

Annotation:

This is an essay question where AO1, AO2, AO3 have equal emphasis (all are worth 4 of the 12 available marks). You should judge the AO1 and award a level, judge the AO2 and award a level, and judge the AO3 and award a level. Then an overall level of best-fit should be found, with equal emphasis on AOs. Start at the middle mark (e.g. 5 marks in level 2), then move up or down depending on the relative strength of the AO1, AO2, and AO3 content.

AO1 - Level 3 â## Demonstrates accurate knowledge and understanding

AO2 - Level 4 â## Line(s) of argument supported throughout by sustained application of relevant evidence from the context (scientific ideas, processes, techniques or procedures). Demonstrates the ability to integrate and synthesise relevant knowledge.

AO3 - Level 4 â## Displays a well-developed and logical evaluation, containing logical chains of reasoning throughout. Demonstrates an awareness of competing arguments, presenting a balanced conclusion

Overall level 4. Start at 11 marks, AO1 pulls down to 10 marks.

Overall: Level 4 - 10 marks

SECTION C

Issues and Debates

- 5 Ada was reading a book about a woman who became a police officer and solved an important crime. She enjoyed reading the book so much that she read it all in a single day. Ada's mum has always really enjoyed reading books and Ada had always had excellent reports from school about her reading development.

→ social learning theory.
→ positive reinforcement. ⇒ motivation.
Ada's friend Daniel does not enjoy reading and never has. He told Ada that he preferred to play video games, particularly games about sport. Daniel's dad enjoys reading and playing video games. When he was younger, Daniel had been asked to read more by his school and was always given extra support for his reading development.

Evaluate the extent to which human behaviour, such as the ability to read, can be explained by biological psychology.

You must make reference to the context in your answer.

→ brain structure - genes
sport - aggression, reading - natural selection.
→ social aggression.

(12)

The evolutionary theory states that natural selection is when a set of genes that express desirable characteristics such as aggression and a strong physique are passed down to successive generations since they served survival value. These traits enabled our ancestors to survive and so we have evolved to also have these genes so that we can survive. For example, Daniel's father enjoys playing video games and Daniel himself plays video games about sports. The evolutionary theory suggests that sports were done by our ancestors to build a stronger physique so that the males could hunt to provide food for their offspring and also so that they could defend their family from predators. Hence this could suggest that Daniel has evolved to inherit genes that express an interest in sports. There is evidence to support the role of genes in Daniel's interest and his father's



inheritance of ~~genes~~ these genes. Chester et al. found that ~~low~~ ^{high} levels of the MAOA gene caused ~~the~~ people to ~~have~~ display higher levels of aggression and Mertins et al. found that lower levels of the MAOA gene produced greater prosocial behaviour.

The hormone explanation ~~ex~~ states that males have androgens, including mainly testosterone in their hormonal makeup whereas females produce oestrogen more often. Testosterone ~~has~~ ^{stimulated} cell growth in brain areas implicated in aggression and antenatal exposure to testosterone has organising effects on the baby's brain, and increases spatial awareness. This means that high levels of testosterone increases competitiveness, ~~hence men~~. This could explain why Daniel and his father enjoy playing video games. They are both males which means that they would both have higher levels of testosterone compared to Ada and her mother. This ^{explains} ~~reason~~ ^{why they} would enjoy engaging in competitive activities such as playing video games about sport. Moreover, ~~there~~ there is evidence to suggest that the role of testosterone in females is more complex than in males. Eisenegger (2011) found that women who were given a dose of testosterone behaved more generously and sociably in a lab based negotiating

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game. This implies that a high level of testosterone in females does not have the same impact as it does on males. Hence this suggests that the ~~hypo~~ hormone explanation is reductionist as it does not consider the role of environmental factors such as the role of role models. Females may be more inclined to imitate the nurturing behaviours of female role models on television such as cooks or housewives and males may be more inclined to imitate the aggressive behaviour of role models such as footballers and boxers, ~~hence~~ ~~this suggests that~~ as ~~pro~~ supported by Bandura's Bobo doll study. This suggests that the biological explanation can explain Daniel and his father's preference of video games but it may be environmentally reductionist.

Since the biological explanation can be considered environmentally reductionist, it may be more useful to use the social learning theory to explain Ada and Daniel's behaviour. The social learning theory states that we learn through the processes of observation and imitation of our role models. Ada may consider her mother to be her role model and Daniel may consider his father to be his role model. Hence Ada has observed her mother reading books and would imitate this behaviour, and Daniel ~~is~~ may have



observed more instances of his father playing video games than reading books, so he has learnt ~~that~~ that behaviour instead. Bandura's 1961 Bobo Doll study found that boys were more likely to imitate the behaviour of a same sex role model compared to girls. Hence this explains why Daniel imitates ~~to~~ his father's ~~be~~ video game playing behaviour. However, the Bobo doll study was conducted in a lab setting, which means that the findings on the children's imitating behaviours lacked ecological validity.

Ada's behaviour of reading books may be better explained by the operant conditioning theory. The operant conditioning theory states that positive reinforcement is when a ~~post~~ pleasant stimulus is introduced in response to a desired behaviour to increase the likelihood of that behaviour being repeated. Ada received excellent reports from her school about her reading development, which may have encouraged her to continue reading, thus provided a source of extrinsic motivation for her.

Hence biological psychology can explain Ada and Daniel's behaviour to a limited extent since it ignores environmental influences which have a major role in their behaviour.

(Total for Question 5 = 12 marks)

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