Nature vs. Nurture

by Sophia Tutorial

WHAT'S COVERED

In this lesson, we'll discuss a debate that has been present throughout the history of psychology, as well as in other areas of thinking, such as religion, philosophy, and science.

The specific areas of focus include:

1. Nature vs. Nurture
   a. Genetics
   b. Environment
2. Application in Psychology
   a. Twin Studies
   b. Reaction Range

1. Nature vs. Nurture

The nature versus nurture debate has been phrased in a lot of different ways, such as destiny versus free will, and determinism versus indeterminism.

In psychology, we call it nature versus nurture because **nature** refers to our biological workings--our genetics and the way our brains are structured, all of which is evolutionary. **Nurture** refers to our environment, and the role that has on our development.

The question behind the debate is which one of these has a more significant effect on our development as people.

THINK ABOUT IT

As another way of framing this idea, think about the difference between personality and mood. Personality is comprised of ongoing, stable, long-term characteristics, traits that are built into people on the nature side of the spectrum. Someone may just be an irritable kind of person. Over time, those are the kind of characteristics he or she continues to display. Mood, on the other hand, defines day-to-day feelings that can be affected by the environment. If someone gets cut off by another driver while stuck in traffic, that person might then be in an irritable mood. He or she might not be an irritable person, but for that particular period of time, he or she is going to be irritable. The question, again, is which of these two has a bigger effect.

To understand this debate a bit further, we'll now consider it in terms of some of the other concepts we've been studying up to this point.

TERMS TO KNOW

Nature
Innate or biological influences on behavior such as genetics

Nurture
Environment influences on behavior such as society and learning from experiences

1a. Genetics

In the realm of genetics, we say that there's a certain biological basis for psychology; some things are just in our genes. Thus, when someone has brain damage, that can influence the person's behavior and personality.

IN CONTEXT

There is a famous case of a worker named Phineas Gage, who in 1848 received significant brain damage to his frontal lobe after a tamping iron that he was using shot up through his brain. Though he survived, he experienced significant changes in his personality. People said he was a completely different person as a result of the accident, so there was some biological basis to his personality (the nature side) in the part of his brain that was damaged.

1b. Environment

Conversely, scientists have also noted that there's a certain environmental influence on the way that our genetics work.
The biologist Barbara McClintock researched how certain genes are displayed--whether they're turned on or off--as a response to environmental influences. In her case, she was studying maize, or corn, and the way that it was colored. She noticed that certain stresses from the environment, either extreme heat or cold, would influence or change the way the corn expressed its colors.

2. Application in Psychology

There are several ways in which the nature versus nurture debate is applied in psychological research, one of which is through twin studies.

2a. Twin Studies

If you recall from a previous lesson, **twin studies** involve comparing identical or fraternal twins to see similarities or differences between them.
When comparing twins of the same parents, scientists noticed that there were significant similarities--again, nature--in identical twins. They had similar IQs and similar personalities. They would even have similar disorders.

However, when twins of different parents were compared, if the twins were split at birth, then these similarities tended to drop off, returning to the nurture side of the debate. As you can see, both nature and nurture are involved here.

TERM TO KNOW

Twin Studies
Because identical twins have the same DNA, comparing the behavior of identical twins with that of fraternal twins or siblings from the same parents allows psychologists to determine if certain behavior has a genetic predisposition

2b. Reaction Range

As with most psychology today, understanding everything that's occurring involves understanding a range of influences, not just one or the other. In other words, it's not nature versus nurture; it's nature *and* nurture. We need both to create a complete picture of all of our psychological concepts.
A helpful way of thinking of this is in terms of a reaction range. A reaction range is the limits that the environment places on the effects of heredity. This range is our aptitude for things in response to the environment.

> EXAMPLE If a child shows a certain artistic aptitude or a certain biological predisposition to being artistic, the child can only develop that if he or she is given an environment with art supplies. If the child isn't given these resources, he or she won't be artistic since there isn't a way to develop those abilities. If the child is given art supplies, then he or she might be a very artistic and creative person.

This same concept can be applied to different types of addiction. When someone has a biological predisposition to alcohol or narcotics addiction, it's likely important for the person to not have that environmental response (to not engage with those substances) so that he or she doesn't develop those types of disorders.

SUMMARY

In this lesson, you learned about the **nature vs. nurture** debate in psychology. Nature is the innate or biological influences on behavior, such as **genetics**; nurture is the influences on behavior that come from the **environment**.

You now understand that this debate has very relevant **applications in psychology**. One of these is **twin studies**, which involve comparing the behavior of identical or fraternal twins to determine if certain traits are genetic or learned. Another way of thinking about this is through the **reaction range**, which is the limits the environment places on heredity. In other words, both nature and nurture are extremely important to development.

Source: Adapted from Sophia tutorial by Erick Taggart.

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