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EXPLORING THE EVOLUTION OF BIOSOCIAL CRIMINOLOGY: SOCIOHISTORICAL ORIGINS, CORE ASSUMPTIONS, AND ITS TRANSFORMATIVE INFLUENCE ON CRIMINAL JUSTICE PRACTICES

AUTHORED BY - PRABHBIR SINGH MANN

Introduction

Biosocial, as a general term in common parlance, is used in various social sciences. However, it has yet to be defined in a definite or comprehensive manner. Through a broad spectacle, 'Biosocial' has been described as a comprehensive notion supporting the vigorous and collaborative interplay between biological experiences and social correlation, comprising the actions of human buildout throughout life¹. Historically, criminology has denigrated biological viewpoints despite its scientific diligence. However, of late, there is an increase in criminologists who are coalescing the fields of biological and environmental factors in their indagation². Unlike other theories that form their basis on biological factors and pass over to environmental factors, biosocial theory in criminology is an advanced discipline and acknowledges the significance of both biological and environmental factors. This is supported by abundant empirical research, which divulged that all human behaviour is arising out of environmental and biological factors functioning separately and correlatively³. There are criminologists who acknowledge the significance of both biological and environmental factors in understanding human behaviour. However, not many of these criminologists actually apply this integrated approach in practical applications or real-world contexts⁴. Biosocial criminology is an incipient discipline of criminological research, seeking to amalgamate knowledge and mechanisms from evolutionary sciences, neuroscience, and genetics into the research about crime⁵. Biosocial theory in criminology tries to explain cases involving crimes and emphasises on

¹ Harris, K.M. and McDade, T.W., (2018). The biosocial approach to human development, behaviour, and health across the life course. *RSF: The Russell Sage Foundation Journal of the Social Sciences*, 4(4), pp.2-26.

² Wright, J.P. and Boisvert, D., (2009). What biosocial criminology offers criminology. *Criminal Justice and Behavior*, 36(11), pp.1228-1240.

³ Beaver, K., (2017). *Biosocial theories of crime*. Routledge.

⁴ Ibid.

⁵ Treiber, K., (2017). Biosocial criminology and models of criminal decision making. *The Oxford handbook of offender decision making*, 6, p.87.

ascertaining whether certain factors have contributed to the criminal act. It posits that it is not only the social and environmental factors which affect criminal conduct but the biological factors that affect it, too. It is supported by studies which indicate that interactivity of biological and social factors influences the development of criminal behaviours in an individual. Furthermore, the biosocial theory has been defined as the confluence of various disciplines with criminology in order to establish itself as the potential extensive space for scientific criminology⁶. For example, a person born from a complicated labour when growing up had a troublesome childhood at home might be more likely to have a criminal propensity, along with factors like genes, neurotransmitters, health risks and neuropsychology influencing his criminal behaviour. In this essay, we will delve into the evolution of biosocial criminology, examining its sociohistorical origins, core assumptions, and potential transformative influence on criminal justice practices. By exploring the historical context and core principles of biosocial criminology, we will better appreciate the intricate web of factors influencing criminal behaviour and how this understanding may shape the future of criminological research and policy.

Sociohistorical Context

Biological theory in criminology was accepted in the late 19th century and early 20th century in the United States of America, but due to eugenicists exploiting the research, it began to be detested in the field. In recent times, it has been able to recover, and Cesare Lombroso is attributed with publicising the biological theory in 1876⁷. His theory became contentious in Europe, where Charles Goring criticised Lombroso and found that there is “no such thing as an anthropological criminal type”⁸, but quite the different happened in the United States, where it became well-liked⁹. For decenniums, criminology has been influenced by political and sociological perspectives. Discoveries from such fields must not be repudiated, but standing solo, they do not provide a concluded evaluation of the contributions to the field of criminology¹⁰. The data being produced from various fields of behavioural genetics, psychology, and endocrinology stipulate that

⁶ Carrier, N. and Walby, K., (2014). PTOLEMIZING LOMBROSO THE PSEUDO-REVOLUTION OF BIOSOCIAL CRIMINOLOGY. *Journal of Theoretical & Philosophical Criminology*, 6(1).

⁷ Berryessa, C.M. and Raine, A., (2018). Neurocriminology. In *The Routledge Companion to Criminological Theory and Concepts* (pp. 78-82). Routledge.

⁸ Goring, C., (1913). *The English convict: A statistical study*. HMS. p.370

⁹ Bedoya, A. and Portnoy, J., (2022). Biosocial Criminology: History, Theory, Research Evidence, and Policy. *Victims & Offenders*, pp.1-31.

¹⁰ Fishbein, D.H., (2017). Biological perspectives in criminology. In *Biosocial Theories of Crime* (pp. 3-48). Routledge.

biological factors form a remarkable part in the instigation of antisocial behaviour¹¹. Even though biosocial criminology does not have a long history, new progress in technologies has made it easier to acquire data for the exploration of the biosocial questions¹². Conjoined with research purposing that antisocial behaviour is accredited to genetic factors has encouraged criminologists to investigate how both environmental and biological factors influence behaviour¹³. But still, in modern times, biosocial theories are met with doubt in criminal justice and criminology. The biological theory came to its present importance in the last decade, where to criminologists, it became understandable that the sole environmental viewpoint on the origination of crime cannot be contemplated as rigorously valid. One of the reasons is that these theories have been influenced by political correctness, which reduced their practicable merit considerably. It became clear that people's proclivity to have a social life or having antisocial urges which might lead to crime are predetermined by evolutionary selection, and the circumambient environmental and socioeconomic factors have an effect on the shaping of self-identity of people. Hence, it would not be wrong to put forward that external factors play an important role in engender criminal tendencies.

Core assumptions

Biosocial criminology operates on a set of core assumptions that underpin its approach to understanding criminal behaviour. These assumptions form the foundation of the discipline and shape the methodologies and perspectives used in this multidisciplinary field. The first one is Behaviour and Molecular Genetics. It suggests that behaviour is affected by genes when it comes to the interplay with environmental factors and indicates the idea that the consequences of the environmental factors on a phenotype are based on the genetic structure of an individual¹⁴. Second is the Evolutionary Psychology Perspective, which presents a strong consolidative viewpoint on antisocial and criminal conduct¹⁵. Third the Neuroscience Perspective, and fourth is the Reward Dominance Theory, which describes why low serotonin is connected to delinquent acts and is sported by test prognosis that pubescent psychopaths are hardly acquiescent to rewards and

¹¹ Ibid.

¹² Wells, J. and Walsh, A., (2019). Biosocial theories in criminology. In *Oxford Research Encyclopedia of Criminology and Criminal Justice*.

¹³ Ibid.

¹⁴ Saunders, G. and McGue, M. (2020) "Behavioral and Molecular Genetics," in Wright, A. G. C. and Hallquist, M. N. (eds) *The Cambridge Handbook of Research Methods in Clinical Psychology*. Cambridge: Cambridge University Press (Cambridge Handbooks in Psychology), pp. 136–152. doi: 10.1017/9781316995808.015.

¹⁵ Quinsey, V.L., (2002). Evolutionary theory and criminal behaviour. *Legal and criminological psychology*, 7(1), pp.1-13.

unsatisfactory in passive avoidance. In research, forty male pubescent juvenile offenders were grouped into non-psychopaths and psychopaths by implementing cluster analysis. The results supported the viewpoint that psychopaths mostly concentrated on the likelihood of reward under the stipulation of different inducements and when adequately prompted, they have the ability to improve their performance¹⁶. Fifth, is the Prefrontal Dysfunction Theory, which suggests that the frontal lobes of criminals do not work in the same manner as they do for most people, mainly in terms of holding back actions that harm others¹⁷. The theory elucidates that why offending has been connected to the damage of the frontal lobe and abnormal brain waves¹⁸. Behavioural genetic research under biosocial criminology attempts to recognise the comparative contributions of genetic and environmental factors to the observations in a behavioural denouement. However, a common approach is to scrutinise the similarities between identical twins and collate it with similarities noticed between fraternal twins¹⁹. Such studies provide understanding as to how much difference and antisocial behaviour is ascribed to environmental factors and how much is ascribed to genes²⁰. It also talks about neurocriminology, which connects the biosocial field by describing how biological and environmental factors can impact each other, which factors can alter the functioning of the brain and how these factors do so²¹. These core assumptions are interrelated and collectively contribute to the comprehensive understanding of criminal behaviour within biosocial criminology. They illuminate the intricate connections between genetic, environmental, evolutionary, and neurological factors in shaping human behaviour.

Biosocial criminology encompasses many elements which criminology is lacking. Firstly, it must shift from punishment and deterrence to prevention²². Secondly, it should shift social factors to the physical environment, and finally it should amalgamate social and biological factors for a biosocial field of learning²³. Criminal conduct is not fully abnormal and maladjusted behaviour. Therefore, biosocial findings in behavioural research are of specific interest to understand the abnormal behaviours²⁴. It includes both undetected and criminal behaviours, as they are injurious

¹⁶ Scerbo, A., Raine, A., O'Brien, M., Chan, C.J., Rhee, C. and Smiley, N., (1990). Reward dominance and passive avoidance learning in adolescent psychopaths. *Journal of Abnormal Child Psychology*, 18(4), pp.451-463.

¹⁷ Brower, M.C. and Price, B.H., (2001). Neuropsychiatry of frontal lobe dysfunction in violent and criminal behaviour: a critical review. *Journal of Neurology, Neurosurgery & Psychiatry*, 71(6), pp.720-726.

¹⁸ Ibid.

¹⁹ Barnes, J.C. and Boutwell, B.B., (2015). Biosocial criminology: The emergence of a new and diverse perspective. *Criminal Justice Studies*, 28(1), pp.1-5.

²⁰ Ibid.

²¹ Ibid.

²² Jeffery, C.R., (1978). Criminology as an interdisciplinary behavioral science. *Criminology*, 16, p.149.

²³ Ibid.

²⁴ Beaver, K., (2017). *Biosocial theories of crime*. Routledge.

to people affected by the environment they live in, as individuals are not genetically criminal and neither do they, all of a sudden, become homicidal psychopaths²⁵. It is linked to antisocial behaviour, for example antisocial children having a greater risk of adapting problems in the society²⁶. In summary, it is emphasising the idea that behaviour is influenced by various factors, not solely genetics, and that it encompasses a range of behaviours, including those that are not necessarily criminal. It highlights the connection between environment, behaviour, and societal consequences while rejecting the notion of inherent genetic criminality. It is also noticed that people who exhibit criminal behaviour also demonstrate troubles in other aspects of life, like unemployment, usage of drugs, heavy consumption of alcohol and unstable living standards²⁷.

Biosocial theory and explanation of crime

The biosocial theory in criminology is an expanding field of multidisciplinary studies indicating definitive statistical relationships connecting a broad scope of biological factors and delinquent behaviour²⁸. It includes various biomarkers including genetics, brain functions and structures, hormones, heart rate, neurotransmitters and factors related to complications during birth, development throughout childhood and health risks, and also includes neurological factors which have a direct connection to the decision-making by the criminals²⁹. Research exploring the functioning of the brain and its structure has indicated a connection between particular areas of the brain and criminal tendencies³⁰. Various chemicals have been directly or indirectly linked to antisocial and delinquent behaviour, for example, lead has been associated to an increased degree of psychopathy³¹, pubescent offending³² and violent crime, along with other psychophysiological factors like that of resting heart rate and involuntary arousals, are seen as factors of future delinquent and criminal behaviour³³. The biosocial theory helps in the explanation of criminal and delinquent acts by various ways. First, there is undeniable proof that antisocial behaviour which constitutionally incorporates criminal and delinquent behaviour is the direct outcome of genetical

²⁵ Ibid.

²⁶ Ibid.

²⁷ Besemer, S., (2014). The impact of timing and frequency of parental criminal behaviour and risk factors on offspring offending. *Psychology, Crime & Law*, 20(1), pp.78-99.

²⁸ Treiber, K., (2017). Biosocial criminology and models of criminal decision making. *The Oxford handbook of offender decision making*, 6, p.87.

²⁹ Ibid.

³⁰ Ibid.

³¹ Wright, J.P., Boisvert, D. and Vaske, J., (2009). Blood lead levels in early childhood predict adulthood psychopathy. *Youth Violence and Juvenile Justice*, 7(3), pp.208-222.

³² Needleman, H., (2004). Lead poisoning. *Annual review of medicine*, 55(1), pp.209-222.

³³ Fox, B., (2017). It's nature and nurture: Integrating biology and genetics into the social learning theory of criminal behavior. *Journal of Criminal Justice*, 49, pp.22-31.

and environmental factors. In detail, genetical impact explains almost one half of the variance in delinquent and antisocial behaviour, while the other half of the variance can be elucidated by environmental factors. Moreover, the amalgamation of genes and environmental factors, via G x Es and rGEs, incline to have more impact on delinquent behaviour than the sole influence of each factor, for example, peer interactivity which forms an important role to social learning theory³⁴, is highly affected by genetic factors³⁵. Biosocial criminology and its explanation of crime have been accepted in various case laws by courts. In the case of *James v. Ryan* (2012)³⁶, the Ninth Circuit suggested that early childhood trauma might have ruinous and permanent effects. It was noted by the court that trauma and child victimisation have an impact on the mental development of a child and that feelings of terror, panic and abandonment during childhood can have effects on adult behaviour. In *People v. Beeler* (1995)³⁷, the defendant was sentenced to death for first-degree murder and armed burglary but introduced family members and medical experts who testified that he was subjected to extreme mental, verbal, physical and sexual abuse by his stepmother. A psychologist also testified that extreme abuse was caused to the convicted during his childhood and that he suffered from mental disorders including schizophrenia. Similarly, in *Poindexter v. Mitchell* (2006)³⁸, the court noted that if the defence attorney had conducted a better investigation, it would have constructed that defendant's problematic upbringing and developed psychological issues because of trauma were a direct cause for his behaviour which resulted in the triple murder. In the case of *United States v. Hinckley* (1981)³⁹, even though John Hinckley Jr. had attempted to assassinate President Ronald Reagan, lawyers produced a tomographic X-ray scan of his brain, which suggested shrinkage in his brain and enlarged ventricles, which revealed a mental defect. Even though the prosecution argued that the scans looked normal, he was found not guilty. Finally, in the case of *People v. Weinstein* (1992)⁴⁰, the defendant returned home and strangled his wife and then threw her out from the 12th-story apartment. But he had been complaining of headaches, whereby when medically checked, they found a large cyst on the prefrontal cortex, part of the brain which is responsible for impulse control. Although, it could not be suggested as to how much the cyst had contributed to the homicide, but the neuroscientific evidence as defence was strong

³⁴ Akers, R.L. (1998). *Social learning and social structure: a general theory of crime and deviance*, Northeastern University Press.

³⁵ Schwartz, J.A., (2014). *Integrating mainstream criminological theory into the biosocial perspective: An empirical analysis* (Doctoral dissertation, The Florida State University).

³⁶ *James v. Ryan* (2012) 679 F.3d 780 9th Cir.

³⁷ *People v. Beeler* (1995) 891P.2d153 Cal.

³⁸ *Poindexter v. Mitchell* (2006) 454 F.3d 564 6th Cir.

³⁹ *United States v. Hinckley* (1981) 525 F. Supp.1342

⁴⁰ *People v. Weinstein* (1992) 591 N.Y.S.2d 715, 156 Misc.2d 34

and the defendant's plea was upheld. A study showcased that, offenders who had relapsed into homicide had parents with five times the risk for any crime without notable risk for violent criminal acts⁴¹. The results indicated towards the first evidence of transference of crime covering three generations and the violent offenders having more possibility of crime among parents⁴². In another study, based on qualitative research exploration, whose aim was to validate or refuse the cause-effect connection between the participant's polymorphic gene MAOA in their DNA and the increased probability to take part in aggressive or delinquent behaviour, Hart and Marmorstein observed ninety thousand participants, which were high school students, after obtaining the data and its connection to the aim of the study, the researchers were able to corroborate the plausibility of the hypothesis⁴³.

In the modern context, biosocial theory continuous to evolve and adapt to the everchanging landscape of criminology and criminal justice. It remains a vibrant field of study, with ongoing research uncovering new dimensions of the interplay between biology, genetics, and crime. As contemporary society faces complex challenges related to crime and antisocial behaviour, biosocial theory provides a lens through which we can better comprehend the underlying causes and explore innovative solutions.

Limitations

Opprobrium of biosocial criminology are prompted due to various reasons. While a few of them are due to scientific calibre of biosocial research studies, others are due to the characteristic that biosocial theory in criminology incites oversimplification⁴⁴. It promotes different stages of determinism and accepts atheoretical empiricism⁴⁵. While for few researchers and scholars, including those who have held up their research assertions and work on propositions which refuses measurement, classification and simplification, biosocial theory is seen as a grave menace to the philosophical paradigm of such researchers⁴⁶. Throughout the research, Carrier and Walby blame biosocial criminology of imagining that it works with impeccable data proposing that academics

⁴¹ Putkonen, A., Ryyänen, O.P., Eronen, M. and Tiihonen, J., (2007). Transmission of violent offending and crime across three generations. *Social Psychiatry and Psychiatric Epidemiology*, 42(2), pp.94-99.

⁴² Ibid.

⁴³ Hart, D. and Marmorstein, N.R., (2009). Neighborhoods and genes and everything in between: Understanding adolescent aggression in social and biological contexts. *Development and Psychopathology*, 21(3), pp.961-973.

⁴⁴ Walsh A, Wright JP. (2015) Biosocial criminology and its discontents: A critical realist philosophical analysis. *Criminal justice studies*. Jan 2;28(1): pp.124-40.

⁴⁵ Ibid.

⁴⁶ Ibid.

of biosocial perspective are unaware of the restrictions of the data⁴⁷. They also blame biosocial criminology of tolerating etiology, disregarding norm-making and ‘a constructivist epistemology, de-ontologizing crime’⁴⁸. In the case of *Mobley v. The State* (1995)⁴⁹, where the accused walked into a Domino’s Pizza to rob and when he got the money, he shot the manager of the store, later in the Court, his first line of action was to present evidence that tried to reason that his action were caused due to his genes, and pointed out to a Dutch study, which showed that men had unprovoked violence, his lawyer had found a similar pattern among his other male relatives, including violent behaviour and criminal convictions. The court denied the defence motion and noticed that even if Mobley had same genetic variants it would still not indicate that he had no substantial capacity to think about his wrongful acts. Hence genes don’t make us do anything, other than in the cases of extreme mental health or defect, we are legally bound for our behaviour. Similarly, it is argued that, from the data and research from the National Longitudinal Survey of Youth, biosocial theory of Moffitt is tested over various neighbourhoods and racial surroundings, where the result shows that the biosocial interplay happened only to predict offending among non-whites in underprivileged neighbourhoods. It stated that macrolevel constructional factors seems to lessen the impact of family and individual risks⁵⁰. It also suggested that the non-whites live in those neighbourhoods which are environmentally different from those where poor whites live, hence the perspective worsens due do their differences at individual level and family disadvantages⁵¹. As claimed by the researchers in criminology, the continued growth of biosocial criminological data and the expansion of biosocial theories is vital to the development of this viewpoint⁵². Lately, some have asserted that biosocial theory can advance the studies of criminology from one based solely on environmental factors to one that highlights prevention and understands crime as a public health issue⁵³. However, hostility and disagreement surrounds the biosocial approach as it includes genotyping criminals for genetic risks to explain the cause of antisocial behaviour and in wrong hands it can be quite dangerous and lead to preferential treatment of certain genes⁵⁴.

⁴⁷ Carrier, N. and Walby, K., (2014). PTOLEMIZING LOMBROSO THE PSEUDO-REVOLUTION OF BIOSOCIAL CRIMINOLOGY. *Journal of Theoretical & Philosophical Criminology*, 6(1).

⁴⁸ Ibid.

⁴⁹ **Mobley v. The State** (1995) 265 Ga. 292 S94P1271

⁵⁰ Turner, M.G., Hartman, J.L. and Bishop, D.M., (2007). The effects of prenatal problems, family functioning, and neighborhood disadvantage in predicting life-course-persistent offending. *Criminal Justice and Behavior*, 34(10), pp.1241-1261.

⁵¹ Ibid.

⁵² Guy, R. and Chomczyński, P.A., (2018). Bioethics and biosocial criminology: Hurdling the status quo. *Ethics, Medicine and Public Health*, 7, pp.95-102.

⁵³ Ibid.

⁵⁴ Ibid.

Conclusion

The principal obstacle that needs to be overcome for the biosocial perspective in criminology to grow and evolve, revolves around the deficit of educational courses which are dedicated only to biosocial criminology⁵⁵. The optimum contribution which biosocial perspective can make to the field of criminology is to gauge the apprehension of antisocial behaviours, but the biosocial perspective, even in its short period of eminence, has already made notable contributions in the field⁵⁶. Firstly, by evincing genetic influences that are inculcated in the cause of delinquency and crime, and secondly, by throwing light on how the same environmental factors have very little influence and non-shared environmental factors constitute up to half of the antisocial characteristics⁵⁷. Including evolutionary propositions while forming the social theories of criminology can result in a paradigm for comprehending criminological science⁵⁸. Understanding the theories from a diverse set of fields of studies is of great significance to biosocial criminology and so is amalgamating all of them into a complete holism⁵⁹. Biosocial criminology is not a field which is inclusive of all the perspectives in criminology and is definitely not a research area which is solely concerned with biological factors on criminal behaviour⁶⁰. In fact, it is quite the opposite, as biosocial criminology automatically supposes that human conduct is the result of a convoluted disposition of biological and environmental factors⁶¹. Therefore, biosocial theory in criminology rests on the idea that behaviour is not the result of the effects of biological factors solely and neither it is affected only by the environment⁶². Biosocial criminology has developed as a strong field for categorising scientific research into a wide, biologically suffused criminological theory and the paradigm seems to be obtaining momentum⁶³. The significance of this field is profound, not only for academics and researchers but for policymakers, law enforcement, and society at large. The potential to better understand the origins of criminal behaviour and to develop more effective strategies for prevention and rehabilitation is

⁵⁵ Beaver, K.M., Nedelec, J.L., da Silva Costa, C. and Vidal, M.M., (2015). The future of biosocial criminology. *Criminal Justice Studies*, 28(1), pp.6-17.

⁵⁶ Ibid.

⁵⁷ Ibid.

⁵⁸ Salas-Wright, C.P. and Todric, J., (2015). Alcohol and drug misuse as a biosocial source of crime.

⁵⁹ Ibid.

⁶⁰ Barnes, J.C. and Boutwell, B.B., (2015). Biosocial criminology: The emergence of a new and diverse perspective. *Criminal Justice Studies*, 28(1), pp.1-5.

⁶¹ Ibid.

⁶² Ibid.

⁶³ Wright, J.P. and Cullen, F.T., (2012). The future of biosocial criminology: Beyond scholars' professional ideology. *Journal of Contemporary Criminal Justice*, 28(3), pp.237-253.

a compelling prospect. As biosocial criminology gains momentum, it has the potential to reshape our understanding of criminal behaviour and, ultimately, contribute to a safer and more just society.

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