Evolutionary Perspective on Personality

The key to survival of the species is *living to reproductive age* and *reproducing*!

Darwin revolutionized the field of biology by proposing a theory of the *process* by which adaptations are created and change takes place over time. This process is called *natural selection*.

He believed that changes or *variants* that better enabled an organism to survive and reproduce would lead to more descendants. Furthermore, the descendants would inherit the variants that led to their ancestors’ survival and reproduction.

Through this process, successful variants were selected and unsuccessful variants weeded out. Natural selection, therefore, results in gradual changes in species over time, as successful variants increase in frequency and eventually spread throughout the gene pool, replacing the less successful variants. Over time, these successful variants come to characterize the entire species, whereas unsuccessful variants decrease in frequency and vanish from the species.

Some events impede survival and are called *hostile forces of nature*. These forces include food shortages, diseases, parasites, predators, and extremes in weather. *Adaptations* are inherited solutions to the survival and reproductive problems posted by hostile forces of nature.

Some survival mechanisms (like elaborate coloration) fly in the face of adaptation and survival. For this Darwin proposed a second theory of evolution called the *theory of sexual selection*.

The evolution of characteristics because of their mating benefits, rather than because of their survival benefits, is known as *sexual selection*.

Sexual selection can take the form of:

- *intrasexual* competition

- *intersexual* competition
Genes, of course, contain the DNA that is passed from one generation to the next so that at least 50% of the genes of siblings are the same. Some genes are passed along more often than others and these genes determine the future generations of that line in contrast to the genes that are not passed along. This is called **differential gene reproduction**. Both successful mate competition and successful survival are the result of differential gene reproduction.

The modern evolutionary theory based on differential gene reproduction is called **inclusive fitness theory**. The “inclusive” part is the fact that characteristics that facilitate reproduction need not affect the personal production of offspring. They can affect the survival and reproduction of genetic relatives as well. How?

So, inclusive fitness includes both one’s own reproductive success as well as the sibling’s reproductive success (remember that you share 50% of the same genes as siblings).

**Products of the Evolutionary Process**

- **Adaptations** (the primary products of the selective process)
  - Emerge with regularity in a population
  - Not determined but are the confluence of environment and genes
  - An **adaptive problem** is anything that impedes survival and reproduction in time and space
  - The hallmarks of adaptation is **special design**
    - **Efficiency**
    - **Precision**
    - **Reliability**
  - All adaptations are products of the **history** of selection
    - For example, phobias including **xenophobia**

- **By-products of Adaptation** (incidental effects that are not properly considered to be the adaptation)
  - Nose (smelling)/hold up glasses
  - Others?

- **Noise or Random Variations**
  - Develop over generations in a gene pool but do not hinder the functioning of adaptations (i.e., shape of an organ or color)
Evolutionary Psychology
Involves three key premises…

- Domain specificity
  - Adaptations are designed to solve a particular adaptive problem
  - For example, the selection of food
  - Different problems call for different solutions
    - Food selection vs. mate selection (call for different strategies)

- Numerousness
  - Because behavior and survival is so complex, many adaptations are necessary for human survival
  - This includes psychological adaptations

- Functionality
  - Our psychological mechanisms are designed to accomplish particular adaptive goals
  - What is the functional nature of our behaviors? The search for understanding these functions involves identifying the specific adaptive problems to which the mechanism is an evolved solution