Worksheet 8.1

Biological and cognitive factors influencing violence

Biological factors

The movie *Once Were Warriors* is a New Zealand film based on the book of the same name by Alan Duff. It depicts a period in the lives of a Maori family living in South Auckland and the movie quite brutally displays the domestic violence that is a problem for the family, ending with the separation of the abusive husband and his wife and showing the effects of the violence on the lives of their children.

Soon after the release of the movie, a biological theory about the origins of violence was reported, which suggested that there is a ‘warrior gene’, and that this specific variant of a gene might account for increased levels of violence among individuals, and that certain ethnic groups who have a recent history of tribal fighting tend to have the warrior variant. The Maori people of New Zealand are one such group.

The gene identified is responsible for the production of monoamine oxidase (MAO), an enzyme that breaks down serotonin, dopamine. Male mice with a particular variant of the gene have been found to be aggressive. There is evidence from a Dutch family with a dysfunctional variant of the gene and more-than-average antisocial behaviour, but little other human evidence. The term ‘warrior gene’ was originally coined when Rhesus monkeys with a low-activity MAO gene were found to be more aggressive (Merriman and Cameron, 2007). Although the hypothesis that such genetic tendencies for aggression might have been selected through evolution seems to have some face validity, the findings have been misused: criminal behaviour cannot be explained by a gene for aggression alone (Lea and Chambers, 2007). However, the findings have been used internationally: a man convicted of murder in Italy had his sentence reduced when his lawyers were able to show that he had the ‘warrior’ variant of the MAO gene (Ahuja, 2009).

References


October 2010

1. To what extent do you agree that criminal behaviour cannot be explained by a gene for aggression? What arguments should be used against such a claim?

2. Is it appropriate to reduce criminal sentences on the basis of genetic knowledge?

**Cognitive factors**

A cognitive explanation for violent behaviour is examined by Bushman (1998). According to this explanation, a child growing up builds scripts, which are perceptual images and conceptual representations of events that take the form of vignettes (short sequences of behaviour). When a script is stored in memory, it can be accessed to guide behaviour when a person finds him- or herself in a similar situation. Bushman (1998) conducted two experiments to investigate the cognitive basis of aggression. The first experiment asked participants to view a clip from a violent film (Karate Kid III) or a non-violent film (Gorillas in the Mist) and then complete a word-association task, stating the first word they thought of in response to a set of homonyms (words with different meanings that are spelt the same). 200 undergraduate psychology students (87% white, 50% female) were asked to respond to a list of words including words judged by their peers to be aggressive, such as murder and torture, homonyms such as cuff, plaster, pound and sock, and non-aggressive words like feather and snail. Those who watched the violent film were significantly more likely to provide aggressive responses to all word types, and male participants were more likely than female to do this.

In a second experiment, even more participants were asked to identify whether a set of letters was a real English word (such as SOCK) or a non-word (such as GOCK). When the letters made an aggressive English word, response times were significantly faster if the participants had seen a Karate Kid III clip than if they had seen a Gorillas in the Mist clip.

The conclusion from this research is that we carry scripts in our head for violence, and these experiments were able to activate the violent scripts and therefore influence subsequent word-identification behaviour. This can be used to explain why media violence is associated with increased violent behaviour: television and film in particular provide activation for violent scripts, and when similar contexts in real life are encountered, people are primed to act violently.

**Reference**


1. To what extent is Bushman’s work valid? Evaluate the study.

2. It is commonly thought that media violence is associated with real violence in the community. How important is it to be able to explain why this happens?