

Crime and Deviance

LO1 – DESCRIBE BIOLOGICAL THEORIES OF CRIMINALITY		
Assessment Criterion	Content	Amplification
AC1.1 Describe Biological Theories of Criminality	Criminal Behaviour <ul style="list-style-type: none"> Genetic Theories Physiological Theories 	You should have knowledge and understanding of: <ul style="list-style-type: none"> ✓ Jacob's XYY Theory ✓ Twin and Adoption Studies ✓ Lombroso's Physiological Theory ✓ Sheldon's Type Theory. ✓ Brain Abnormalities

Key Term:

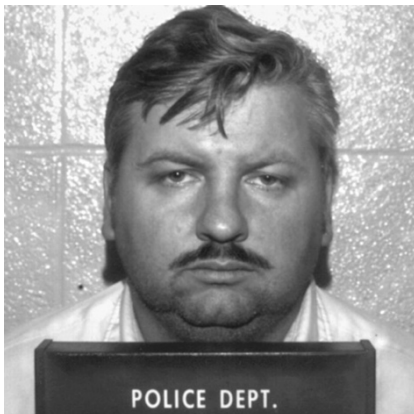
THE NATURE-NURTURE DEBATE

– THE DEBATE ABOUT THE ROLE OF BIOLOGICAL INFLUENCES (AS OPPOSED TO ENVIRONMENT) IN CRIMINALITY IS AN EXAMPLE OF THE NATURE-NURTURE DEBATE

GENETIC THEORIES

Jacobs XYY Theory – Super Males

This theory suggests that criminality might be caused by chromosomal abnormalities in cells of criminals. We know that chromosomal abnormalities can affect behaviour, for example, Down is caused by the presence of a third copy of chromosome 21.



XYY men, sometimes called *super males*. Some studies suggest XYY men are over-represented in the prison population. There are 15 sufferers per 1,000 in prisons and one per 1,000 in the general population. The serial killer John Wayne Gacy (left) is said to have XYY syndrome. He sexually assaulted, tortured, and killed at least 33 men in the USA.

BIOLOGICAL THEORIES FOCUS ON THE

IDEA THAT PHYSICAL CHARACTERISTICS MAKE SOME PEOPLE MORE LIKELY TO COMMIT CRIME THAN OTHERS. SUCH CRIMINAL TENDENCIES CAN BE GENETIC AND THEREFORE INHERITED. HENCE, IT COULD BE SAID THAT THE PERSON IS BORN BAD.

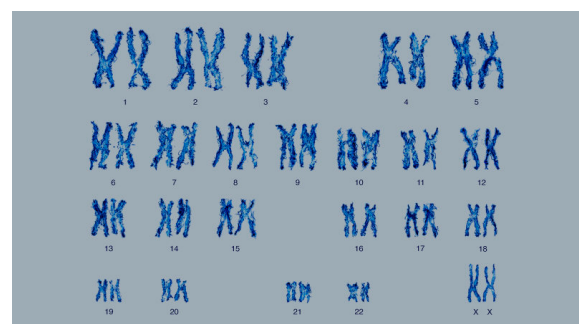
CHROMOSOMES ARE STRUCTURES

FOUND IN ALL CELL NUCLEI, THEY CARRY THE DNA, WHICH IS THE GENETIC INFORMATION THAT ALL LIVING THINGS ARE BASED ON. HUMANS HAVE 22 PAIRS OF CHROMOSOMES PLUS THE TWO SEX CHROMOSOMES (XX IN FEMALES AND XY IN MALES) FOR A TOTAL OF 46.

RESEARCH TASK ON XYY THEORY

- SUMMARISE BRIEFLY WHAT IS MEANT BY XYY THEORY
- WHAT EVIDENCE IS THERE FOR THIS THEORY?
- ARE ANY NOTABLE CRIMINALS WHO HAVE HAD THIS CHROMOSOMAL ABNORMALITY
- WHAT ARGUMENTS CAN BE MADE AGAINST THIS THEORY

Human Chromosomes



EVALUATION

STRENGTHS OF XYY THEORY

- ✔ There is research which supports Jacob's XYY theory – some studies that suggest XYY men are over-represented in the prison population. There are 15 sufferers per 1,000 in prisons but only one per 1,000 in the general population.
- ✔ Case histories of famous criminal also support XYY theory too. The serial killer John Wayne Gacy is said to have XYY syndrome. Gacy was extremely violent and sexually assaulted, tortured and killed at least 33 men in the USA.

LIMITATIONS OF XYY THEORY

- ✘ However, evidence to support XYY theory is not conclusive – Theilgaard (1984) researched XYY men and compared them XY men. He found the characteristic of aggression was not associated with the XYY men.
- ✘ Also, studies have found that genetic abnormalities are widespread throughout the general population and therefore do not completely explain aggression.

What do we mean by the **nature** or **nurture** debate – how does this relate to the study of crime AND punishment?

What is a **chromosome**, how many **pairs** of chromosome does a human have?

Possible Questions

- Describe Jacob's XYY Theory of criminal behaviour (6 Marks)
- Evaluate the one Jacob's XYY Theory of criminal behaviour (9 Marks)

TWIN STUDIES?

Twin studies support the idea that criminality may be inherited (runs in families). Identical twins are **monozygotic**, that is both of the twins develop from the same fertilised egg. Non-identical (fraternal) twins are **dizygotic**, that is the develop from two separate eggs which are fertilised by two different sperm.

	Monozygotic Twins	Dizygotic Twins
AKA	Identical Twins	Fraternal Twins or Non-Identical Twins
Genes Shared	100%	50%

MONOZYGOTIC (IDENTICAL) TWINS ARE GENERALLY VERY SIMILAR BUT **DIZYGOTIC (NON-IDENTICAL OR FRATERNAL)** CAN BE VERY DIFFERENT. IN FACT, THEY ARE NO MORE SIMILAR THAN ANY OTHER PAIR OF SIBLINGS. THEY MAY NOT LOOK THE SAME AND CAN BE DIFFERENT GENDERS

Why Study Twins?

Twins present criminologists with a unique opportunity to study the influence of nature (genes) and nurture (environment). MZ and DZ twins usually grow up in the same household, with the same family, at the same time. They often go to the same schools and share some of the same friends. In short, their environment is very similar. However, there is a difference, MZ twins are 100% genetically identical, whereas DZ twins only share 50% of their genes.

These boys are identical or monozygotic twins (MZ) - they share 100% of the same genes. The girls on the other hand are dizygotic (DZ) and only share only 50% of their genes.



If the boys are more similar than the girls on some measure, that is likely to be because of the extra genes by shared by both of them, as the amount of environment shared by both sets of twins is 100%

CONCORDANCE RATES – THE RATE OF AGREEMENT (MATCH) BETWEEN ON A TRAIT BETWEEN PAIRS OF TWINS – NORMALLY EXPRESSED AS A PERCENTAGE. THE CONCORDANCE RATES FOR MZ TWINS SHOULD BE HIGHER THAN DZ TWINS IF GENES PLAY A PART

TWIN STUDIES AND CRIMINALITY – ONE OF THE EARLIEST TWINS' STUDIES WAS REPORTED BY THE GERMAN PHYSICIAN JOHANNES LANGE (1929). HE FOUND THAT MZ TWINS SHOWED A MUCH HIGHER DEGREES OF CONCORDANCE FOR CRIMINAL BEHAVIOUR THAN DZ TWINS. CHRISTIANSEN (1977) ALSO STUDIED TWIN. HE FOUND THAT CONCORDANCE RATES OF 35% FOR MZ TWINS AND ONLY 13% FOR DZ TWINS IN 3,586 PAIRS OF TWINS.

Adoption Studies

Another way to examine the influence of genes and environment is to look at what happens when children are adopted. Adopted children have a genetic link with their biological parents but (nature) but the environmental link (nurture) is broken as they grow up in a new family.

RESEARCH SUPPORT FROM ADOPTION STUDIES – ONE STUDY HUTCHINGS AND MEDNICK (1975) LOOKED AT OVER 14,000 ADOPTED BOYS. THEY FOUND THAT A LARGE NUMBER OF THE BOYS WHO HAD CRIMINAL CONVICTIONS HAD BIOLOGICAL PARENTS WITH CRIMINAL CONVICTIONS.

EVALUATION

STRENGTHS OF TWIN STUDIES

- ✔ Christiansen looked at offending behaviour in identical (MZ) and non-identical twins. He found that the concordance rate was 33% for MZs and only 12% for DZs. This suggests that there is a strong genetic component in offending behaviour as MZ twins share the same environment and 100% of their genes, whereas DZ twins share the same environment but only 50% of the same genes. The difference between MZ and DZ twins must be attributable to their genetic make-up as their environments is the same.

Therefore, it seems reasonable to conclude that offending behaviour is at the very least partly inherited (due to genes).

LIMITATIONS OF TWIN STUDIES

- ✘ One issue with twin studies is that the assumptions that MZ and DZ twins differ only in their genetics maybe false. MZ twins are likely to look more similar than DZ twins and are likely to be treated in a very similar way. For example, they are usually dressed the same and given the same toys to play with. DZ twins on the other hand, may look quite different to each other, and may even be a different gender. MZ twins who tend to elicit special response based on their perceived similarity from those around them

This is important because it means that we cannot assume that offending behaviour is inherited on the basis of twin studies and must look to alternative methods (e.g. adoption studies) to sort this out.

STRENGTHS OF ADOPTION STUDIES

- ✔ Adoption studies are another way to examine the influence of genes and environment is to look at what happens when children are adopted. Adopted children have a genetic link with their biological parents (nature) but the environmental link (nurture) is broken as they grow up in a new family. If they are more similar to their birth family than their adopted family, then this must be because of genetic influences.

LIMITATIONS OF ADOPTION STUDIES

Adoption studies are not without problems, among them:

- ✘ The age of adoption may mean the adopted children have already been influenced by either their 'birth' parents or their foster environment. In addition, information about a biological family is not always available.

Activity 2: In the text boxes below, answer the following questions

In your own words – what is meant by a monozygotic and dizygotic twin

What is meant by **concordance** – why should MZ twins show more of this, than DZ twins?

What is an **adoption study** and why is this a good way to study **the biological basis** of criminality?

Summarise one study of twins and criminality and one study of adoption and criminality.

This image shows a full page of handwriting practice paper. It contains ten identical rows of horizontal guidelines. Each row is composed of three lines: a solid black line at the top, a dashed black line in the middle, and another solid black line at the bottom. These lines are evenly spaced across the entire page to help students learn letter height and placement. There is no text or other markings on the page.

Possible Questions

- Describe one genetic theory of criminal behaviour (6 Marks)
- Evaluate the one genetic theory of criminal behaviour (6 Marks)

Physical Type Theories

Cesare Lombroso's 'Atavistic' Theory

Cesare Lombroso wrote *L'uomo delinquente* (The criminal man) in 1876 setting out his view that offenders possessed similar characteristics to lower primates, and this could explain their criminality. He formulated his ideas at the time when Charles Darwin had recently introduced the theory of evolution. Based on this theory, Lombroso suggested that criminals are essentially throwbacks to an earlier species. He used the term atavistic to describe the physical appearance of criminals.

Atavistic Features Identified by Lombroso

- High cheekbones
- Flattened or upturned nose
- Low, sloped forehead
- Large ears
- Large jaw
- Long arms when compared to lower limbs

ATAVISTIC 'A TENDENCY TO REVERT TO AN ANCESTRAL TYPE (*ATAVUS* IS THE LATIN FOR ANCESTOR).

He believed you could tell what type of crime a person will commit due to the way they look. For example, a murderer had bloodshot eyes and curly hair whereas sex offenders had thick lips and ears that stuck out. Lombroso also suggested there were other aspects of a 'born criminal' including being insensitive to pain, using criminal slang, having tattoos and being unemployed.

LOMBROSO BASED HIS THEORY ON HIS OWN RESEARCH USING POST-MORTEM EXAMINATIONS OF CRIMINALS AND STUDYING THE FACES OF LIVING CRIMINALS. OVER THE COURSE OF HIS CAREER HE AND HIS CO-WORKERS EXAMINED OVER 50,000 BODIES. IN ONE PARTICULAR STUDY OF 383 CONVICTED ITALIAN CRIMINALS, HE FOUND THAT 21% HAD ONE ATAVISTIC TRAIT AND 43% HAD AT LEAST FIVE.

A 2016 STUDY CONDUCTED IN CHINA FOUND THAT FACIAL FEATURES DO GIVE CRIMINALS AWAY. 1,856 CHINESE MEN (HALF OF WHO HAD CRIMINAL CONVICTIONS) WERE ADDED TO AN ARTIFICIAL INTELLIGENCE PROGRAMME WHICH WENT ON TO IDENTIFY 83% CRIMINALS WITH ONLY 6% OF ALL MEN BEING INCORRECTLY IDENTIFIED. (WU ET AL, 2016)



Examples of physiognomy of criminals illustrated from *L'uomo Delinquente* (Criminal Man), 1876, by Cesare Lombroso.

FEMALE OFFENDERS

LOMBROSO BELIEVED PROSTITUTES WERE INDEFINABLE BY THEIR PHYSICAL CHARACTERISTICS

- HAD A SMALLER CRANIAL CAPACITY (SMALLER BRAIN)
- MORE LIKELY TO BE OBESE
- WERE SHORTER THAN AVERAGE
- HAD DARK HAIR
- WERE NOT 'UGLY'

William Herbert Sheldon associated body types with human temperament types. He claimed that a body type could be linked with the personality of that person. He says that a fat person with a large bone structure tends to have an outgoing and more relaxed personality while a more muscular body-typed person is more active and aggressive. A slim or scrawny person with thin muscles is usually characterized as quiet or fragile. He split up these body/personality types into three categories called *somatotypes*.

-
- The diagram illustrates three body types: Ectomorph, Endomorph, and Mesomorph. Each type is shown from a front and side view. Ectomorph is thin and lean. Endomorph is round and has a higher body fat percentage. Mesomorph is muscular and has a higher muscle mass percentage.

Activity 3 - In the textboxes below – using the text boxes to write a summary of Lombroso's and Sheldon physical type theories

[illegible]

EVALUATION

STRENGTHS OF LOMBROSSO'S THEORY

- ✔ Lombroso was the first person to give criminology scientific credibility. Before this time criminal behaviour was seen as something criminal chose to do, Lombroso challenged the idea that criminals were evil or even that they had a choice in whether they offended.
- ✔ There is research which supports Lombroso, for example: Wu et al, (2016) - found that facial features do give criminals away. 1,856 Chinese men (half of who had criminal convictions) were added to an artificial intelligence programme which went on to identify 83% criminals with only 6% of all men being incorrectly identified.

STRENGTHS OF LOMBROSSO'S THEORY

- ✗ Critics point out that not everyone with atavistic features is a criminal, in fact the majority are not. If atavistic features are the cause of criminality, then they should always be associated with criminal behaviour, and this simply is not the case.
- ✗ Lombroso ignored the reasons for criminal disfigurement and deformity; It may be that people from very difficult backgrounds, who we might expect to show a higher rate of criminality are also more likely to experience accidents, disease or malnutrition which could account for their appearance. Also, it is possible that some of them might be shunned by society and be forced into criminality in order to survive.

STRENGTHS OF SHELDON'S THEORY

- ✔ Sheldon's research was based on a reasonable sample size and importantly he used a control group. This means his methods were more reliable and scientific than Lombroso.
- ✔ Some studies (e.g., Putwain and Sammons) have confirmed the link between body build and criminality, although is not clear that this a direct causal link and the correlation is small. Glueck and Glueck (1956) found in their research that in a sample of delinquents, 60% were mesomorphs, while in a non-delinquent sample there were only 31%. These results are noteworthy and need to be explained.

LIMITATIONS OF SHELDON'S THEORY

- ✗ One problem with this theory is that people body's change. If there was a causal link between criminality and body shape people would commit more crime their body shape changed. This doesn't make any kind of sense.
- ✗ Criminality among mesomorphs even if it is real is probably much better explained by factors such as age, social class and education. Also, there are lots of examples of endomorph and ectomorph criminals, again the theory doesn't really stack up

Practice Questions

- Describe Sheldon's theory of criminality (6 Marks)
- Evaluate the Sheldon's theory of criminality (6 Marks)

EXAM PRACTICE

Jimmy, aged 22, has suffered from verbal and physical abuse for most of his life. This is because he has large ears, a large jaw and very long arms. Jimmy never knew his father and lived with his mother and her succession of boyfriends. Jimmy has recently undergone some medical tests which have revealed he has an extra Y chromosome. He has also been hanging around with local criminals and is due to appear before a local magistrates' court on a second charge of grievous bodily harm.

(a) Describe **one** physiological theory of criminality.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

(b) Analyse how **one** genetic theory of criminality may account for Jimmy's criminal behaviour.

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.