

Genetics & Aggression

Some people are more aggressive than others. Some bio-psychologists believe that these differences are caused by genetic influences. Genes could influence aggression because aggression is caused by the brain, and the development of the brain is influenced by the genes we inherit.

When applying material on genetics and aggression

You will not be asked questions directly about genetic influences on aggression. You could be asked about twin and adoption studies, including their strengths and weaknesses. You could also use material on genetic influences to: (1) support the theory that aggression is an evolved behaviour; (2) challenge the theory that aggression is learned/shaped by the environment.

Adoption studies

In an adoption studies we compare the aggression levels of adopted people with their biological and adoptive parents. If they are more similar to their biological parents then aggression is influenced by the genes. If they are more similar to their adoptive parents then aggression is influenced by the environment.

- **Shulsinger (1972):** adoption study of 57 psychopaths. Found psychopathy in 3.9% of biological parents and 1.5% of adoptive parents. This is consistent with the genetic theory.
- **Strengths:** the adoption study method allows us to separate the influences of genes from environment.
- **Weaknesses:** (1) difference was not statistically significant, so likely to be due to chance; (2) majority of aggressive people aren't psychopaths, so even if psychopathy might be genetic, that doesn't mean that aggression is.
- **General problems with adoption studies:** (1) small samples make generalisation difficult; (2) PPs often not adopted at birth, so biological parents influence the PP's environment as well as their genes - makes it difficult to separate genetic and environmental influences.

Twin studies

In a twin study, the aggression levels of pairs of twins are compared to see how similar they are. MZ (identical) and DZ (non-identical) twins are used. Both types of twin share identical environments but MZ twins also share the same genes. Therefore, if MZ twins are more similar than DZ twins, this suggests that aggression is influenced by genes. At the same time, if MZ twins don't have identical aggression levels, that suggests that aggression is also influenced by the environment.

- **Brendgen et al (2005):** twin study of 234 twin pairs. PPs were assessed for both physical and social aggression by teacher and peer ratings. For physical aggression MZ correlations were higher than DVZ, suggesting a genetic influence. For social aggression MZ and DZ correlations were similar, suggesting that environment is more important. In all cases, correlations were low, suggesting that environment outside the home is the most important influence.
- **Strengths:** (1) twin study method allowed influence of genes, shared environment and non-shared environment to be separated; (2) sample size was fairly large, helping generalisability; (3) peer and teacher ratings allowed reliability of measurements to be checked.
- **Weaknesses:** (1) ratings of aggression may not be a valid measure of actual aggression; (2) in some cases genetic tests were not used the check whether twins were MZ or DZ.
- **General weaknesses of twin studies:** (1) sample sizes often small; (2) assignment as MZ/DZ may not be valid if genetic tests not used; (3) higher MZ concordances may be due to the fact that MZ twins are treated more similarly than DZ rather than due to increased genetic similarity.