

Psychology of Personality and Individual Differences: Theory and Applications

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Week 4

Lecture 8: Cattell's Sixteen Personality Factor and Eysenck's three super traits

I welcome you all to module 4, and this module 4 is about trait perspective. This is the second lecture of this module, and overall, it is lecture number 8. So, today's lecture is about more specific trait theories, and today we will be talking about Cattell's 16 personality factors and Eysenck's 3 super traits. So, before we talk about today's lecture, let me give you a brief recap of the last lecture. So, in the last lecture, we introduced the basic idea behind traits, how to define traits, and we discussed the various characteristics of traits, how to define a trait, and what the major parameters are associated with it. We also talked about Gordon Allport's trait psychology, who was the founding father of trait psychology.

We discussed some of the basic ideas proposed by him, then we talked about how to identify traits. There are three major approaches to identifying traits, these are the lexical approach, the statistical approach, and the last one is the theoretical approach. At the end, we discussed the person-situation debate in the context of traits.

What determines human behavior more strongly, whether it is the personality or the situation? So, we discussed the various aspects of this debate. Today, we will be talking about these two particular theories, which are related to trait psychology. So, we will start with Cattell's theory. So Raymond Cattell provided one of the very important trait theories, which is still used and talked about in the psychology literature.

So, his basic idea was that he defined personality mostly using the term trait. He defined personality as the characteristics of the individual that allow prediction of how they will behave in a given situation. He identified a range of traits, the diverse kind of traits that determine human personality. He also talked about 16 personality traits, which according to him are the foundation of human personality. We will be talking about that. So, Cattell defined traits as relatively permanent reaction tendencies that are the basic structural unit of the personality, which means the same thing we discussed in the last lecture.

So, trait means the same thing. It is a relatively permanent or enduring pattern of behavior of human beings by which we can identify certain characteristics or defining features of a

person. Which also distinguishes one person from another person. Now, Cattell's training was very rigorous in scientific and statistical methods, which helped him to apply more empirical and statistical methods like factor analysis to identify this basic structure of personality using traits. So, his approach of identifying traits was a statistical approach that we discussed in the last lecture where he used a specific statistical technique called factor analysis to identify a significant number of traits that can describe human personality.

So, he used statistical methods. He observed that many personality traits are similar and argued that existing trait lists could be reduced to a smaller number of fundamental traits. When he is talking about the existing number of traits, it is similar to Gordon Allport from the lexical approach, in which he summarized about 4500 traits from the English dictionary. He started with 4500 traits and then he reduced it further.

So, in a similar context, Cattell states that the existing number of trait lists could be reduced to a smaller number of fundamental traits. We will talk about how he did that. So, Cattell's work initiated the search for the structure of personality using factor analysis. His approach of identifying traits was statistical. He also had his foundation in the lexical approach, whatever was discovered till now, and then he used a statistical approach. We discussed a little bit about factor analysis in the last lecture.

It involves compiling frequently used personality descriptions from the data they collect, meaning compiling different personality descriptions from many samples. Then, they use statistical techniques to summarize the patterns. So, factor analysis gives you clusters of similar items, which group together in terms of certain similarities. Those similar clusters are called traits. So, this is how it is done.

For example, some traits like 'determination', 'persistence', 'productive', and 'goal-directed behavior' can cluster together and form one factor. So, all these traits could be part of one factor such as achievement orientation of a person. So the achievement orientation of any individual could be determined using many sub-traits.

Overall, the major structural trait is achievement orientation, and it could have many important sub-traits that are determined: persistent, productive, and goal oriented. All these sub-traits are compiled together as a cluster in the factor analysis. So, factor analysis will show the similar kinds of factors that come together, and they can form one superordinate or major structural factor, which is called a trait. So this was his approach. Cattell also did a lot of classification of traits or formed different categories of traits.

We will see some of the categories of traits. He said a trait is not just one type of trait. There can be diverse varieties or kinds of traits. So one way he classified traits is into common traits and unique traits. So common traits are basically those possessed by almost everyone to some degree.

So, these are commonly available among the population of human beings. So everybody will have some part of common trait. Some people may have a high level of this trait, while others may be low on it. But mostly, some aspects of it will be available or can be seen or expressed in the population.

That is why these are called common traits, as these are possessed by everyone to some degree. On the other hand, unique traits are distinguishing features of an individual. So, if an individual has a unique trait, that means it is unique to that person. It is not shared with other individuals.

Unique specific kinds of traits that distinguish a person from other individuals are called unique traits. So, unique traits mostly distinguish individuals. Common traits are kind of commonly available, but the degrees may differ. This is just a tabular form of distinguishing common traits and unique traits. Common traits are possessed by everyone to some degree, but unique traits are unique to individuals.

Examples of common traits are like intelligence, extroversion, as all people have these traits. So here we need to understand that Cattell also kind of introduced intelligence under personality. If you remember the first lecture where we defined the characteristics of personality, intelligence does not strictly come under personality traits, but in a broad sense, Cattell included intelligence under personality also.

So things like intelligence, extroversion, most people have these traits, but to different degrees. But unique traits could be something like a unique interest of a person. Somebody is interested in playing baseball, or let us say somebody is interested in martial arts. So, this is a very specific thing for a person. Most of the things that the person is specifically interested in determine their unique traits.

So, common traits are mostly universal due to the similarity of hereditary potential and social pressures. These are universal in a sense because as a population collectively, we have similar traits. There is some kind of common gene pool as well as similar social pressures we all face. So, some common traits develop because these are required to survive in the social world. So, that is why these are universal, at least in a culture-specific

sense. A group of people within the culture will have a lot of similar traits because there is a common social pressure, a common social environment where we all develop, and also there is a common gene pool that also tends to express those traits.

Unique traits are not universal. These are very specific to individuals. People differ in the extent to which they possess common traits. Not everybody will have the same amount of common traits. People differ because of their unique interests and attitudes.

So, unique traits mostly come from their interests and attitudinal differences. So, these are some of the differences between common and unique traits. Cattell also distinguishes between ability traits, temperament traits, and dynamic traits. So, some traits are called ability traits. Some traits also come under temperamental traits, and some traits are called dynamic traits.

So, here are the differences between these three types of traits. Ability traits determine how efficiently we work towards a goal. So, it is mostly about your ability to work in certain aspects like how efficiently you can work towards a goal.

So that efficiency level determines your ability traits. So ability traits will mostly include many cognitive traits. Like somebody may have mathematical ability, creative ability, practical ability, verbal abilities, and a lot of these intelligence-related ideas or these cognitive traits come under ability traits as they help you to reach goals, to efficiently do your work. So, mostly ability traits are related to solving problems and doing work.

Therefore, ability traits are expressed in the context of problem-solving and working towards goals. Temperamental traits, on the other hand, are like styles of reaction or the emotional tone of behavior. People have typical emotional tendencies in terms of reacting to stimuli in the environment which determines their temperamental traits. What is the emotional tone of the person?

It is a general tone. How that person reacts to different situations? Mostly in the sense of emotional tone. So that determines temperamental traits. It typically determines how we act and react to a situation.

It may include things like how assertive one is, how easygoing one is, what is the level of irritability of a person, whether the person gets irritated very easily or whether they are more calm, and so on. So that emotional tone determines what kind of temperamental traits they have. So this will come under temperamental traits. The dynamic traits, on the other hand, are mostly represents the driving force of behavior.

So these are more dynamic. So there is a force behind it. So these traits determine the dynamism of a person and define the motivation, interests, and ambitions of the person. So whatever motivations you have, whatever interests you have, whatever ambitions you have will come under dynamic traits because there is a force that propels you to do something.

So, the sense of dynamism or the sense of energy is associated with the dynamic traits. So, traits could also be distinguished in this way: ability, temperamental, and dynamic traits. Another way to differentiate traits is based on surface traits and source traits. So, as the name suggests, a surface trait is more of a superficial or expressed trait, whereas a source trait is the source from which the surface trait emerges. Surface traits are characteristics that correlate with one another but do not consist of a single factor.

Surface trait is composed of several behavioral elements. For example, neuroticism as a trait is composed of anxiety, indecision, and irrational fear. Now, these are expressions. You do not see neuroticism as such in terms of expression. What you see in the expression of neuroticism such as people will have a lot of anxiety.

People with a neurotic trait will not be able to decide. Indecision is a characteristic associated with people who are not able to decide a lot of things because of anxiety. People also have irrational fear. These are surface-level traits which get expressed in actual behavior. But we say neuroticism is a source trait, because this is the source trait from which anxiety, indecision, and irrational fear are expressed. So, the foundational source level or the deeper level trait is neuroticism. But at the surface level, it is expressed in terms of anxiety, indecision, and irrational fear. Source traits are more fundamental traits like extroversion and neuroticism. These are like source traits and they have different expressions in behavior. One trait may have multiple expressions. Surface traits are less stable and less permanent. They keep changing in terms of expression. So, even people with neuroticism may show different levels of anxiety at different times.

Therefore, surface traits can be more or less, very unstable and less permanent. These are more of an expression in a particular situation. Source traits are more permanent and stable. So, for somebody who is neurotic, it does not change. So, your inner structure of that neuroticism will remain relatively permanent.

Years after years, you will remain a neurotic person or neurotic characteristics will be present within you. But your expression may not be very permanent all the time. Your sense of anxiety will be present in a lot of situations, but it is less stable. However, the

source trait itself is much more stable because it is of a relatively permanent characteristic. Source states are more important in terms of describing personality.

Surface traits are important because it is the expression of source traits, but these are comparatively less important in terms of describing personality. Now, this source trait can also be classified based on its origin, from where this source trait starts. Based on that, there can be constitutional traits, and there can be environmental-mold traits. So, constitutional traits are biological in nature which arises from the biology of the body. It is not necessarily innate or genetic.

It could be genetic, but it is not necessarily genetic. But their origin is from the biological aspects of the body itself. Environmental-mold traits, on the other hand, come from social and physical environmental influences. These traits are acquired from the outside environment. So, constitutional traits emerge from the biological aspects like your body chemistry, neurochemistry. It can come from genetics also.

Examples like behavior from alcohol and drugs. So, let us say somebody takes drugs and alcohol for a long time. So, there will be some biological changes in the body itself, which will impact their behavior, like the person may become careless, they may talk too much, may talk nonsense, may have slurred speech, and so on. Now, these changes in behavior may become relatively permanent if people take drugs and alcohol for a long time.

So, it originates from the biological changes because of taking the substances. So, that can be called a constitutional trait. On the other hand, let us say behavior that is influenced by upbringing, like what kind of environment you are born and brought up in, people in the lower class, upper class, middle class. You will see there are subtle differences in their behavior.

These differences are simply because of the environment in which they are born and brought up. So, there will be some differences in how they view the world and how they behave. These behaviors are completely taken from the environment itself, there is nothing biological about it. So these are called environmental traits.

So this is how they are different. Now, because source traits are most important in terms of Cattell's theory, he is focusing on source traits because he said source traits are the most important traits which describe personality. So he said, in order to understand personality or describe personality, we need to understand source traits. His theory is called the 16 factors theory. He categorized 16 source traits which can define human personality.

He recognized the 16 personality factors using a questionnaire he developed and using factor analysis as a tool from statistics. His journey of identifying these 16 source traits comes from Allport's 4500 words for traits that he did from his research using the lexical approach, as we have discussed in the last lecture, where Allport noted 4500 words from the English dictionary, which are trait-like descriptions of human personality. He started from there and then using a team of raters and experts, he removed synonyms, reducing them further to 171 traits.

So he found out that out of 4500, 171 traits make more sense and they are more unique traits. Many of them are again synonymous words. Raters then assessed individuals on these traits, further narrowing the list to 36 surface traits. So, out of 171 traits, many raters, after assessing these traits, could narrow it down to 36 surface traits. Surface traits are more of an expression like traits, not source traits.

So, from a list of 171 traits, he could narrow it down again to 36 surface traits, which are more like what is expressed in the behavior. He identified 10 more surface traits through additional research and review of psychiatric literature. So, he added 10 more surface traits to the already narrowed down 36 traits, which led to 46 surface traits.

He said these are sufficient to describe individual personality differences. So, these are surface traits; remember, these are not source traits. So, beginning with the 46 surface traits, Cattell employed a statistical method to see the patterns among these 46 surface traits and to cluster them into a smaller number of source traits. Because these are surface traits, they can be grouped to form more latent structures or latent factors, which are called source traits. So, he aimed to factor-analyze measures of all these 46 traits collected from a large number of samples.

We discussed the process in the last lecture. Through the factor analysis of extensive data sets, he identified 16 major source traits out of these 46 surface traits. So, from 46 surface traits, using factor analysis, he narrowed it down to 16 major source traits. So, these source traits will have expressions in terms of surface traits, which altogether form 46 traits.

He said these 16 major traits represent the basic structure of human personality. So, according to him, we can describe everything about human personality using these 16 source traits. Additionally, Cattell ranked these traits based on their importance in predicting individual behavior.

Some are more important, and some are less important. According to the list that we will be discussing, the initial ones are more important, and as we go down the list, they are less important in terms of describing personality. So, this is the journey of Cattell, how he started with 4500 traits and then finally came to the 16 source traits. Now, each of the 16 source traits represents a continuum. So, there will be two ends of each trait.

One will be a low score, one will be a high score. Extremely low and extremely high scores, there will be two ends of any trait. So, people can have a very low score in one trait. People who score high on a trait will be at the other end. Cattell emphasized that almost all source traits have both positive and negative aspects.

So, every trait will have positive and negative aspects, meaning if you take both extremes, one will be a positive trait, and one will be a negative trait of the same trait. One will be expressed negatively, and one will be expressed positively on the same continuum. So, let us see what these traits are. So, you see, this is the list of traits that Cattell talked about, 16 traits. So, these are the list of traits.

There are more on the next slide. So, I will just read out a few of these, and obviously, the details will be given in the handouts on the portal itself. So, the first trait is outgoing versus reserved. So, basically, these are two extremes. One end will be outgoing people, and the other end will be reserved people.

He sometimes used some technical terms to explain this. Affectothymia and schizothymia. So, it is more of a technical term, but it is related to outgoing and reserved traits. So, these are two extreme ends of the trait. So, one endpoint is outgoing, and another endpoint is reserved.

So, for the same trait, people will be completely different from one another at the extreme ends. People who score low on this trait factor A will be reserved, aloof, detached, and more like introverted people. People who score high on this will be outgoing, warm-hearted, easy-going, and more like an extroverted individual. So it is the same as the introvert-extrovert dimension. So this is one factor.

Next is intelligence. As I said, he also included intelligence in the personality factors. So high and low. So, people at the high end will be highly intelligent, and low intelligence will be the other endpoint. So, basically, it is self-explanatory: low and high intelligence.

The third factor is stable-emotional. One is stable, and the other is emotional. It is more related to neuroticism, which we discussed. So it is also connected to ego strength.

Ego is not in the sense of pride but the ability to connect with reality and deal with things. So, in that sense, people who have high ego strength are more emotionally stable compared to people who have low ego strength. So here, the term ego strength is used in a different context. So, extreme ends will be stable and emotional.

People who score low on ego strength tend to be easily upset, while people who score high on ego strength tend to be calm and able to manage their emotions in much better ways. Another factor is 'assertive-humble'. It is also called the dominance-submissiveness category of a trait. At one end, people are very dominant and assertive; at the other end, people will be humble and less assertive. So, a low score on this trait will mean that the person is submissive, obedient, and unsure, while a high score will mean that the person is dominant and assertive. Another factor is called 'happy-go-lucky-sober'. It is also called the 'surgency-desurgency' category. So, one end is happy-go-lucky, and another is sober. A low score means the person is serious, sober, and depressed, while a high score means the person is happy-go-lucky, enthusiastic, has more of a happy attitude. There are other traits like 'conscientiousness-expedient', which is related to the superego. Superego is related to the sense of morality. So people at one end are conscientious, and at the other end are expedient. So, people who score low on this factor will be expedient.

Low in superego means people will be less in the aspects of moral aspects. So they will try to do things irrespective of how morally it impacts others. So, if something needs to be done, they will do it anyway, whether it is morally right or wrong. This is termed as expedient. Conscientious people are very morally strong, and they will think a lot about whether it is right or wrong. These people are high in superego. Other factors are 'venturesome-shy'. People who score low in this factor are those who are shy, timid, aloof, and restrained. People who score high are venturesome, bold and adventurous. There is another trait called 'tender-minded versus tough-minded'. So, again, people who score low will be tough-minded and self-reliant, and those who score high will be tender-minded and sensitive. So, these traits are opposite in a sense.

In some traits, the low score will have negative attributes, while in some traits, the low score may have positive attributes, depending on how it is worded. So, there are other traits related to 'suspicious versus trusting'. Again, trusting and understanding people will have low scores on this trait; while, high-scoring people will be suspicious, jealous. Another factor is 'imaginative versus practical'. People with low scores are practical and down-to-earth, and those with high scores are imaginative and absent-minded. Another factor is 'shrewd-forthright'. People with low scores will be very forthright, naive individuals.

While those with high scores will be shrewd, worldly, complicated individuals who know the tricks of the world.

Then another one is 'apprehensive versus placid', which is also called 'guilt-proneness versus assurance'. People with low scores in this are self-assured, secure individuals, while people with high scores are apprehensive, insecure individuals. So, like this, these are the 16 source traits he talked about. These traits are expressed in diverse ways.

So, we have discussed 12 traits so far. According to Cattell, the last four are called Q factors. These are not very good predictors of behavior, but these are still important. These are called Q factors.

So, Q1 is related to 'experimenting versus conservative' individuals. So, at one end, people will be very experimental, and at the other end, people will be very conservative. So, people with a low score here are very conservative. They dislike changes. They want everything to be very structured; whatever is going on should continue.

They don't want any change and are very conservative kind of individual. People with a high score on this are very radical and experimenting individuals. They are more open to new experiences. They are quite fine with changes.

Q2 is 'self-sufficiency versus group tied'. So, one end is self-sufficiency, and the other is group tightness. So, people with a low score here are group-dependent. Whenever they do anything, they are very dependent on the group. People with a high score on this are very self-sufficient, independent individuals.

Q3 is related to 'controlled versus casual'. So here, people with a low score are very uncontrolled, lax, and impulsive. People with a low score will be very uncontrolled and impulsive kind of individuals. People with a high score here are very controlled and compulsive. The last one is 'tense versus relaxed'.

Again, people with low scores here are more relaxed, tranquil, and composed individuals. People with high scores here are tense, driven, and fretful. So, these are Cattell's 16 personality factors. These are source traits, and according to him, these are a good enough number of traits to describe human personalities. According to Cattell, every individual difference and characteristic can fall under these 16 factors. Now, this theory has also been criticized in certain aspects.

We will not go into too much detail about the criticism, but we will discuss some of the major points. One thing people criticize about this theory is that it is very complex. Sixteen seems like too many, and in practical terms, it becomes a little bit complex because identifying them and using them in a practical setup sometimes becomes very complex. So, this is one kind of criticism. Another is that, you know, people could not replicate these 16 factors in other research work. So, that is also a questionable thing.

So, critics of Cattell's factor analytical approach argued that despite his claim of objectivity, a lot of subjectivity was involved in naming those traits. So, that is where a lot of differences come with other researchers, where they could not actually find those exact 16 traits again. The decisions made during the data collection, test selection, and factor labeling are susceptible to personal biases. So, a lot of his own ideas were used in terms of labeling them and describing them, which could also be one reason that people could not replicate them again. So, this subjectivity may explain difficulties in replicating Cattell's findings and confirming the 16 source traits. So, these are some of the criticisms. But despite the criticism, this theory has a lot of impact. Although it is not the most significant theory in today's time, it has impacted a lot in terms of understanding and refining further in terms of trait theories. We will be talking about some other theories in today's lecture as well as in the next lecture. Now, the next theory that we will be talking about here is Eysenck's three super factor theory. So, here is a person who said we do not need 16 factors. He said three factors are good enough.

So, let us see what his ideas are. Hans Eysenck spent most of his career focusing on the measurement of personality. He was completely obsessed with personality. He agreed with Raymond Cattell, that personality consists of traits derived from factor analysis. So he agreed on the methodology part of it that we should use factor analysis to derive personality traits or understand traits.

However, he criticized the method for potential subjectivity and difficulty in replicating findings, which is a major criticism of Cattell's theory that a lot of subjectivity gets involved in labeling traits. That is why there is an issue in replicating those 16 traits in future research. Eysenck also used factor analysis as a foundational method, but he also relied on Personality tests and experimental studies that included a broad range of variables to supplement his research.

So, he used other sources of data, not just factor analysis. Eysenck endorses the conventional view that personality traits are inherited from parents and families. So one of

the ideas that is very dominant in his theory is that personality traits have a very strong biological component. A lot of these personality traits are very significantly influenced by parental and genetic influences. Over 50 years ago, he emphasized the significance of biological aspects or genetic inheritance in shaping personality. The evidence for a lot of his ideas was found in recent researches as we discuss the biopsychological perspective where we could see a lot of personality traits have a very strong genetic influence. We have already discussed the evidence in the third module. So, Eysenck pointed out that physiological differences between individuals often lead to behavioral differences. This reinforces his claim that biology plays a very crucial role.

So, people differ in their physiological reaction patterns. Bodily, there is a difference between people in terms of how they react and their physiological arousal pattern. These differences create a lot of psychological differences in terms of reaction patterns. Initially, he was met with a lot of skepticism, but his views were later supported by many researchers, especially the biological part of it. So he said human personality can be described using three super traits.

He said these three are good enough super traits, which are kind of source traits if you talk about Cattell's terminology. He said there are three broad dimensions of personality. These are psychoticism, extroversion, and neuroticism. He said these three are super traits. Most of the other things are expressions of these three.

These three super factors are known collectively as Eysenck's PEN model. Why is it called the PEN model? So, P is for psychoticism, E is for extroversion, N is for neuroticism. So, in short, it is also called the PEN model. Along with these 3 super factors, he also identified more specific traits called narrow traits associated with each of these factors.

So, these super traits are more like source traits of Cattell, and they have many narrow traits associated with each of them in terms of how they are expressed. We will see what their sub-traits are. These narrow traits provide a detailed understanding of the behaviors and characteristics that define them. So, that is the idea.

He says there are three super traits, and other things are expressions of them. So, let us start with the first one: extroversion. Extroversion is about some people being outgoing, while some people prefer being by themselves. So, that dimension of extroversion can have a high score or a low score. Low scores are people who are introverts.

So, extroversion may be expressed using many sub-traits. Extroversion has many characteristics, which may be expressed in terms of sensation seeking. Some people are more oriented toward sensations. They always need some stimulation in life. They always want to go somewhere, party somewhere or do something.

Many more sensation-seeking traits are associated with extroversion. So, people who are extroverts seek more sensations in life. They are more sociable. They are more lively, carefree, dominant, active, assertive, surgent, and venturesome.

So, these are some of the sub-traits that form the extroversion trait. So, again, he found this sub-trait using factor analysis as a method. These are some of the direct quotations by Eysenck himself in one of his books on how he defined extroversion. So, these are “*A typical extrovert is sociable, likes parties, has many friends, needs to have people to talk to, and does not like reading or studying by himself or herself. He craves excitement, takes chances, often sticks his neck out, acts on the spur of the moment, and is generally an impulsive individual. He is carefree, easygoing, optimistic, and likes to ‘laugh and be merry’. Altogether, his feelings are not kept under tight control, and he is not always a reliable person*”. So, these are some of his observations. This is how he defined it.

These are the exact words of Eysenck. In contrast, he said “*typical introverts are quiet, retiring sorts of people, introspective, and fond of books rather than people. They do not like excitement and take matters of everyday life with proper seriousness. They tend to plan ahead, ‘look before they leap’, and distrust the impulse of the moment. They keep their feelings under close control. They are reliable and somewhat pessimistic*”. So, introverts are kind of opposite to extroverts.

So, these are different types of individuals; there is no judgment here. It doesn't mean one is better than the other. These are just different types of individuals. Both have their problems and advantages. So, I think he explored the biological and genetic differences between extroverts and introverts. He says that biologically, these two types of individuals are different in terms of physiological reaction patterns. He discovered that extroverts have a lower level of cortical arousal compared to introverts. Cortical arousal means people get very easily aroused physiologically, get very easily disturbed, or the physiological reaction pattern is very fast. So, extroverts have lower levels of physiological arousal.

So, they need more stimulation in life to get that level of arousal. On the other hand, introverts are very easily aroused, and that is why they don't need too much extra excitement or sensation-seeking in life. Because of these biological differences, extroverts

need more stimulation to get excited. On the other hand, introverts' physiological arousal is already high. So, they don't seek out more and more. Consequently, extroverts seek more excitement and stimulation to raise their level of arousal. Introverts' level is already high. They get much more excited with just a little stimulus.

So, physiological reaction patterns are much faster in introverts compared to extroverts. Conversely, introverts avoid such stimulation because their cortical arousal levels are already high. This leads introverts to react more strongly to sensory inputs, showing greater sensitivity to lower stimuli and having lower levels of thresholds than extroverts. So, according to Eysenck, there can be some basic biological differences in terms of reaction patterns among these two types of individuals. People who score high on extroversion on Eysenck's personality inventory have been found to experience more pleasant emotions and be happier than those with low scores.

It is simply because of the social context; people who are very outgoing and social have more friends and are more likely to find more happy moments. So that could be one of the reasons for this. The next comes neuroticism.

So neuroticism is more about emotional stability. So, again, it has many sub-traits. It is related to anxiousness, tension, and maybe a little bit of depression, irrational fears, shyness, guilt feelings, moodiness, low self-esteem, and emotional reactions. So, these are all related to a high score on neuroticism. So, Eysenck suggested that neuroticism is primarily inherited. He found that it is mostly explained using biological differences because of genetics. There is also a learning aspect to it, meaning the environmental influence to it, but genetics play a more important role. Individuals high in neuroticism exhibit greater activity in brain areas. People high on neuroticism are very anxious and always worries a lot.

People high on neuroticism exhibit greater activity in the brain areas controlling the sympathetic branch of the autonomic nervous system. It means there is a part in our nervous system called the autonomic nervous system, which functions automatically. For example, the nervous system is responsible for the heartbeat, the temperature of the body, and sweating, which are controlled by the autonomic nervous system. We don't control these responses, but these are the body's automatic responses to the situation. So, you are not controlling your heartbeat; it is done by the autonomic nervous system. That is called the sympathetic branch of the autonomic nervous system, which deals with many of these functions where, whenever there is an emergency or threat, the body reacts in a very strong

way. So, those are done by the sympathetic branch of the autonomic nervous system. So, people with high neuroticism have a naturally higher activation of the sympathetic branch.

So, most of the time, they are emotionally stronger in terms of reaction. So, in neurotic people, this system overreacts even to mild stress. So, even if there is very little stress, they will react very strongly because their physiological arousal system is already very strong. This leads to chronic hypersensitivity and a heightened emotional response to minor situations. So, that is why too much worry and emotional instability could be attributed to this biological system, according to Eysenck.

Eysenck argued that these biological reactivity differences are innate, and some people are genetically programmed. The third one is called psychoticism, which is again a more controversial part of his theory and was not very well received by others. So, psychoticism is mostly related to characteristics such as aggression, impulsivity, lack of empathy, coldness, creativity, egocentricity, tough-mindedness, impersonality, and antisocial behavior. So, people with a psychotic trait or people high on this trait will exhibit all these characteristics.

So, mostly, people high in psychoticism are very tough-minded. Some of these people could engage in antisocial behaviors, such as crime. They are very unempathetic. They don't have much sensitivity. These are some of the characteristics related to psychoticism.

So, according to Eysenck, these people may be cruel and inhuman at times, lacking feelings and empathy and altogether insensitive. They have a liking for unusual things and a disregard for danger. They like to make fools of other people and upset them. So, it is a kind of a very negative trait. People also criticize that making it a part of a normal personality trait is not a good idea because this is a very deviant trait.

So, people who score high on this trait tend to have lower emotional well-being and face greater problems with alcohol, drug abuse, and violent criminal behaviors compared to those who score low. So basically, a high score on this trait increases these tendencies of behavior which may lead to alcohol, drug abuse, and violent behaviors. Not every person high on psychoticism needs to be like that, but it will increase the chances of engaging in those kinds of behaviors. Paradoxically, he found that a lot of people who score high on psychoticism are also highly creative. This was his finding.

I am not sure how much of it was replicated later. But he said a lot of people who score high on this psychoticism are also very creative people. So, research indicated a significant

genetic component. Again, he said the genetic component is there for everything, but it also shows that individuals scoring high on psychoticism often had more authoritarian and controlling parents, highlighting the potentially harmful influence of childhood environment. So there is a possibility of a strong genetic influence, but some parenting influences could also contribute to this trait. Men generally score higher on this trait. So, Eysenck found that most of the people who score high on psychoticism are mostly men as compared to women.

This led Eysenck to suggest a link between psychoticism and male hormones. So he said there may be some connection of male hormones with this trait. Because he was looking for the biological reasons behind it. So, final thoughts on Eysenck's theory. Eysenck claimed that there are three super traits, namely, extroversion, neuroticism, and psychoticism. These constitute the basic structure of personality. Cattell identified 16 factors, while Eysenck identified 3 factors. He developed this questionnaire to measure these three traits, and one can check their scores for these traits.

Eysenck suggested a link between the clinical conditions of neurosis and psychosis with these scales. He said it is possible that many people who score high on neuroticism and psychoticism may develop clinical conditions or disorders, but not necessarily all the time. It may increase the chances. Individuals who score high on these scales are not necessarily clinical patients or disordered individuals, but they are more likely to develop these disorders. The chances are high. A high score indicates a predisposition that may manifest under adverse circumstances. Whenever there are adverse circumstances in life, these tendencies may emerge, and one may become disordered. I believe that society benefits from the diversity provided by people characterized by various aspects of these three dimensions.

These are different expressions of people. There are different kinds of people. An ideal society will allow individuals to utilize their traits and abilities optimally and provide opportunities to express them. However, adaptation to the social environment varies among individuals. Some people can adapt, and some people may not be able to adapt.

For example, he said a person high in psychoticism is usually not successful and is characterized by hostile and aggressive behavior. Now, it depends on that person how he channels those traits. The same person may become emotionally disturbed or psychologically disordered and antisocial, exhibiting criminal behaviors. On the other hand, the same person can channel these aggressive traits into socially acceptable activities

like coaching college football or getting into sports where a lot of aggression is required, like boxing. So, the same trait can be expressed both positively as well as negatively. One can become a criminal, and at the same time, the same traits can be channeled positively by using them in a more socially acceptable way. For example, you can use your aggression in sports and become a good sportsman. So, it all depends on the individual. So, traits and dimensions are determined primarily by heredity.

Research shows a stronger genetic component of extroversion and neuroticism. We have already discussed all these pieces of evidence in the third module. No research shows that traits are 100% genetic. It could be up to 60%, 70%. So, there is still room for environmental influences for any trait.

While he acknowledged the role of environment and social influences, such as family interaction in childhood, he believed their effects are less or limited as compared to genetics. So, evidence from identical twins shows that a lot of these traits have a strong biological component. Even cross-cultural research from different cultures and countries also found evidence for the three personality dimensions of Eysenck in different countries like the United States, England, America, Australia, Japan, etc. This cross-cultural consistency further shows the importance of inherited factors in personality. So, these three factors also found quite good empirical support.

However, this theory has also been criticized for certain aspects because no theory is perfect, and every theory has its problems. Despite much empirical evidence, Eysenck's theory has been criticized for reducing complex human behavior into a few dimensions. So, his criticism is just the opposite of Cattell's theory. Cattell's theory had too many factors. His theory has too few factors.

We know human beings are very complex. We cannot just summarize them using just three factors. This criticism came from more recent research where we find more optimal theories. We will be talking about those in the next lecture. So, based on the views of the more recently emerged trait theories, these three factors looked too few in terms of explaining all the diverse traits of human beings.

Some psychologists believe this oversimplifies the rich diversity of human personalities. Critics also argue that a broader and more nuanced understanding of personality is needed. This is too simplistic. The inclusion of the psychoticism trait has also been very controversial. Critics argue that it kind of includes normal psychological variation with a pathological trait, which can mislead and stigmatize people. Psychoticism as a trait has a

very strong connotation for pathological aspects and antisocial behavior. If somebody scores high on psychoticism, it can lead to stigma and misleading understanding. So, people criticize this particular trait for being included. Because the other two traits are, anyway, part of almost all theories: neuroticism and extroversion. But this particular trait has been criticized for being included in the normal population, which is a kind of pathological trait.

These are some of the criticisms of this theory. So, this is about these two trait theories, which still play a very important role in the understanding of traits. In the next lecture, we will be talking about the most accepted trait theory, which has the best empirical support, and whenever we talk about trait theory, we talk about that theory, which is called the big five factors. We will be talking about it in the next lecture. So with this, I will stop here. Thank you.