

Critically analyze the biological theories of criminality.

## INTRODUCTION

The biological theories of criminality rose to prominence during the positivist era of the subject. During this era, the leading figures transformed this subject into a scientific one. Prominent names include; Cesare Lombroso, William Sheldon and so on. This era's theory are sub-divided into two categories

## BIOLOGICAL POSITIVISM

### GENETIC

### BIOCHEMICAL

- |   |                                 |
|---|---------------------------------|
| → Cesare Lombroso's Theory of Atavistic Man | → Neurotransmitter Theory       |
| → Somatotypology - William Sheldon          | → Central Nervous System theory |
| → Evolutionary Theory                       | → Hormones / Testosterone       |
| → Genetic Theory                            | → Neurobiological Theory        |
| → Physiognomy / Phrenology                  | → Autonomic System Theory       |

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# GENETIC THEORIES OF THE — BIOLOGICAL POSITIVIST — ERA

## a) Cesare Lombroso's - Theory of Atavistic Man

Cesare Lombroso, in the year 1880, specified the anatomical, genetic abnormalities of the criminal. In 1876, he published *The Criminal Man*; which included the examination of almost '400 non-criminal Italian soldiers and 90 lunatics.' He referred to criminals as throwbacks to a more primitive stage of development - atavism. He associated the criminals with lower primates as people whose mental and biological development wasn't up to par. For him, the criminal was altogether an entire different species.

Moreover, he was of the view that the criminal was born and not made. His ideas from a contemporary standpoint are generally dis-regarded and discredited. However, at the time his ideas were considered as revolutionary. Some of his descriptions of criminals are as follows:

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- The distance between are no more than 3mm
- Oblique eyelids and projection of lower face and jaw were also traits of thieves and other criminals.

## 1b) Somatotypology - William Sheldon

William Sheldon in 1949, examined around 200 men in Boston. He looked at the body types or somatypes. These are given below.

### Somatotyping

Endomorph	Mesomorph	Ectomorph
Soft and Round, Short tapering, limbs, velvety skin	Muscular, large trunk, heavy chest, large wrists and hands	Lean, fragile, delicate body, droopy shoulders, little body mass.

He concluded that mesomorphs were generally more highly characterised by traits particularly suitable to the commission of acts of aggression.

He also noted that delinquent males were found to be low in ectomorphy and high in mesomorphy.

Later, studies by Eleanor and Sheldon Glueck confirmed that the number of delinquents, in their study, contained more mesomorphs than the non-delinquents one. However, the rise of sociological positivism and Edwin Sutherland led to this theory being sidelined.

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### c) Evolutionary Theory

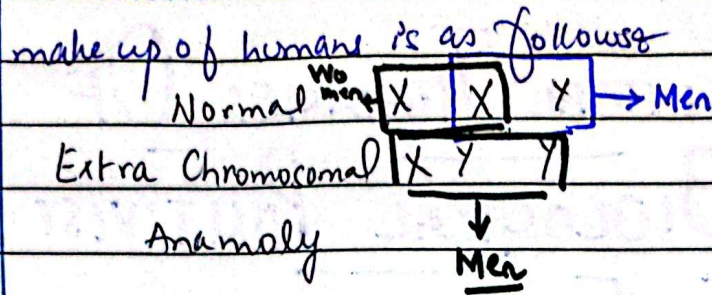
Evolutionary theory, according to some criminologists, outlines that the human traits that pass produce violence and aggression are produced through the long process of human evolution. It contends that the competition of resources, which were scarce, has influenced and shaped human species. Behaviour patterns are inherited and impulsive behaviour is passed from generation to generation. 3 main theories that fall under its domain:

	Ruchton's Theory of Race & Evolution	R/K Selection Theory	Cheater Theory
→	Human migration from Africa to Europe/Asia led to evolutionary adaptations such as increased brain mass and reduced aggression	This theory suggests that males with rapid reproduction traits are more prone to criminal behaviour while females are not	This theory claims that some men use deceit and criminal behaviour for sexual conquest that leads to anti social offspring.
→	This theory is criticized for its narrow and racially biased approach.		

### d) Genetic Theory: Y-chromosome Theory

Research in the 1960's, found a new configuration of chromosomes in the male makeup. This make-up included an extra Y-chromosome. Normally, the genetic

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This was named as the 'super' male syndrome'. Studies found that Arthur Shawcross - American Serial Murderer, possessed such a genetic make-up. Similarly in the UK and Denmark studies showed a small number of men possessing such genetic make-up.

### e) Phrenology / Physiognomy

Physiognomy and Phrenology are the study of the facial features and the contours of the human skulls respectively. Giambattista della Porta, an Italian physician is credited with sowing the (see) seeds of this field.

Della Porta contended that criminals have peculiar <sup>facial</sup> features that made them identifiable such as thieves had sharp eyesight and large lips and so on.

Later on, Austrian Physician Joseph Gall argued that the contours and size of the skull could tell alot about the criminal. He identified various parts in the brains of convicted thieves as the 'theft organ' and so on.

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# BIOCHEMICAL THEORIES OF THE BIOLOGICAL POSITIVIST ERA

1a)

## Neurotransmitter Theory

This theory contends that neurotransmitters are chemicals in the brain that enable electrical impulses within the brain to be transmitted and which form the basis of processing of information.

Some limited evidence contends that the following neurotransmitters have some link with anti-social behaviour:

- a) Dopamine
- b) Serotonin
- c) Norepinephrine

A meta-analysis by Raine indicated that people with less serotonin levels have been described as people with 'anti-social behaviour.'

However the complexities of the brain and relation of other factors (external) seem to complicate the findings.

## b) Central Nervous System Theory

The Central Nervous System comprises of the brain, and the spinal cord. In this, electrical signals are recorded, any disorganization in them may lead to recurrent seizures. A condition known as epilepsy.

A study done in prison found the prevalence of epilepsy to be 0.25% higher than the general population and. In America, this figure reached 2% in the prisons.

However as of now, recent studies show inconsistent results, with no strong evidence connecting <sup>abnormal</sup> brain activity to criminal behaviour.

## c) Hormones / Testosterone Theory

This study explores the correlation of hormones and testosterone to violence and aggression. This research was firstly done on animals and later on humans.

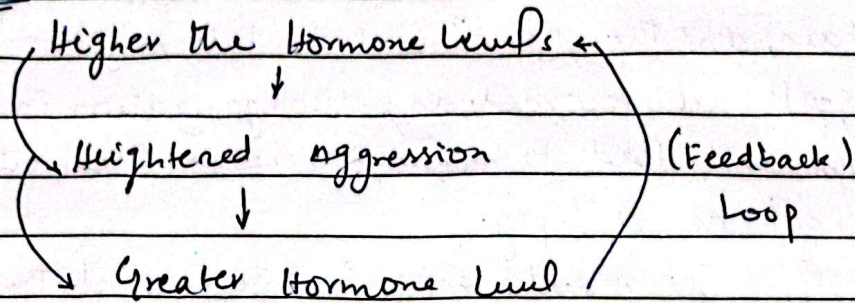
A study was done on '4000 military personnel' and it found a link between testosterone levels and adult offending. However, once the 'social factors' were controlled, the link was diminished.

All in all, there were several potential difficulties with data collection and research in this, but the following was drawn up.

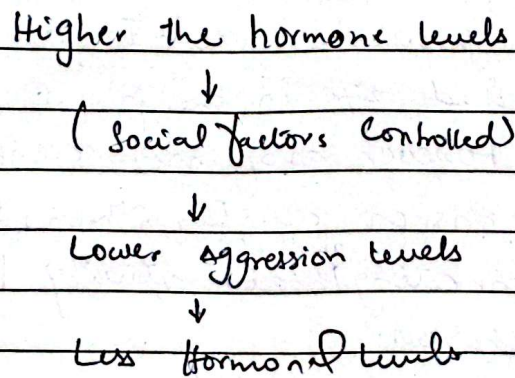
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'Levels of Hormones and Aggression work  
in both ways.'

1st Case



2nd Case



## d) Neurobiological Theory

This theory comprises of a broad framework that examines how various biological processes in the brain and nervous system influence behaviour. It includes the study of a wide range of factors

- a) Brain Structure and Function
- b) Neurotransmitters
- c) Hormones and their influence
- d) Genetic Factors
- e) Overall Neural Health and Connectivity



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This theory groups various studies and biological theories and investigates the effect of these factors on behaviour especially on criminal behaviour.

However, this theory has also been subject to criticism as it oversimplifies its findings attributing it to solely biological factors. Furthermore, the complexity of the brain and the effect of external factors such as environmental also contribute to the weakening of this theory.

### e) Autonomic System Theory

The autonomic nervous system (ANS) regulates the involuntary functions such as breathing, <sup>heart</sup> rate and etc. It is commonly measured through the lie detectors, these track arousal levels through sweat glands. A higher arousal level is linked to person lying.

Individuals with low (ANS) responsiveness need a strong stimuli to react. This has been often linked to delinquent behaviour. Some studies suggest that anti-social individuals are characterized by lower arousal and may seek stimulation and may exhibit less fear.

However, the criticism of this theory are over the reliability of lie detectors, unclear cause-and-effects relationships and over reliance on biological factors.

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## CONCLUSION

Biological theories of criminology have tried to explore how biological factors both biochemical and genetic play a role in influencing behaviours of individuals. These tried to explain the intricate complexities of the brain, genetic make-up of criminals and explored why they are so.