Study Guide: BLOA

Celebration of Knowledge—Fall 2017!

1. Intro—Historical & Cultural Development
   1. The Humours
   2. The brain influences behavior
   3. Darwin
      1. Nature vs. Nurture
2. Principles of the BLOA
   1. **Learning Outcomes**:
      1. *Outline principles that define the biological level of analysis.*
      2. *Explain how principles that define the biological level of analysis may be demonstrated in research.*
   2. Emotions, behavior, anatomy, physiology of CNS & endocrine system
      1. Neurotransmitters
      2. Hormones
      3. Brain localization
   3. Behavior can be inherited/innate
      1. Evolutionary psychology
      2. Genetic research
   4. Animal research may inform our understanding of behavior
      1. Darwin’s claim of similarities
      2. Generalizations
3. Methods & Ethics
   1. **Learning Outcomes**:
      1. *Discuss how and why particular research methods are used at the biological level of analysis.*
      2. *Discuss ethical considerations related to research studies at the biological level of analysis.*
   2. Laboratory experiments
      1. Animal and human
      2. Changes of physiology and/or medications
      3. Control of conditions
   3. Case studies
      1. Advantages
      2. Disadvantages
   4. Correlational studies
      1. Twin & adoption studies
         1. MZ
         2. DZ
      2. Advantages
      3. Disadvantages
4. Localization of function
   1. **Learning Outcomes:**
      1. *Explain one study related to localization of function in the brain.*
      2. *Examine one interaction between cognition and physiology in terms of behavior. Evaluate two relevant studies.*
      3. *Discuss the use of brain imaging technology in investigating the relationship between biological factors and behavior.*
      4. *Discuss two effects of the environment on physiological processes.*
   2. Phrenology
   3. Brain Damage
   4. Technology
      1. EEG
      2. CT
      3. MRI
      4. fMRI
   5. The Split Brain
   6. Neuroplasticity
      1. Broca’s area
      2. Wernicke’s area
      3. Environment and brain function
5. Neurotransmission
   1. **Learning Outcomes:**
      1. *Using one or more examples, explain effects of neurotransmission on human behavior.*
   2. Parts of the nerve cell
   3. Chemical transmission
   4. Neurotransmitters/Drugs and behavior
      1. Ach
      2. Dopamine
      3. Serotonin
6. Hormones
   1. **Learning Outcomes**:
      1. *Using one or more examples, explain functions of two hormones in human behavior.*
   2. Melatonin
   3. Oxytocin
   4. Cortisol, Testosterone, Others?
7. Genetics and Behavior
   1. **Learning Outcomes**:
      1. *With reference to relevant research studies, to what extent does genetic inheritance influence behavior?*
8. Evolutionary Psychology
   1. **Learning Outcomes**:
      1. *Examine one evolutionary explanation of behavior*.
9. *Ethical considerations in research into genetic influences on behavior*
   1. **Learning Outcomes***:*
      1. *Discuss ethical considerations in research into genetic influences on behavior.*

**Studies**:

I might suggest using these studies to examine your understanding of the topics listed above. How can you apply the topics to these cases? How about using these studies to the learning outcomes?

Phineas Gage

Janet

HM

Sperry and split-brain

Brefczynski-Lewis et al (2007)

Draganski et al (2004)

Maguire et al (2000)

Tierney et al (2001)

Bailey & Pillard (1991)

Baumgartner (2008)

Wedekind (1995)

Raine (1997)

Caspi et al (2003)

Martinez & Kessner (1991)

Meany et al (1988)

Newcomer et al (1999)

Rosenwig, Bennet, & Diamond (1972)