

THE BIOLOGICAL APPROACH TO PSYCHOPATHOLOGY

Introduction

The earliest approach to explaining the **causes** of abnormal behaviour was the '*demonological approach*'. This saw abnormal behaviour as being caused by 'demons' and 'evil spirits' possessing a person. According to this approach, the best way of **treating** abnormal behaviour was therefore to release these demons and spirits, by methods such as *trephining*.

In the eighteenth century ('*The Age of Enlightenment*'), this approach was abandoned as people began to see abnormal behaviour as a type of *illness* ('**mental illness**') rather than supernatural possession. In fact, the ancient Greeks had recognised that abnormalities such as epilepsy might be caused by brain disorders, but it was not until physiologists like von Haller and Greisinger argued that the **brain** played a crucial role in causing abnormal behaviour that the biological approach 'took off'.

The biological approach to the causes of abnormality

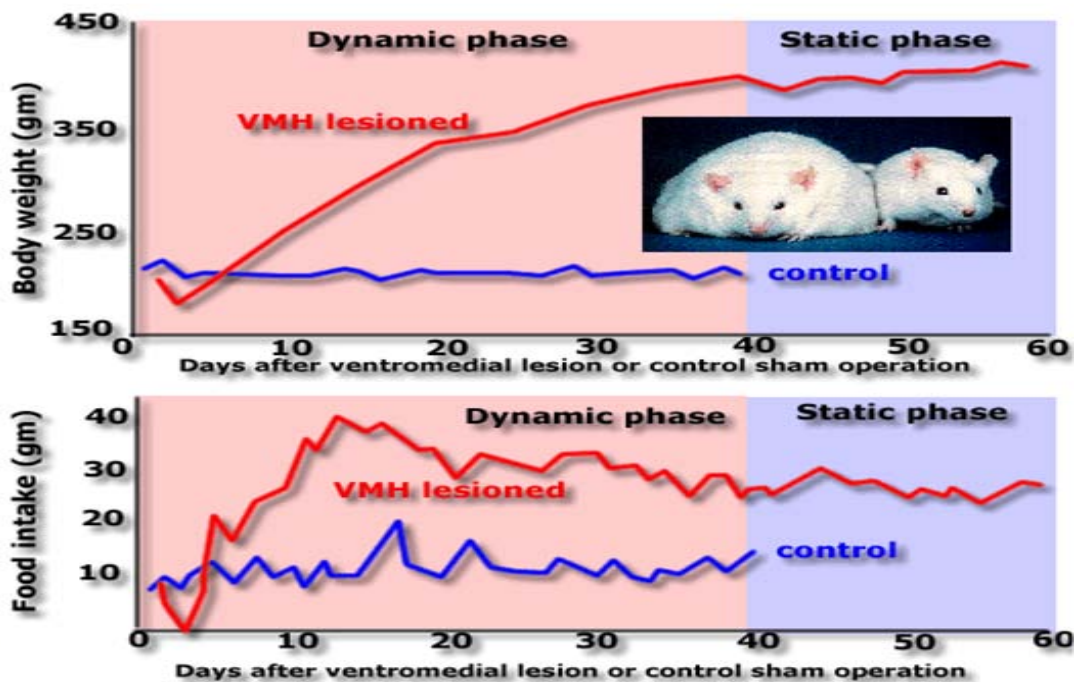
The biological approach sees abnormality as being caused by **physical factors**. The three physical factors are:

- (1) **Brain damage**
- (2) **Faulty regulation of brain biochemistry**
- (3) **Genetic factors**

Brain damage: Early support for the biological approach came from studies of patients suffering from a condition called '*general paresis of the insane*'. This condition is characterised by delusions of grandeur and mental deterioration. However, far from being caused by 'demonic possession', research showed that its causes were biological (it occurs if syphilis is left untreated - the syphilis bacterium makes its way to the brain and causes damage to it).

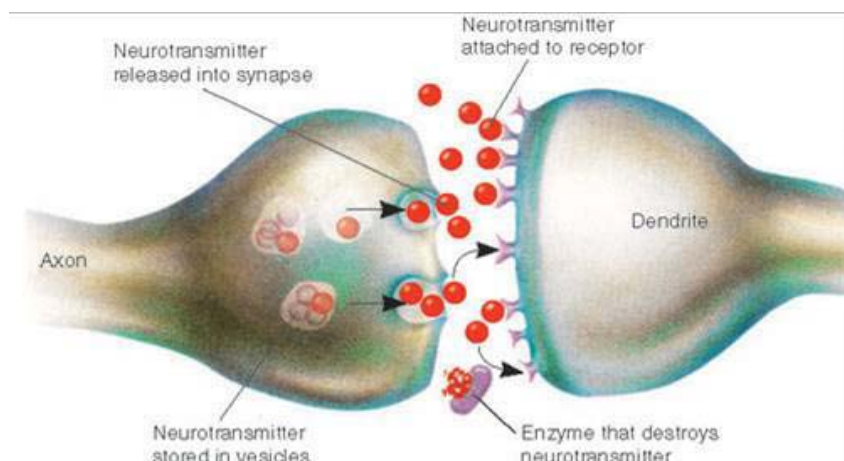
Brain damage has been implicated in several other conditions. For example, it is widely accepted that at least some cases of schizophrenia are caused by brain damage. This damage can occur at any time during life, and may even occur during foetal development, and manifest itself many years later in the form of a mental disorder. Likewise, there is

strong evidence to suggest that at least some cases of obesity may be caused by damage to the part of the brain that regulates eating behaviour.



When a part of the brain is damaged in a rat, it begins to overeat and becomes obese. The rat on the left has suffered this brain damage. The rat on the right is from the same litter, but has not suffered brain damage

Faulty regulation of brain biochemistry: Neurones in the brain ('brain cells') communicate with one another by means of chemicals called *neurotransmitters*. According to the biological approach, an imbalance of these is responsible for abnormal behaviours occurring.



Neurones ('brain cells') communicate using neurotransmitters

A good example of the faulty regulation of brain biochemistry as a cause of abnormality is *schizophrenia*. Research shows that there is a greater concentration of the neurotransmitter *dopamine* in schizophrenic brains than in non-schizophrenic brains. Researchers believe that it is this neurotransmitter that is responsible for people developing schizophrenia. Similarly, the brain's failure to regulate the neurotransmitters *serotonin* and *noradrenaline* has been suggested to be the cause of mood disorders (mania, depression, and bipolar disorder).

Genetic factors: It has been found that certain mental disorders (e.g. schizophrenia and bipolar disorder) tend to run in families. According to the biological approach, this is because genetic factors are involved in these disorders. Psychologists are particularly interested in *identical twins*, because they share 100% of their genes. So, if one of the twins develops a mental disorder, and genetic factors are involved in that disorder, then the other twin should develop it as well. For some disorders (e.g. bipolar disorder, Anorexia Nervosa), research has shown that this is often the case.



Identical twins, Samantha and Michaela Kendall both suffered Anorexia Nervosa

Evaluating the biological approach to the causes of abnormality

The biological approach to abnormality has many supporters, and is by far the most dominant model in psychiatry. The major strength of the biological approach is that research has shown that *some* mental disorders to seem to have a physical cause. For example, it is now widely accepted that some kinds of brain damage and the faulty regulation of brain biochemistry are involved in disorders such as schizophrenia, obesity, and certain mood disorders. It is also agreed that *none* of the

psychological approaches explain conditions like schizophrenia anywhere near as well as the biological approach.

However, the role played by genetic factors is less clear. For example, although a pair of twins might both develop the same mental disorder, we do not know if this is because they share the same genes or because they share the same *environments*. There are ways in which environmental influences can be controlled for, and when these ways are used there does seem to be 'reasonable' evidence for genetic factors playing a role in at least some mental disorders.

The major weakness of the biological approach is that whilst it explains the causes of some disorders extremely well, it does not explain the causes of *all* disorders. A good example of this is phobic disorders. There is no evidence that this disorder is caused by biological factors. Instead, phobic disorders are better explained by psychological approaches. In this case, the behavioural approach offers a much better way of explaining phobic disorders.

Another weakness is that the biological approach is **reductionist**. What this means is that biological psychologists assume that brain damage, brain biochemistry and genetic factors can provide a *complete explanation* of abnormality. Opponents argue that biological psychologists are guilty of ignoring the role played by social and psychological factors in causing abnormality, and try to *reduce* the causes of abnormality to simple, single factors. Opponents believe that both normal and abnormal behaviours have much more complex causes than this.