# Nature vs. Nurture

### KEY TERMS:

* Nature: Genetic factors that influence child development
* Genetic Essentialism: to infer a person's characteristics and behaviors based on their genetic makeup; ignoring effects of nurture and citing nature as the cause for all development
* Genes: information needed to specify physical and biological traits passed from parents to offspring
* Nurture: Environmental factors that influence child development
* Epigenetics: The study of changes in organisms cause by modification of gene expression rather than alteration of the genetic code itself
* Behaviorism: the belief that people can be taught to do or become anything regardless of DNA

### What do we need to understand about nature and nurture?

Nature and nurture fall on opposite ends of the spectrum in a long-standing debate about what is most influential in child development. Nature refers to biological factors that affect a person's development and is often referred to as genetics. This includes characteristics like physical appearance, height, and everything else that we directly inherit from our parents. Nurture refers to life experiences people have or the environment that a person grows up with, and is often referred to as environment. This includes qualities like weight, the kind of home a person grows up in, effects of parenting, and any other characteristics that are not inherited. Many other traits are influenced by both nature and nurture. These include things like sleeping patterns as well as emotional and intellectual traits like behavior, temperament and extraversion.

It has been proven that children's brains grow the most in the first 5 years of development, so nurture is especially important in those early childhood years (8). Nurture is also very important in the case of mental health and in the presence of ACEs. Environment can make all the difference in helping children to recover from ACEs. Studies have also shown that nurture makes a difference in children with mental disorders. According to Stanford Medicine: Genetics of Brain Function, "in most cases of depression, around 50% of the cause is genetic and around 50% is unrelated to genes (psychological or physical factors)" (5). In these cases, there are factors other than just nature making a difference.

### What is genetic essentialism?

"The tendency to infer a person's characteristics and behaviors based on their perceived genetic make-up" is known as genetic essentialism (4). Genetic essentialism alone might make sense at first glance becuase our DNA can be examined to inform us about our biological health. However, the arguments in favor of essentialist thinking ignore the fundamental idea of nurture and instead, focus on the nature of human beings. A psychological essentialist believes that everything and everyone have innate attributes that are essential parts of them. In this view, our genes create an immutable essence of the self. Genetic essentialism sets forward the impression that our self can be reduced to our molecules (7). In genetic essentialism, our social, historical, and moral complexions are simplified into an essentialist form that ignores nurture.

### What are the implications of the genetic essentialist mindset?

As explained by Dar Nimrod and Heine (4), basing ourselves through a genetic essentialist mindset brings four complications:

First, when we view our decisions and outcomes as immutable and determined, we come across the idea that we cannot change certain aspects of ourselves and even when we try to change, our genes create the expected outcome. However, we know that this isn't always the case. In the world of psychology, we learn that we can change our mindset and overcome obstacles. To subscribe to a genetic essentialist minset hinders our ability for growth.

Second, when we view our genes as a cause for specific conditions, we create a specific etiology. In doing so, we ignore the role of our environment and factors that are outside of our control. In the ongoing argument of nature v nurture, we can notice that our environmental factors influence the way we are. This can be seen from culture to culture and even from country to country. For example, scientists estimate that 20 to 60 percent of our temperament is determined by genetics. Environmental factors also contribute to changes in temperament (6). Genetic essentialism would ignore those environmental factors.

Third, genetic essentialism assumes that all groups are the same (homogenous). This discriminates a group as being similar in every way because of their genetics. In doing so, it implies that a group of people will have similar conditions becuase they are of similar genes. We know that this isn't the case because genetic mutations are always possible. More importantly, people within a group may act the same, but each person is unique.

### What are the implications of focusing solely on epigenetics and behaviorism?

Epigenetics are additions or changes in genetic sequence and includes any process that alters or changes gene activity without changing someone's DNA (1). Epigenetics are often studied when making arguments for nurture because they focus on how people's environments and behaviors can change their genes.

Behaviorism is the belief that people can be taught to do or become anything regardless of their genetics (2). This belief too, at first glance looks pretty convinving. However, just as with the genetic essentialism mindset, behaviorism brings a few complications that we need to understand.

First, behaviorism oversimplifies human experience. This mindset overlooks the needs, experiences, and free will that humans have. Relying solely on behaviorism implies that we can change anything about ourselves, and this is simply not true (9). No matter how hard someone tries, they cannot control their height or physical appearance.

Second, behaviorism fails to take into account the individuality of people. Different people most likely will not respond to treatments or motivation the same way, meaning that genes do make a difference on development. Unique individuals all respond to stimuli differently, crediting change to various internal and external factors. Thus, behaviorism is unpredictable; not a one size fits all concept (9).

Third, using epigenetics to argue only in favor of nurture overlooks the DNA backbone and the genes that stay the same. Epigenetics change gene expression, but the DNA stays the same. Children inherit genes from their parents, guiding their development, then some of these genes change due to epigenetics. Thus, epigenetics does not only prove nurture, it proves that nature and nurture work together. Therefore, thinking development is only affected by nurture is shortsighted.

### So, is it nature or nurture?

Although some people argue in favor of either nature or nurture, it is generally accepted that they are both responsible for child development. The effects of nature are largely studied using twins seperated at birth. These studies find many similarities in interests, IQ, health, religiosity, etc, suggesting the large impact that nature has on a person's life. Epigenetics are also widely studied. The effect of epigenetics shows that environmental factors also have a very large effect on people. Exercising or not and eating healthy or not are a few examples of things that can change how genes are expressed. For example, regardless of DNA, if someone has a very unhealthy diet and does not exercise, that person will become obese. In contrast, malnourished people cannot become obese. There have also been studies done that show that children will imitate the words and actions of those around them (one of the most famous being Bandura's Bobo doll experiment) which also shows the effect of environment on child development.

All in all, it isn't that genes are the only deciding factor for development. Genes act how they do because of their environment. For example, someone can inherit genes that should make them tall, but if they grow up undernourished, that will affect their height. For this reason, it is difficult to determine the exact amount of influence nature and nurture have because some genes are dependent on their environment, so it is hard to seperate their effects. Nature and nurture are deeply connected and both responsible for the devleopment of children. This is important to know in education so that we can be aware of the factors that affect our students' development.

Sources:

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