6.10 Evaluating Biopsychology: Reductionism, Determinism and Methodology: Test Pack

AQA 7182 · about 15 minutes

Total Marks

Name: _____ Date: ____ / ____ / _____

Answer ALL questions.

1 A researcher reports a correlational study linking a specific allele to increased aggression in a sample of 28 male prison inmates. Identify one limitation of using a small, male-only sample when generalising biopsychological findings to the wider population.

(Total for Question 1 is 2 marks)

2 A PET scanning study with 12 participants reports a correlation between amygdala activation and reported fear intensity during a film. Outline one limitation of small-sample neuroimaging studies for making causal claims about emotion.

(Total for Question 2 is 3 marks)

3 A student reads a biopsychology paper that uses only correlational methods to link early stress to adult HPA axis differences. Identify two ethical or methodological reasons why the authors might prefer correlational designs in this area, and explain one limitation that results for causal inference.

(Total for Question 3 is 6 marks)

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Mark scheme · 6.10 Evaluating Biopsychology: Reductionism, Determinism and Methodology: Test Pack

Question 1

identifies reduced generalisability because a small, male-only sample may not represent females or the general population oe **B1**

explains that sex differences or sampling bias could mean the genetic-aggression link is not the same in other groups oe **B1**

Answer: The small, male-only sample limits generalisability; the finding may not apply to females or to non-prison populations because of sex differences and sampling bias.

Question 2

identifies limitation: small sample size reduces statistical power and increases chance findings oe **M1**

explains that low power and individual variability mean the correlation may not replicate or indicate causation oe **A1**

notes scanning studies are correlational: activation may be associated with, but not cause, reported fear oe **A1**

Answer: Small neuroimaging samples have low statistical power and high individual variability, so correlations between activation and fear may be unreliable and do not prove a causal role for the amygdala.

Question 3

identifies ethical reason: cannot randomly assign participants to early-life stress for ethical reasons oe **M1**

explains why this forces researchers to observe natural variation rather than use experimental manipulation oe **A1**

identifies practical/methodological reason: long timeframes and cost make experimental longitudinal manipulation impractical oe **M1**

explains that following cohorts over years is more feasible as observational research than experimental control oe **A1**

identifies limitation for causal inference: correlations do not establish direction of causation or rule out third variables oe **M1**

explains consequence, e.g. findings may reflect confounding factors like socioeconomic status rather than a direct effect of early stress on HPA function oe **A1**

Answer: Researchers use correlational designs because it is unethical to assign early-life stress and because long-term experimental studies are impractical. The limitation is that correlations cannot prove causation or exclude third variables, so links between early stress and adult HPA differences may reflect confounds such as socioeconomic factors.

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