Preview: Overview of Biological Theories

"Biological theories have implications for major theoretical questions … "

Table 9.1  Preview of Biological Theories

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Evolutionary Approaches

Question: What is evolutionary psychology? (254)

Emotions

"Evolution is not limited to physical characteristics and basic drives. For the field of personality, emotional reactions and social behaviors are especially important."

Question: How does the field of evolutionary psychology attend to the expression of emotions in man and animals? (254-255)

Altruism

Question: What is the concept of inclusive fitness in evolutionary psychology? (255)
Altruism

(Continued)

Question: What is the concept of **kin altruism** in evolutionary psychology?

Question: What is the concept of **reciprocal altruism** in evolutionary psychology?

[Illustrations] Altruism in evolutionary psychology.

Question: What is David Buss' evolutionary concept of **evolved psychological mechanisms**?
Altruism

(Continued)

[Examples] Evolved psychological mechanisms.

Sexual Behavior

"Reproduction is of primary concern to evolutionary theory … "

Question: What is the concept of parental investment in evolutionary psychology?
Sexual Behavior

(Continued)

Question: What is meant by the following statement?

"The promiscuous strategy is not the only one males have (that) brings risks."

(257)

Question: What is the concept of **parental uncertainty** in evolutionary psychology?

(258)

Question: What are meant by the following statements?

"The image of the selective and committed female and the unselective, promiscuous male sexual styles is … (oversimplified)."

(258-259)

"Human females … respond to stress with a 'friend-and-befriend' attachment and caregiving mode, mediated by **oxytocin** … "

(259)
"Parents who nurture their children enhance the survival of their genes."

[ Evidence ] Parental nurturing behavior. (259-260)

"Aggressive behavior, from an evolutionary point of view, serves several functions … "

[ Evidence ] Aggression and dominance. (260)
Question: What are meant by the following statements?

"Oddly, one of the most important evolutionary legacies is the ability of humans to form cultures."

"Each personality develops in an environment shaped by cumulative cultural evolution."

Language and Thought

"Language gives humans our capacity for a unique kind of consciousness."

[Evidence] Language, thought, and consciousness.
"(The) molecular genetic approach is, even as a vision, oversimplified, since personality develops from a combination of biological and environmental influences."

"But there are intriguing hints about the role of particular genes for personality."

[Evidence] Genetics and personality. (262)

**Question:** What is the concept of **heritability** in evolutionary psychology? (262-263)

**Question:** What is the concept of **emergenic traits** in evolutionary psychology? (263)
Temperament

Question: What is the ancient model of temperament? (263)

Question: What is the modern model of temperament? 

[Evidence] Temperament and personality. (263-264)

Question: What is Jerome Kagan's inhibited and uninhibited temperament model? (264-265)
Question: What is meant by the following statement?

"The inherited genetic profile, called the *genotype*, doesn't always produce the same observed characteristic, or *phenotype* …"
"Evidence to heredity and relatively stable temperament differences constitute strong evidence that biology affects personality, but how?"

**The Brain**

"Personality depends upon the brain."

[Evidence] Brain mechanisms and personality. (266-268)
Emotional Arousal

"Emotions are a core to human personality and motivation."

[Evidence] Emotional arousal and personality development. (268-269)

Cortical Arousal

"... another kind of arousal (comes) from thinking."

Question: How has Ivan Pavlov's concept of strong and weak nervous systems contributed to the study of cortical arousal?
"People … vary from one to another in whether they tend to overreact to underreact to stimuli, and this physiological difference has implications for personality."

Evidence: Cortical arousal. (269)

Biological Factor Theories: Eysenck, Gray, and Others.

"Several theorists have proposed comprehensive factor models of personality that specify biological underpinnings of the major dimensions along which personality varies."

Eysenck's "PEN" Biological Model

"Hans Eysenck and others who expanded his approach built their biological models of personality on Pavlov's analysis of strong and weak nervous systems."

Question: How did Hans Eysenck determine the difference between strong and weak nervous systems? (270)
Eysenck's "PEN" Biological Model

(Continued)

Question: What is Hans Eysenck's PEN biological model? (271)

Question: What is Hans Eysenck's description of Extraversion? (271-272)

Question: What is Hans Eysenck's description of Neuroticism? (272)
Eysenck's "PEN" Biological Model

(Continued)

Question: What is Hans Eysenck's description of Psychoticism? (272-273)

"Eysenck's theory has stimulated thousands of research studies."

[Evidence] Research stimulated by Hans Eysenck's theory. (273)
"J. A. Gray proposes a biological theory of personality that builds on Eysenck's theory."

Question: What is J. A. Gray's reinforcement sensitivity theory?

Question: What is J. A. Gray's description of a Behavioral Activation System (BAS)?

Question: What is J. A. Gray's description of a Behavioral Inhibition System (BIS)?
Question: What is meant by the following statement?

"BAS and BIS scores aren't limited to emotional feelings …"

Question: What is J. A. Gray's description of a **Fight-Flight System (FFS)**?

"The search for distinct neurobiological mechanisms of personality, such as particular neurotransmitters, is more likely to succeed if personality factors can be identified that are quite homogeneous (in contrast to very general factors)."

[Illustration] Search for distinct neurobiological mechanisms of personality.
Cloninger's Tridimensional Model

"C. R. Cloninger's tridimensional model proposes three biologically based personality traits, each resulting from the relative level of a particular neurotransmitter in a person's central nervous system."

Question: What is C. R. Cloninger's temperament trait identified as novelty seeking?

Question: What is C. R. Cloninger's temperament trait identified as harm avoidance?

Question: What is C. R. Cloninger's temperament trait identified as reward dependence?
"Cloninger's theory helps explain different types of alcohol abuse."


"Experience changes biology."


END