

## Chapter 8

# Evolutionary Perspectives on Personality

## Evolution and Natural Selection

- Human nature and human personality made up of a collection of evolved mechanisms
- Before Darwin, two features of evolution were recognized: Change over time and apparent adaptation to environment

## Natural Selection

- Darwin revolutionized biology by proposing a theory of the process by which adaptations are created and changes take place over time—natural selection

## Natural Selection

- Changes or variants that better enabled an organism to survive and reproduce lead to more descendants
- Descendants inherit variants that led to their ancestors' success

## Natural Selection

- Thus, successful variants are selected and unsuccessful variants are weeded out
- Over time, successful variants come to characterize entire species
- Adaptations: inherited solutions to survival and reproductive problems posed by hostile forces of nature

## Sexual Selection

- Darwin noticed that many mechanisms seemed to threaten survival, such as the peacock's elaborate plumage and the stag's large antlers
- Darwin proposed evolution by sexual selection as solution—these traits evolved because they contributed to an individual's mating success

## Sexual Selection

- Two forms of sexual selection
  - Intrasexual competition: Members of the same sex compete with each other for sexual access to members of the other sex
  - Intersexual competition: Members of one sex choose a mate based on their preferences for particular qualities in that mate

## Genes and Inclusive Fitness

- Differential gene reproduction—reproductive success relative to others
- Inclusive fitness theory (Hamilton, 1964)
  - Inclusive fitness: personal reproductive success (number of offspring you produce) plus effects you have on the reproduction of your genetic relatives, weighted by genetic relatedness

## Products of the Evolutionary Process

- Adaptations
- Byproducts of Adaptations
- Noise or Random Variation

## Adaptations

- Adaptations are the primary products of selection, defined as “reliably developing structure in the organism which, because it meshes with the recurrent structure of the world, causes the solution to an adaptive problem”

# Adaptations

- Adaptive problem: Anything that impedes survival or reproduction
- Hallmark of adaptations are special design, including efficiency, precision, and reliability
  - e.g., xenophobia

## Byproducts of Adaptations

- Byproducts are incidental effects of adaptations not properly considered to be adaptations
  - e.g., color of bones

## Noise or Random Variation

- Neutral with respect to selection
  - e.g., shape of the human earlobe

## Evolutionary Psychology

- Premises of Evolutionary Psychology
  - Domain-specificity: Adaptations are designed by evolutionary process to solve specialized adaptive problems

## Evolutionary Psychology

- Premises of Evolutionary Psychology
  - Numerousness: Expectation is that there are many psychological adaptations, because different adaptations are required to solve different adaptive problems

## Evolutionary Psychology

- Premises of Evolutionary Psychology
  - Functionality: Psychological adaptations are designed to accomplish particular adaptive goals

## Human Nature

- Human nature is a product of evolutionary process
- Psychological mechanisms that are successful in helping humans survive and reproduce out-replicate those that are less successful

## Human Nature

- Over evolutionary time, successful mechanisms spread through population and come to characterize all humans
- Examples of evolutionary analysis at the level of human nature
  - The Need to Belong
  - Helping and Altruism
  - Universal Emotions

## Sex Differences

- Evolutionary psychologists expect that males and females will be the same or similar in all domains where sexes have faced the same or similar adaptive problems
- Expect sex differences in those domains where sexes recurrently faced different adaptive problems

## Sex Differences

- Examples of differences between men and women that are attributable to recurrently facing different adaptive problems
  - Sex Differences in Aggression
  - Sex Differences in Jealousy
  - Sex Differences in Desire for Sexual Variety
  - Sex Differences in Mate Preferences

## Individual Differences

- Most challenging and difficult level of analysis for evolutionary psychologists
- Three evolutionary perspectives on individual differences
  - Environmental triggers of individual differences
  - Heritable individual differences contingent on other traits
  - Frequency-dependent strategic individual differences

## The Big Five and Evolutionarily-Relevant Adaptive Problems

- Big Five personality traits as clusters of key features of “adaptive landscape” of other people
- Humans have evolved “difference-detecting mechanisms” designed to notice and remember individual differences that have most relevance for solving social adaptive problems

## Limitations of Evolutionary Psychology

- Adaptations are forged over long expanse of evolutionary time, and we cannot go back to determine with certainty what the precise selective forces on humans have been
  - Forced to make inferences
  - But current mechanisms provide windows for viewing the past
  - Learning more about our evolved mechanisms is a tool for overcoming limitation of sparse knowledge of ancestral environments

## Limitations of Evolutionary Psychology

- Evolutionary scientists have just scratched the surface of understanding the nature, details, and design features of evolved psychological mechanisms
- Modern conditions are undoubtedly different from ancestral conditions in many ways, and so what was adaptive in the past might not be adaptive today

## Limitations of Evolutionary Psychology

- It is sometimes easy to come up with different and competing evolutionary hypotheses for the same phenomena—true of all science
  - Onus is on the researcher to fashion specific, testable, and falsifiable hypotheses
  - Thus, competing theories can be pitted against each other and data can be the final arbiter