was associated with atavism, or reversion to the primitive stage of human development. Likewise, William Sheldon (quoted in Robertiello (2014)) believed that criminal behavior was more common among muscular, athletes or mesomorphs (he contrasted with tall and thin persons, ectomorphs and soft, rounded ones, the endomorphs). There also arose the debate about some linkage between criminal tendencies and chromosomal abnormalities, believing that males with the XYY-trisomy (extra Y chromosome) would be more prone to criminal behavior. Another theory states that biological twins are more likely to exhibit similar tendencies toward criminality if they are identical (monozygotic) than if they are fraternal(dizygotic). These studies also suggest that adopted children are more inclined to crime if one of their biological parents is a criminal. There are also other theories such as neurotransmitter imbalances in the brain (e.g., low levels of serotonin), hormonal imbalances (e.g., higher levels of testosterone), and slower reactions of the autonomic nervous system might increase criminality.

Although most of these biological theories have waned in the modern times, but they succeeded in triggering the investigations to find the connection between biology and delinquent and criminal behavior. The causation of these biological factors is not certain as there are also non-biological (social and cultural) factors that have intervened these beliefs e.g., poverty, alcoholism, social deprivation, and environmental factors. The biosocial theory of crime was pioneered by Linehan (1987), whose biosocial theory of Borderline Personality Disorder (BPD) argued that crime is often the result of an emotional disorder and individual’s biological vulnerabilities triggered by the environmental factors. It means that criminals often

experience an emotional dysregulation and that they are not able to regulate due to the intense emotional sensitivity and fail to return to normal emotional behavior. Linehan also suggested some biological reactions due to this emotional dysregulation (e.g., limbic dysfunction) (Reeves, 2007).

- *Bio criminology and social behavior*

Lombroso's pioneering work *L'Uomo Delinquente (The Criminal Man)* suggested a link between biology and crime (Lombroso, 1896). Initially, Lombroso's research was limited to the prisoners who were the subjects of his research. For his research, he collected anatomical measurements of prisoners and compared them with those of ordinary citizens. Lombroso's research was rejected by most of his contemporaries and modern criminologists (Ellis, 1989; Ellis & Walsh, 1997; Englander & Muldowney, 2007; D. H. Fishbein, 2001; Yaralian & Raine, 2001). The argument was that Lombroso did not consider all the physical traits and also disregarded the social conditions like deprivation, poor nutrition and health reasons that could lead to criminality. In the early 20th century, methodologically scholars therefore paid more attention to sociological factors of criminal behavior. In 1970s, however, the biological correlation with crime was rekindled by E. O. Wilson (1975)'s book *Sociobiology*. E. O. Wilson (1975) reiterated that all humans were biosocial organisms and that their behaviors were influenced by both physical and environmental characteristics. Wilson later (D. S. Wilson & Wilson, 2007) rekindled the debate that criminals should not be viewed only as people whose behaviors are predetermined by their biological traits, but a dominant role is also played by social and environmental conditions, supported by other scholars (Ellis et al., 2019; Ellis & Walsh, 1997; Englander & Muldowney, 2007; D. H. Fishbein, 2001; Yaralian & Raine, 2001). These biosocial scholars opined that although many people face same environmental stressors, but only a few engage in crime and violence because of biological abnormalities or physical disabilities.

Modern-Day Biosocial Theories are products of both social environment and biology, and therefore biosocial theorists (Glueck & Glueck, 1950) argue that sociological theories of crime should consider biological factors and individual personality traits such as irritability, anger, short temper and lack of intellect that can influence a person's capability of sane thinking. These theorists also argue that such traits are conducive to crime and or increase the likelihood of crime. Such individuals who possess traits conducive to crime are therefore aversive to environmental positivism. Another thing observed in the biosocial perspective was that such individuals develop traits of crime right childhood normally termed as juvenile delinquency, based on their empirical study of a sample of 500 delinquent white males aged 10 to 17 in two juvenile reformatories in Massachusetts and 500 non-delinquents from Boston public schools, Glueck and Glueck (1950) concluded that sociological factors aggravated the criminally tendencies.

- *Biosocial variable and Cyber violence*

One of the biosocial components that arouse a person to cyber violence or online crime is the attraction to the opposite sex during early puberty. Cyber bullying among teenagers is very common as they spend a lot of time on the Internet. In their addiction to internet, they are so obsessed that they lack every social desire to

communicate with peers, friends and even family members. Cyber bullying is carried out through social networks, chats and blogs, which is a form of deviant behavior. Its consequences can be dangerous not only for the victim, often falling into a psychological trauma. There are several crime prevention programs that focus solely on biosocial factors, that are compatible with traditional sociological approaches. Most of these programs advocate the integration of biosocial perspectives with criminological risk factors and argue that delinquent behavior can be prevented through biosocial initiatives including the improvement of cognitive skills, also known as ‘cognitive remediation’ (D. H. Fishbein, 2001; Raine & Liu, 1998). Such prevention approaches not only control the genetically triggered risk factors but also prove to be effective strategy to prevent cybercrimes from a biosocial perspective.

- *Administrative and legislative mechanism*

The Global Cybersecurity Index (GCI) is a security system that measures the commitment of countries to cybersecurity at a global level. It raises awareness about the issue of cybersecurity and its different dimensions. The GCI has categorically defined five assessment criteria depending upon a country’s level of development namely (i) Legal Measures, (ii) Technical Measures, (iii) Organizational Measures, (iv) Capacity Development, and (v) Cooperation. The legal aspects of cybersecurity however require cybercrime legislation. In 2010, therefore, a few countries gathered in Budapest and signed the Council of Europe Convention on Cybercrime. The objective of this convention was to create “a common criminal policy aimed at the protection of society against cybercrime, inter alia, by adopting appropriate legislation and fostering international cooperation” (Vatis, 2010). Likewise, another regional agreement of the Council of Europe Convention on Cybercrime substantiated the offensive provisions of cybercrime and emphasized the need to take firm actions (Clough, 2012).

In the United States, in November 2018, President Trump signed the Cybersecurity and Infrastructure Security Agency Act of 2018 (Gorian, 2018), thus establishing the Cybersecurity and Infrastructure Security Agency (CISA). The role of CISA was to assist both government and private sector organizations to resolve issues related to cybersecurity. Recently, the Biden administration also proposed \$2 trillion to fund the infrastructure for AI resilience out of which \$9.8 billion was to be used use for cybersecurity (Skopik et al., 2016).

Theoretical framework

This study adopted Owen (2014a)’s Genetic-Social and meta-theoretical framework which is widely applied to studies on cyber violence. This framework makes use of meta-constructs such as the Biosocial Variable to conceptualize cybercrimes and build a model of cyber violence that could help in predicting aggressive online behavior (Liu & Wuerker, 2005). In this framework, the Biosocial Variable is shown as a derivative of genetic fatalism or genetic predetermination and inevitability (Owen, 2006, 2014a, 2014b, 2017, 2021) and bio-phobia (Freese et al., 2003), which are strong determinants of criminology. The term, *Genetic-Social* was adopted to differentiate it from Sociobiology (Owen, 2006, 2012, 2014a, 2014b). This

framework is consistent with Sibeon (2004)'s anti-reductionist framework; Bishop (2013)'s and Lobbestael et al. (2010)'s anti-social personality disorder syndrome towards violence; and Eagleman (2011)'s argument to establish linkages between prefrontal cortex and impulsivity resulting in violence and crime among the teenagers. These frameworks are also directly or indirectly linked to biological variables and behavioral genetics which further strengthened the task of conceptualizing cyber violence in biosocial perspective for the current study.

Methodology

The study adopted a historical-normative research method which involved documentation search and archive segmentation according to the research variables. In this qualitative study, the data was collected from various sources including cyber law archives, databases and repositories. The data was analyzed with two research methods: system analysis and synthesis of internal and external documentation on the topic under study. These methods assist in the systematization of facts and a logical analysis of arguments in the study. The methodology also matched with the study's premise that cybercrimes and the related delinquent and criminal behavior are the result of the interaction between the human biological predispositions and social interactions.

Results and discussion

The current study revolved around the bio-genetic-social, meta-theoretical background of online violence and cybercrimes and the role of the state legislatures to prevent these types of cybercrimes. One of the criticisms of Lombroso's theory of linkage between biology and crime (Lombroso, 1896) was that Lombroso disregarded the social conditions that could lead to criminality. Another scientist, N. K. Wilson and Rigsby (1975), had the opposite view, who asserted that humans were biosocial creatures and hence their behaviors were influenced by social and environmental characteristics. Wilson actually advocated the theory of behavioral determinism due to biological traits.

Lombroso (1896)'s theory is much closer to biological determinism which is much wider concept with scientific and anthropological linkages with criminality. It hypothesizes that criminal behavior is determined by birth and that some people are born with an innate impulse to commit crime. In their criminality, therefore, social processes or environmental factors have no role to play (Cressey, 1979) A person's interaction with his or her social context thus deems to have no influence on his criminal behavior (Allen, 1999).

A second finding of this study was Owen's meta concept of Flexible Causal Prediction (FCP) being the foundation of cyber violence. The FCP framework comprised variables such as potential causes of cybercrimes and approaches to be taken for combating them. Entwined with the FCP framework was Owen's Genetic-Social approach to cyber violence which acknowledged that crime may be socially-constructed but it is always triggered by environmental factors. Owen (2014b) discounted biosocial predispositions as behavioral labels that define a cybercriminal. The biosocial justification of the *Genetic-Social* framework also lay in the phenomenon that human being reacts to social triggers and environmental factors to commit crimes.

This study also introduced the researchers with Linehan (1987)'s biosocial theory of Borderline Personality Disorder (BPD) which focused on such biological predispositions that aroused a person to commit crimes in a crime prone environment. The biosocial theory of BPD related the criminal tendencies of adolescents with their premature emotional development and impulsive traits devoid of emotions. It argued that crime was an outcome of an emotional disorder and a person's biological weaknesses triggered by the social and environmental factors. In the case of cybercrimes, arousal to commit a crime is actually an emotional dysregulation. The person is forced to commit that crime as it takes a lot of time to return to normalcy or emotional stability. In a way, the commitment of the crime becomes a precondition to return to emotional normalcy.

These findings are consistent with biosocial and genetic studies (Popma & Raine, 2006; Vaughn et al., 2009) which have also accepted the importance of biosocial to crime.

Biosocial researchers in the discipline of crime and delinquency (DeLisi, 2008; Walsh & Beaver, 2009; Wright & Boisvert, 2009) advocate the developmental approach to focus on risk factors as well as their mitigation in order to improve environmental conditions (Tremblay & Japel, 2003). This suggests the biosocial theories are making their way into the criminology (Walsh & Beaver, 2009). The developmental approach is incremental in not only finding the causes of crime (e.g., biosocial or environmental) but also proves to be a crime prevention strategy. This requires studying a person's interaction with the biosocial surroundings and the environment. Bio criminologists like (Walsh & Beaver, 2009; Wright & Boisvert, 2009) have however also insisted on the rehabilitative plans for all delinquents and criminals, to create healthy environmental conditions as solutions to prevent crimes.

One of the solutions also discussed in this study was to establish a secure environment not only for data protection and risk-proof digital operations but also to provide legal and administrative support to the victims. To accomplish this, there is a need to establish a National Cybersecurity Authority which can develop, implement, and supervise administrative and legal mechanism and strategies. The most important aspects of the legislative initiatives would be to ensure Cyber Security Governance, enhanced Cybersecurity, Cybersecurity resilience and industrial control systems against cybercrimes. Nations could also establish Anti-Cyber Crime Laws to prevent cybercrimes. National level programs and orientation for legislative initiatives should be organized to raise awareness about Cybersecurity and how to avoid cyber risks. A national level Cyber Security Guidance bureau could be launched to cater to the increase community awareness of Cybersecurity.

Conclusion

To conclude, this study has shown that by focusing on biosocial theories, one can find an effective and non-discriminatory way to prevent crime. The bio-crime prevention approaches also recognize the importance of the environmental factors and building strategies to establish a Cyber criminological domain governed by biosocial framework. Biosocial theorists face a number of serious criticisms (Ellis et al., 2019; Ellis & Walsh, 1997; Englander & Muldowney, 2007; D. H. Fishbein, 2001). First of all, biosocial research has not been adequately dealt with methodologically. Several studies are either without biosocial variables or carried out with

unrepresentative samples. Secondly, biosocial theories have failed to distinguish between cyber violence and an ordinary violence. Furthermore, biosocial theories cannot recognize the level of rise in the cybercrime over time.

Biosocial criminologists have also been charged with racial and class bias (Roberts & Gabor, 1990) in determining the biosocial causes of violent crime. According to their belief, poor and racial minorities commit violent crimes disproportionately. However, the more positive view of this was to make a more productive approach and focus on removing the social factors (oppression, racism, social exclusion, economic strain, etc.) which cause crimes of racial nature rather than spending time and efforts to understand the genetic basis for criminality. Such scholars, however, warn that biosocial theories may be attractive to some because they can be used to justify social inequality and deflect attention from crime prevention efforts that might challenge the status quo.

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