

THEORIES OF PERSONALITY

II

SESSION 3: Biological Components of Personality
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Biological Theory: An Introduction

We start with biological theory for two reasons. First, the theory that our genetic makeup determines, at least in part, our personality has been a strong belief among theorists for thousands of years. Secondly, one of the first questions Personality students often ask is what percentage biology plays in our development as a person.

In its simplest form, biological components strongly determine our physical characteristics such as eye color, height, hair color, body type, and general looks. Even if biology plays no direct role in our personality, the way we look certainly affects how we see ourselves and how others interact with us. This indirect affect does, at minimum, play a role in how we develop and who we are as adults.

Research, mainly utilizing correlational studies has determined that other aspects may be directly linked to our genetic make-up. The idea of inherited Intelligence has now been shown to be only partially correct. While biology plays a role, the significance of environment can not be ignored. A recent phenomenon is the belief that many mental disorders, such as depression and anxiety, are linked to our inherited genes. While these theories have yet to be proven one way or the other, they certainly influence how we approach mental illness treatment and recovery.

Other aspects of human development, such as temperament and extroversion and introversion have also been shown to have strong biological links. One theorist, [Hans Eysenck](#), believed that much of our personality was determined by biology, and although controversial at times, he continues to be one of the most discussed biological theorist in terms of personality development.

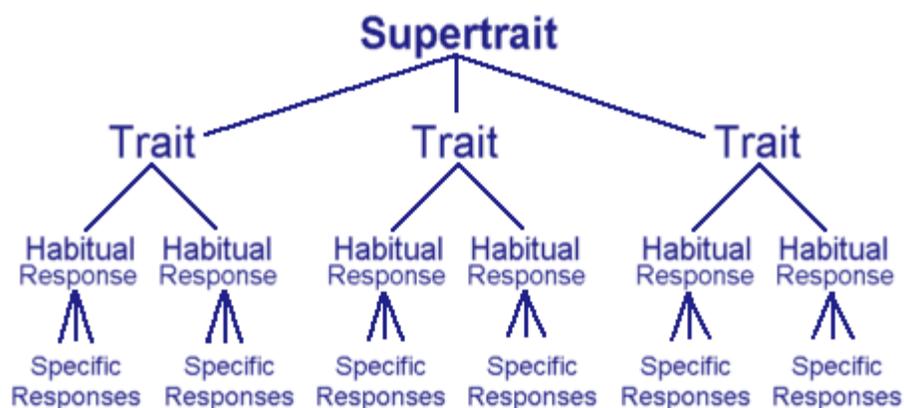
Hans Eysenck

For years, biological theory played a significant role in our view of human development and personality. Toward the beginning of the 20th Century,

however, views began to change and personality was seen as involving both biology and environment. Hans Eysenck, however, fought against this trend. By using the statistic known as [Factor Analysis](#), he concluded that all human traits can be broken down into two distinct categories:

1. Extroversion-Introversion
2. Neuroticism

He called these categories [Supertraits](#) (See figure below). According to his theory, everyone exhibits specific responses to both internal and external stimuli. These specific responses will vary according to the intensity of the stimuli, the situation, state of mind, and many other factors. At some point, however, we will begin to see trends in how we respond. A person who is very concerned with how other people view her, might shy away from a stranger in most specific situations. When this behavior becomes the normal way to respond to new people, the response then becomes a habit.



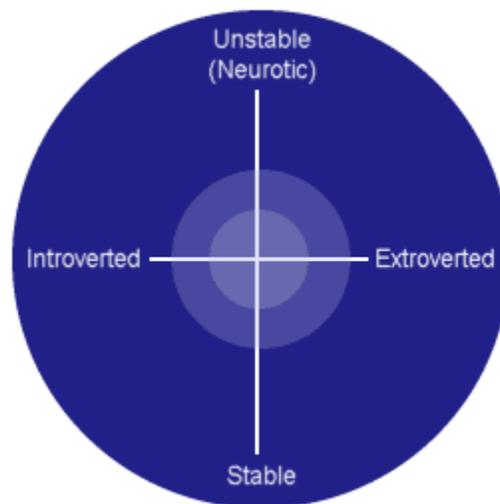
Suppose now that she also avoids public settings where a large number of people gather, or possibly limits her social activity to only a few trusted friends. When all of these habitual responses are combined, they become part of a larger group known as a trait. In this case, the trait may be called shyness or perhaps even social phobia.

This trait, Social phobia, is a component of one of the three supertraits, introversion-extroversion. If we see that she also prefers soft music over loud

music, intellectual pursuits over than team sports, or other similar solo activities, we could then classify her as an introvert.

When we look at an individuals specific responses, combine them into habitual responses, further develop a set of specific traits and then determine where they fall on the two supertraits, we would notice that the vast differences in personality prohibit us from such a simple theory. Because of this, Eysenck argued that there were varying degrees of each of the two supertraits and most of us fall somewhere on the spectrum between Stable versus Unstable (neurotic) and Introverted versus Extroverted.

The figure below describes that diagram. The person who is high on extroversion and high on stability may fall in the lower right quadrant of the circle. Those who are less stable and more introverted would fall somewhere in the upper left. According to this diagram, each of us will ultimately fall somewhere on the circle based on a sum of our responses and traits.



Temperament and Personality

Another area that has gotten a lot of attention in terms of biological determinants of personality is that of temperament.

Most parents will tell you that their children exhibit general behaviors very early

in their development. Some may be stubborn, others happy, and still others may be grumpy. We see these general emotional responses in infants and can often see a trend by the time the child is only a few months old. Many of these parents will also assert that these responses, or temperaments, seem to continue throughout the child's development.

The stubborn infant who cries when put down for a nap may become the stubborn adolescent who rebels against authority or resists society's norms. The happy and content infant may be the adult who finds friends easily and has a knack for seeing the good in others. When these temperaments are present shortly after birth and continue throughout a person's life, it is difficult to not see a biological connection.

EAS Temperament Model

Like Eysenck, other biological theorists were interested in determining how many different temperaments there are. Statistical techniques such as the Factor Analysis have been applied but with mixed results. There is one theory, however, that seems to have a stronghold in this area. Using three dimensions: emotionality, activity, and sociability, the EAS temperament model was developed.

Emotionality refers to a child's emotional reactions to environmental stimuli. In other words, a child who is highly emotional may cry easily, be more fearful, get excited quickly, or exhibit other strong emotional responses. A child low on this temperament may seem more easy going, relaxed, and less interested in his or her surroundings. As an adult, high emotionality may be related to artistic endeavors, relationships, and career choice.

Activity refers to a child's level of energy. Those high in this temperament are seen as active, prefer physical activity and games, may be more fidgety or difficult to settle down. As adults, our temperament for activity plays a significant role in our career choice, hobbies and socialization.

Finally, *sociability* relates to a person's comfort and level of interaction with others. Obviously those high in this temperament will prefer group activities,

team sports, and be more comfortable interacting in social settings. Those low on sociability may prefer solitary activities and experience anxiety around strangers or new situations. As adults, it is easy to see how our level of sociability can influence our friendships, careers choice, and hobbies.

Inhibition

Another area of biological research has focused on a child's tendency toward being inhibited or uninhibited. Research in this area began when two theorists (J. Kagan and H. Moss) set out to observe personality traits of preschoolers and then compare these same traits once their subjects became adults. This longitudinal case study model revealed that while some traits tend to change, inhibition seemed to remain relatively stable over time.

A plethora of research has been completed to study this phenomenon with relatively similar results. An inhibited child, one who is wary of strangers, more passive in his interactions with others, and more hesitant to explore new situations, tends to become an adult who is less likely to engage others, be more passive in relationships, and prefer solitary to group activities. Those rated as uninhibited similarly show similar characteristics as adults as they did when they were younger.

Some research has even shown physical characteristics to be related to a child and adults level of inhibition. For example, studies have shown that inhibited and uninhibited children differ in terms of body size, allergies, and even eye color. This suggests a very strong biological link but leaves open the questions raised earlier: Are we treated differently by others based on our physical appearance? Do we see ourselves differently based on our physical characteristics? Is inhibition directly linked to our genes or indirectly through other biological components. These questions have yet to be answered conclusively.

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Genetic Research and Biological Theory

How do we go about determining if a trait, a temperament, or a personality feature is inherited through biology or the environment? This question has been answered in part through genetic research. Genetic research, in relation to personality development, refers to studying the role of genetic and environmental factors through manipulation or convenience. In other words, studying fraternal twins raised apart would provide important information related to inherited traits. Studying adopted siblings not related through biology would allow us to look at the environmental factors that shape personality.

Obviously ethical considerations do not allow researchers to manipulate a child's environment to this degree, so the subject pool for such research is slim. Also, because these studies can be so time consuming (e.g., studying one child over a period of years), information is often gathered after the fact.

Through this type of research, however, we have realized some important information. By determining correlations between twins raised together, twins raised apart, and adopted siblings, we have found some fairly strong support that some of our personality is actually inherited. Among the areas found to be related to biology, at least to some degree, are intelligence, introversion-extroversion, and neuroticism.

Trends in Biological Theory

Like many aspects in the measurement of human differences, the study of personality has come full circle. The ancient beliefs about the inheritability of personal characteristics was replaced with more modern theories of environment, socialization, parenting styles, and sexuality. Today, biological components of personality are again gaining influence as more advanced medical techniques are developed. New discoveries such as those propelling DNA studies are fairly new but they open up a whole new area of knowledge in

the relationship of genetics and personality.

It is doubtful that we will be able to quantify the biological components of our personality. Like all areas of psychology, absolutes are few and far between, and it is impossible to completely eliminate subjectivity. We are, however, focused again on the role of biology, and even evolution, as we continue to explore the development of human personality.