

Lesson 3.3

The Great Debate: Nature Versus Nurture

traits: the qualities or characteristics that a person has

heredity: biological characteristics passed from parent to child through genes

geneticists: scientists who study genetics, or the science of heredity

dominant: having the most influence or control

Based on his research, Galton developed an idea called *eugenics* that suggested only healthy, intelligent people should be allowed to have children. For several decades, many prominent scientists and political leaders agreed with Galton and saw eugenics as a great way to improve the human race. Eventually, these ideas were used in Nazi Germany to justify the mass murders of millions of people. Scientists saw the danger in this kind of thinking, and today eugenics is seen by most people as an unethical and immoral idea.

Do genes determine your destiny?

The genes in your DNA determine physical **traits**. Genes determine hair texture, eye color, height, and all the other things that make up your appearance. There's no debate that genes are the building blocks of your body, but where do your likes and dislikes come from? Do genes cause a person to become an athlete, love broccoli, or enjoy opera? Since the mid-1800s, scientists have examined the question of whether **heredity** or the environment in which you are raised is more important in forming who you are—a debate known as “nature versus nurture.”

This phrase was popularized by Francis Galton in 1865. Galton believed that inherited traits are the most important factor in creating our personalities. His research found that the intelligent men he knew also happened to have intelligent fathers. Intelligence seemed to pass directly through the generations—from grandfather to father to son, for example—but was less common between cousins. Other scientists argued that the intelligence Galton saw was due to environment, and it had nothing to do with genetically inherited traits.

During the 20th century, scientists eagerly investigated how environmental factors, such as education and family life, combined with genetics to influence our personalities. Although a definitive answer still hasn't been found, scientists agree that the best research into the nature versus nurture debate focuses on twins and adopted children.

Fraternal twins are no more alike than any other pair of siblings, but identical twins share the exact same genetic make-up. This characteristic gives psychologists and **geneticists** two genetically identical people to compare. As the twins' personality traits develop over time, scientists take note of which environmental factors were different between the two siblings. Researchers are especially fascinated by identical twins who were raised in separate households due to adoption and then later reunited. These twins often show surprising similarities in their likes and dislikes.

Science may never completely prove whether nature or nurture plays a more **dominant** role in making us who we are. It's clear, though, that our genes, families, and friends are all part of it. A great athlete may inherit physical traits, but without encouragement from a coach and hours of practice, his or her talents would never reach their full potential.



Circle the letter of the best answer to each question below.

1. Physical traits pass from one generation to the next
 - a. through genes.
 - b. because of environment.
 - c. according to eugenics.
 - d. All of the above
2. "Nature versus nurture" can also be described as
 - a. "heredity versus genetics."
 - b. "DNA versus inheritance."
 - c. "genes versus environment."
 - d. "dominant versus submissive."
3. Which physical trait is most likely to be influenced at least partly by environment?
 - a. height
 - b. hair color
 - c. weight
 - d. eye color

Write your answers on the lines below.

4. A mother and daughter are both talented pianists. Give an inherited trait and a learned trait that would lead to this similarity.

5. How do identical twins differ from fraternal twins?

6. Why would an adopted child be a good candidate for a study of nature versus nurture?
