**Biological Approaches to Behavior**

**Questions of Inquiry & Points to Ponder**

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|  |  | **Prior Knowledge** | **Post Lesson Knowledge** |
| **Localization** | Is every behavior associated with a specific brain region? |  |  |
| Is there a specialized center for every psychological function in the brain? |  |  |
| How can these brain centers be discovered? |  |  |
| Are some psychological functions more localized than others? |  |  |
| **Neuroplasticity** | If behavior is a product of brain structure, to what extent can the brain itself be changed? |  |  |
| For example, if a patient’s Broca’s area is damaged, would it be possible to re-grow this area in another region of the brain? |  |  |
| Does the brain change itself in response to other environmental influences, for example, when we learn a new skill? |  |  |
| If the brain does change itself, what are the potential applications of using this process? |  |  |
| **Neurotransmitters & Behavior** | Some aspects of human behavior can be explained by chemistry---but can we use chemistry to control people’s behavior in constructive ways? |  |  |
| For example, do you think we can invent a drug that will make people fall in love with each other? |  |  |
| Can we invent a drug that will make people tell the truth? |  |  |
| How can we study the effects of neurotransmitters on behavior, given the large number of interacting factors and confounding variables? |  |  |
| **Techniques used to Study the Brain in Relation to Behavior** | To what extent can we see inside the brain using modern technology? |  |  |
| Is there a limit to what and when we can see? |  |  |
| Can we observe mental processes as well as brain structure? |  |  |
| What are the principals of brain imaging? |  |  |
| **Hormones & Behavior** | Do hormones influence behavior? |  |  |
| How far does this influence spread? For example, it might be easy to admit that hormones influence sleep-wake-cycles, but do they influence other things such as moral choices? |  |  |
| Can we say that hormones influence some behaviors negatively & some positively? |  |  |
| What is the role of hormones in interpersonal relationships (for example, friendship or conflict)? |  |  |
| **Pheromones & Behavior** | Do human pheromones exist? |  |  |
| If they do, what effects could they have on human behavior? |  |  |
| What are the major limitations of research into human pheromones? |  |  |
| **Genes & Behavior: Genetic Similarities** | To what extent is our behavior determined by genetic inheritance? |  |  |
| Is intelligence genetically pre-determined? |  |  |
| Can genetic and environmental influence interact? |  |  |
| In what ways can genetic inheritance be modulated by environmental influences? |  |  |
| How can we estimate heritability of a trait or behavior? |  |  |
| **Evolutionary Explanations for Behavior** | Is the theory of evolution useful for explaining human behavior? |  |  |
| What is the explanatory power of evolutionary explanations for behavior? Can they be used for all possible behaviors? |  |  |
| If we are genetically similar to animals and genes affect behavior, does it mean we are behaviorally similar to animals too? |  |  |
| **The Role of Animal Research in Understanding Human Behavior (HL only)** | Can animal studies provide an insight into human behavior? |  |  |
| Is psychological experimentation with animals ethical? |  |  |