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BLOCK 4

PERSONALITY AND INTELLIGENCE



UNIT 7 PERSONALITY*

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7.0 LEARNING OBJECTIVES

After reading this unit, you will be able to,

- know the definition of personality;
- explain the nature of personality;
- compare and summarize the various theories of personality; and
- describe the various methods to assess personality.

7.1 INTRODUCTION

Personality has always been a topic of discussion among the common people, but defining it and outlining its nature has always been a difficult task for everyone including psychologists. When we make statements like, “she is a good doctor”, or “I really like M.S. Dhoni”. Then, do we really judge the competence of the doctor's medical knowledge or her professionalism? Do you like M.S. Dhoni because he plays very well or because he is really efficient in leading his team or due to his down-to-

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earth attitude? So, what do we actually look for while describing someone's personality? How do we actually define it?

The word *personality* has been taken from the Latin word **persona**-the mask used by actors to represent characters in Graeco-Roman theatre play. As the character changed, the mask of the actor also changed. So, does this mean that the word personality refers to our ever-changing persona? Yes, to some extent. Our behaviour is not always constant or predictable. Sometimes, we behave as predicted, sometimes we behave quite differently in a familiar situation, and sometimes our behaviour becomes completely unpredictable. Due to our ever changing yet stable behaviour, there is a widespread confusion over the concept of personality. Thus, it may be said that personality is an individual's unique and relatively stable patterns of behavior, thoughts, and emotions (Nelson & Miller, 1995; Zuckerman, 1995) In this unit, we will discuss the definition, nature, and various theories of personality. We will also look at the ways psychologists measure personality.

7.2 DEFINITION AND NATURE OF PERSONALITY

Personality refers to the distinctive attributes of a person that characterize him or her. It is to understand what it makes people unique and different from each other. According to American Psychological Association, "Personality refers to individual differences in characteristic patterns of thinking, feeling and behaving." It further states that, "the study of personality focuses on two broad areas, one is understanding individual differences, in particular personality characteristics, such as sociability or irritability. The other is understanding how the various parts of a person come together as a whole." Personality is also defined as "an enduring characteristics that may change in response to different situations" (Schultz and Schultz, 2013, p.8).

There are special qualities of the person, his or her traits. These traits could be the way the person interacts with other people, how he or she speaks, and the behavioral responses. The traits are based on the observations that we make of how people behave in different situations. These are those characteristics that also help us to predict how people will behave when faced with a similar situation. Hence, these are relatively consistent behavioral styles. Traits represent the thoughts, feelings and behaviors that help to describe the people as accurately as possible. Traits could be selected according to job specification such as punctuality, sincerity or a social trait such as honesty, intelligence, wit etc.

Traits are also used to categorize people into various types such as "introvert" or "extrovert" or a "leader" and so on. The type tends to classify people according to some common group of traits that are meaningful in predicting behaviors. The concern here is how to assess the traits and what is the reliability of the traits over a period of time. People also modify behaviors according to situations and social circumstances. In such a position then what traits are to be considered representative of the people's personality is difficult to ascertain. But our behavior is a result of stable internal characteristics that are unique to the individual (personality) and situational factors (social and environmental factors) that surround us. This perspective is known as *interactionist perspective*, which is at present, widely accepted by most of the psychologists.

7.3 THEORIES OF PERSONALITY

The early theories of personality were concerned with physical appearances. German physician Franz Joseph Gall (1758–1828) forwarded the idea that personality could be measured by bumps on the skull, which was known as *phrenology*. William Herbert

Sheldon (1898–1977) proposed that personality could be determined by ‘body types’, namely *ectomorphs* (lean and thin people), *endomorphs* (high body fat and rounder physique) and *mesomorphs* (well-built and muscular). This approach was known as *somatology*. Both the ideas, phrenology and somatology were rejected because of unscientific methodology. Recent researches in personality psychology are scientific and have offered new perspectives to the understanding of personality. This section will describe the major theories of personality.

7.3.1 Freud’s Personality Theory

Sigmund Freud, a physician by profession, was the major contributor of psychoanalytic theory of personality. He developed his theory while doing clinical practice with patients. “Unconscious mental processes” is central to his theory. It refers to those desires, needs, and motivations for which we are not aware. Further, according to Freud, aspects of human behaviour such as aggression and sexual desires also play an important role in our personality.

In order to explain how our *psyche* (mind) works, Freud proposed,

- *A topographic model of the psyche* (explains how our mind is organised)
- *A structural model of our personality*
- *Psychosocial Stages of Development*

A topographic model of the psyche

In view of Sigmund Freud, our mind can be divided into three levels; conscious, preconscious and unconscious. Freud published this idea in *The Psychopathology of Everyday Life* in 1901. According to him, our *conscious mind* is that part which deals with the current information. That is, all the thoughts, feelings and actions of which you are aware at the very moment are part of the conscious mind. *Preconscious or subconscious mind* deals with all those information for which you are not currently aware but can become only if you pay attention. The last level of mind is *unconscious*. This part of mind stores those socially unacceptable needs, desires, motivations and feelings for which you are unaware of. According to him, this unconscious part of mind plays a vital role in influencing our actions.

A structural model of our personality

Freud proposed that our personality consists of three elements namely, id, ego, and superego. Before explaining in detail, it is important to mention here that id, ego, and superego are just concepts and they do not have any physical or physiological basis.

Id: This part of personality operates unconsciously. It deals with basic instincts, biological needs, and aggressive impulses. It is the most primitive part of human personality present since birth. From id, other parts of the personality (ego and superego) develop. It works on *pleasure principle*-tendency to avoid pain and seek pleasure. The aim of id is to gratify one’s need immediately without considering the moral values of the society and the individual. *Eros* and *thanatos* are the two driving forces of id (*Eros* is the god of love in Greek mythology). According to Freud, in the context of id, *Eros* is the life force. It is responsible for our life instinct and survival, which includes sexual desire, reproduction desire, and pain avoidance. The counterpart of *Eros* is *Thanatos*-the death force or instinct (*Thanatos* is the god of death in Greek mythology). It is responsible for negative feelings like, violence, aggression, and hate. The aim of *thanatos* is to balance the drive of *Eros* by driving

us towards death and destruction. When personality is dominated by id, then the individual tends to become more impulsive. Such people will do what they want irrespective of time, place and situation, just like a child.

Ego: The part of the personality responsible for the reality check is known as ego. Ego works on *reality principle*, delaying id's gratification until an appropriate and more realistic situation is not found. For instance, a 10-year-old child wants to eat a scoop of ice-cream kept in the refrigerator. But the child knows that eating ice-cream without seeking permission from parents will be punished. Thus, the ego restricts the child for instant need gratification.

This part of personality emerges from id and its main objective is to strike a balance between id's impulsive needs and the reality of this world. It is the decision-making component of our psyche and works on logic only. In the words of Freud, "ego is that part of the id which has been modified by the direct influence of the external world"(Freud, 1923). If ego would not be able to resolve the conflict between the impulsive demands of the id and realistic demands of this world, then it would lead to the development of anxiety and stress. To ward off this anxiety, individual will be motivated to use unconscious *defense mechanisms* (we will talk about this in the later section).

Superego: It is the moral master or moral guru of our personality. Let us continue the same example referred above. Whether that 10-year-old child will ask permission from parents or not for eating a scoop of ice cream depends on the development of her/his superego. Since seeking permission is morally correct behaviour, it will indicate the presence of superego in the child. Role of the superego is to internalise the moral and ethical value of society through the process of socialisation. It controls the impulsive urges of the id and pursues ego to choose morally appropriate behaviour instead of only realistic behaviour. This part of our psyche develops between the ages of three to five years. Further, according to Freud, our superego consists of two systems: (i) conscience and (ii) ideal self. The *conscience*'s role is to punish or reward ego, through the feeling of pride or guilt, depending on its behaviour. For example, if ego gives in id's demand and breaks the moral code of conduct, superego will make you feel guilty about your behaviour. The second system, the *ideal self* is idealised picture of your own self, also does the job of making you feel guilty or pride, depending on your behaviour.

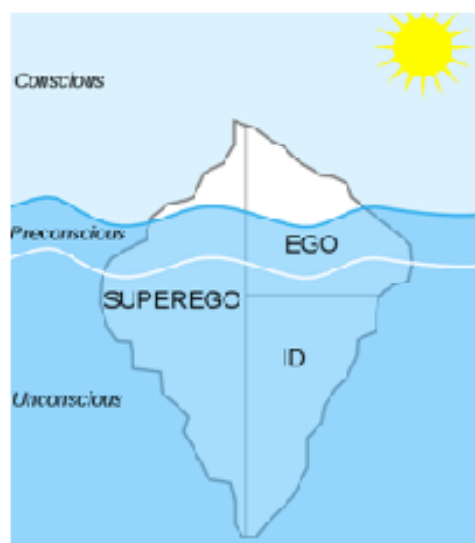


Figure 7.1: Diagram of Freud's psyche theory
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Ego Defense Mechanisms

One of the roles of ego is to protect the person from anxiety and stress. So, when anxiety and stress from the forbidden desires and motives become overwhelming, we tend to use some psychological strategies, known as ego defense mechanisms. According to Freud, the sole aim of employing these ego defense mechanisms is to protect our psyche from anxiety. A brief description of eight important defense mechanisms have been described in Table 7.1.

Table 7.1 A Summary of Ego-defense Mechanisms

Mechanism	Description
Repression	Unconscious denial of impulses or memories that are too frightening or painful
Rationalization	Reinterpret behaviour in a logical or socially desirable manner so that what we do seems to be rational.
Reaction formation	Unacceptable feelings or impulses are controlled by establishing behaviour patterns which are directly opposed to them.
Projection	Ascribing one's own undesirable qualities to others.
Intellectualization	Attempting to analyse problem in abstract, intellectual terms away from feeling, affect and emotion.
Denial	Denying that an unpleasant reality exists
Displacement	Transference of wishes or desires from their original object or person to another object or person.

Freud proposed a five-stage model of development of personality. According to him, the core aspects of one's personality developed by the age of five remain unchanged throughout life. Further, he stated that to move from one stage to another, a child needs to resolve conflicts of each stage successfully. Otherwise, it will lead to *fixation*-a continuation of an early mode of satisfaction in later life (The Cambridge Dictionary of Psychology, 2009). For example, individual fixated at an oral stage may have drinking or smoking habits. In the following section, we will briefly talk about five stages of psychosexual development.

Stage I: Oral Stage (birth to 18 months)

Mouth is the source of pleasure during this stage. Children completely depend on their caregivers especially mother. They derive pleasure and understand the world around them through sucking and swallowing. Over gratification or under gratification may lead to the fixation at this early oral stage resulting into the development of over-eating behaviour, drinking or smoking in adulthood. Freud called such people as *oral-incorporative* or *oral-ingestive*. Later during this stage, children experience pleasure from chewing and biting. Unable to resolve the psychological conflict of this stage may develop the habit of nail biting and object chewing in adulthood. Freud further pointed out that these people are more critical and sarcastic in nature. He referred such people as *oral-aggressive* or *oral-sadistic*.

Stage II: Anal Stage (18 months to three years)

During this stage, children face the demand of their society for the first time to control

and delay the expulsion of urine and faeces. Children experience pleasure in this stage from their bowel and bladder movement. Freud believed that too harsh or too lenient toilet training may cause fixation at this stage, resulting into either being messy, lesser self-control but generous (called as *anal expulsive*) or being tidy, orderly but mean (called as *anal retentive*).

Stage III: Phallic Stage (three to five years)

Genitals become the erogenous region during this stage. Phallic word comes from the Greek word *Phallos* which means penis. Children knowingly or unknowingly touch their genitals for pleasure. During this stage, they understand the difference between males and females. Freud proposed that male child experiences *Oedipus complex*, which involves sexual feeling towards their mother, feeling of rivalry for the father, as well as a threat of getting punished by the father for having a desire for mother. The counterpart of Oedipus complex is *Electra complex*, experienced by female child. It involves the sexual attraction for father, feeling of rivalry for mother and a threat of getting punished by the mother for having this feeling towards father. Successful resolution of this complex develops mature sexual identity. According to Freud, by the end of this stage personality is formed completely.

Stage IV: Latency Stage (six to twelve years)

The sexual energy during this stage is channelised towards education, sports and social activities. This leads to no or little interest for the opposite gender.

Stage V: Genital Stage (thirteen years to adulthood)

The sexual energy returns again in this stage. Successful completion of previous stages will help in developing a mature intimate relationship with the opposite sex. Whereas, unresolved issues of previous psychosexual stages will start exhibiting during adulthood, leading to difficulty in establishing healthy intimate relationship with the opposite sex.

Freud devised *psychoanalysis* to treat psychological disorders.

7.3.1.1 The Neo-Freudians: Followers and Defectors of Freud

A number of theorists followed Freud's work. Some theorists initially worked with him but later defected and developed their own theories. To differentiate their work from Freud and to get due recognition, they called themselves as *neo-Freudian* or *post-Freudian*, *neo-analytic* or *psychodynamic*. Some of the prominent names include Adler, Horney, Fromm, Jung, and Erikson. Since, it is not possible to cover all the theorists, the focus will be given to the theories of Adler and Jung.

Alfred Adler: Individual Psychology

Alfred Adler (1870-1937), an Austrian medical doctor, gave importance to the social context in the development of personality as well as the interpersonal relationships. He suggested that everyone strives to attain glory, power, superiority and overcome all obstacles of life. People develop their own life style to make their life meaningful. Adler's theory (1954) is known as *individual psychology*. He believed that experiences of early childhood shape one's personality. If encouraged during childhood, it would motivate the child to feel capable and act in a cooperative way throughout their life. Whereas, if discouraged the child may misbehave and indulge in unhealthy competition or withdrawal behaviour. He proposed that there is a need to understand one's personality within one's social context. According to Adler, instead of any

instinct (as proposed by Freud), an innate force motivates us to perform the behaviour. He named this force as the *striving for perfection*, an innate desire that motivates individuals to achieve their full potential.

Inferiority and Superiority Complex

As a child, Adler explained that we feel weak, dependent, less capable and thus, inferior to others (older siblings, parents, and caregivers). This feeling of inferiority is innate and natural. If a child decides to overcome the feeling of inferiority, then she/he would strive for achievement or success. Thus, overcoming the feeling of inferiority is essential for optimal development. If this feeling is not compensated, then it would lead to inferiority complex and when overcompensated, it would lead to a superiority complex.

Sibling rivalry and birth order

Adler introduced the term *sibling rivalry* to explain how competition for parents' love and affection between siblings lead to rivalry and thus, shaping one's personality. According to Adler, arrival of a newborn might lead to a feeling of dethronement and sibling rivalry. Here, dethronement refers to the feeling of being replaced from the focus of attention and love by the new sibling.

He also proposed that your *birth order* also affects your personality. Later, numerous studies have confirmed his proposition about birth order. According to him, firstborn children are usually responsible, obedient and intelligent. The second born, master's their skill in social adjustment. They are generally, trusting, accepting and other-centered. And, the third born child exhibits strong security, high self-esteem but less competitiveness. Since, the last born child is never dethroned, remains the baby of the family throughout their life.

Carl Jung: Analytical psychology

Carl Gustav Jung (pronounced as "yoong"), (1875-1961) was a Swiss psychiatrist and a close friend of Sigmund Freud. He emphasized the idea that we need to study different cultures as it will provide the essence of humanity. Jung's personality theory is known as the *analytic theory* or *analytical psychology* (1933). He proposed that everyone has a personal unconscious that is composed of one's own experiences which have been repressed due to some reasons. He proposed that everyone has an ability to balance the conscious and unconscious forces.

Jung extended Freud's idea of the unconscious. Freud considered unconscious as an essential part of one's personality. It is a storehouse of repressed memories, aggressive motives, and sexual desires. Even though the basic characteristic of the Freud's unconscious is similar across different individuals but its content is highly personal in nature. Jung deviated from this view and proposed the idea of *collective unconscious*, that is the unconscious shared by all humans. According to him, due to the evolutionary process and common ancestors we all carry some common past. Collection of this ancestral past is part of our unconscious known as the collective unconscious. According to him, the collective unconscious serves as the foundation for personality. This collective unconscious consists of all the archetypes and concepts which represent experiences that are primitive and from our ancestral heritage. For example, the conceptions about rebirth, God, evil and so on. The elements of our collective unconscious have been termed by Jung as *archetypes*. It is shared by all humans and have some overarching qualities. He described various types of archetypes, some of these are as follows:

The self-knowing about the wholeness of one's own identity

The persona-not genuine self that we show to others

The anima-feminine side of the men

The animus-masculine side of the female

The shadow-the darker side of our personality, consisting of aggressive urges, biological instincts, and the feeling of inferiority.

Check Your Progress 1

- 1) Write briefly about the first two stages of psychosexual development.

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- 2) Explain the terms id, ego and superego.

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- 3) What do you understand by collective unconscious?

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- 4) What do you understand by sibling rivalry?

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7.3.2 Behaviouristic Approach to Personality

Behaviourist psychologists were the main critics of psychoanalytical theory of personality. They were against the idea that human personality can be understood using psyche and unconscious contents. John B. Watson was the founder of behavioural approach but B. F. Skinner was the most influential behaviourist. According to behaviourist theorists, personality is an abstract and hypothetical concept. Describing it in terms of internal mental processes is grossly incorrect. Stimulus-response (S-R) relationship and role of reinforcement in the behavioural process have always been the focus of study among behaviourists. According to them, to understand personality, one needs to understand the S-R relationship and role of reinforcement first. So, according to them, personality is a collection of reinforced responses performed for different stimulus. There are basically three major theories of learning proposed by behaviourists: classical conditioning, instrumental conditioning, and

observational learning. One of the most important tenets of behaviourism is that ‘what we are is the result of our learning’ and this learning occurs through reinforcement and observation. Since, every human has different life conditions, therefore their S-R learning pattern is also different from each other. Due to this reason, we differ from each other in personality.

Watson claimed that human behavior could entirely be, determined by careful manipulation of stimulus and response. In the words of Watson, “*Give me a dozen healthy infants, well-informed, and my own specified world to bring them up in and I’ll guarantee to take any one at random and train him to become any type of specialist I might select-doctor, lawyer, artist, merchant-chief and yes, even beggar-man and thief, regardless of his talents, penchants, tendencies, abilities, vocations and the race of his ancestors*”.

7.3.3 Humanistic Approach to Personality

Also known as the “third force” or “third approach” in psychology, humanistic approach came into existence as a reaction against the pessimistic approach of psychoanalysts and behaviourists towards human behaviour. Abraham Maslow and Carl Rogers are the two leading theorists of *humanistic personality theory*. Humanistic approaches tend to delve into the self to understand how personality evolves. Maslow and Rogers emphasize on the way we think about our behaviour, becoming aware of it, our feelings, our attitudes and how these aspects influence the way we behave. They gave importance to the concepts as self-concept or self-image which constitutes of feelings, perceptions, attitudes and evaluating the self as an object (Hall and Lindzey, 1970).

Carl Rogers

Carl Rogers (1902-1987) was a counselling psychologist and Maslow’s colleague, who extended the humanistic approach to personality. Like Maslow, he also viewed humans as good and their behaviour as goal-directed talked about client centered theory where he gave importance to the total organism, that is the person. The phenomenological field of the person consists of his experiences from which his self-concept develops. He suggested that when a child grows, she/he indulges in various behaviors, some which are approved and some which are disapproved. Those that are disapproved, the child considers to be unworthy and hence excludes from one’s self-concept or tends to deny them. The person strives to overcome the discrepancy between the ideal image and his/her true self image. This is often used in psychotherapy. He developed his theory by observing the behaviour of his clients. He noticed that the idea of “self” always plays an important role in his client’s life. Therefore, his theory revolves around the concept of self. According to him, there are basically two types of self; one is ideal self and other is real self. *Ideal self* is one’s concept of self that she/he wants or desires to become. Whereas, *real self* is one’s inner concept of what we really are. Roger proposed that if there is congruence between one’s ideal and real self, then it will help in achieving a state of self-actualisation, which is the state of highest potential a person can achieve. He called such people as *fully functioning person*. On the contrary, if there is no congruence between these two versions of self, then it will lead to state of anxiety and stress. Roger also mentions about the importance of external environment in achieving congruence in self-concepts. If an individual is receiving *unconditional positive regard*, only then, she/he will be able to value one’s true worth and can achieve self-actualisation. *Unconditional positive regard* refers to the warm acceptance of one’s self by significant others without any condition.

Box 7.1: Empathy

The word was first used in German as “*einfuhlung*” or in-feeling in the last century. It was primarily used in the context of aesthetics (‘feeling into’ things like forms, shapes, and art objects), an area of Philosophy. The meaning of the word and its application has been changing over the period of time. Empathy is one of the core conditions, proposed by Carl Rogers that a counselor should display in order to show acceptance of the client, and valuing them as a human being of worth.

Maslow’s theory of self-actualization

Abraham Maslow (1908-1970) emphasized upon the positive behavioral attributes of the person. He was more optimistic about the trends in human existence. Each individual is unique and one goes through different levels of needs to self-actualization. Each individual has a basic need to maximize his or her own potentials to the best of their ability, thus emphasizing the innate tendency towards personal growth. He called this state of achievement as ‘*self-actualization*’. Therefore, in his pursuit to understand human personality, he studied many *self-actualisers*, or people, according to Maslow, who have achieved the state of fulfilment by reaching the highest level of capability. Some of the famous names Maslow studied, include Albert Einstein, Eleanor Roosevelt, Thomas Jefferson and Abraham Lincoln. According to him, since early theorists have focused their attention on the darker aspects of human personality, therefore, the true nature of humans cannot be understood. He emphasised that in order to understand the true nature of human, we need to shift our focus to the optimistic nature of the individual. His hierarchy of needs consist of five types of needs, as illustrated in Figure 7.2. In order to achieve higher order of needs, one needs to fulfil the lower needs first.

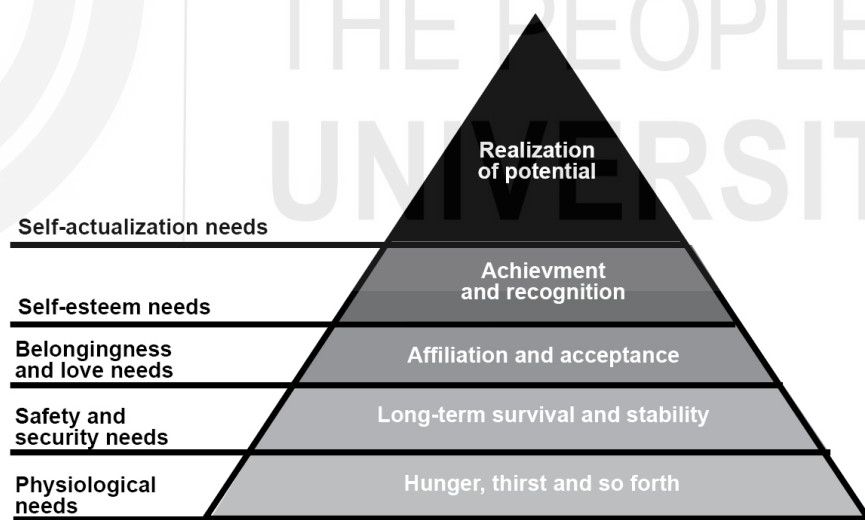


Figure 7.2: Maslow’s Hierarchy of Needs

Maslow observed that those who had taken efforts to self actualize had certain distinctive traits as they were more open to experience things selflessly, vividly with full concentration (Maslow, 1967). They were more in harmony with themselves, their inner being. They were more spontaneous, autonomous, independent, devoted to their goals, related to few loved ones, and resisted conforming to the cultural norms.

Box 7.2: Characteristics of Self-Actualizing People

1. More efficient perception of reality
2. Acceptance of oneself, others and nature
3. Spontaneity, Simplicity, Naturalness
4. Problem Centered
5. Detachment : The Need for Privacy
6. Autonomy: Independence of Culture and Environment
7. Continued Freshness of Appreciation
8. Mystical or Peak experiences
9. Profound interpersonal relations
10. Social interest
11. Creativeness
12. Resistance to enculturation
13. A democratic character structure
14. Discrimination between means and end.
15. Philosophical sense of humour

7.3.4 Trait Theories of Personality

A group of theorists believed that our personality is a combination of traits that determine our behaviour. By identifying and studying them, we can predict the personality of other people. Before moving forward, one needs to understand the concept of trait-labels used to identify the characteristic way of behaving. Often traits are viewed as continuous dimension such as the trait of 'extroversion-introversion'. Individuals who are extrovert in nature tend to be friendly, out-going, talkative and often adventurous. Whereas, those who are high on introversion tend to be less friendly, reserved and less adventurous. As shown in Figure 7.2, an individual may fall along any point on the continuum and his/her behaviour will be in accordance with that location.

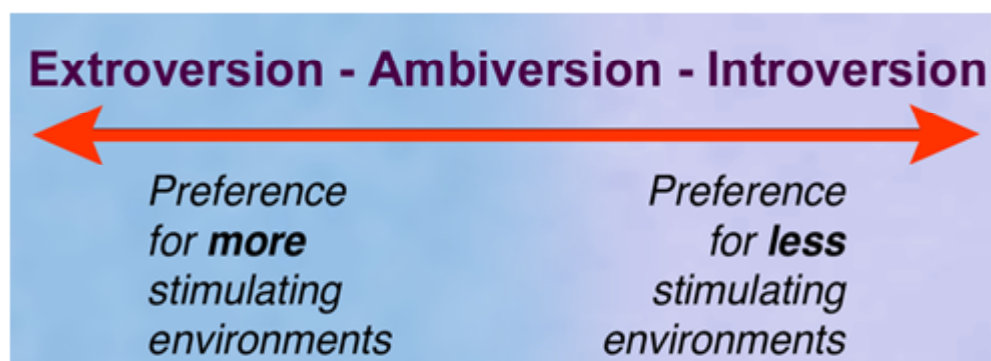


Figure 7.3: Extrovert-Introvert Spectrum

Image Source: <https://commons.wikimedia.org/>

History of defining personality by trait can be traced back to the times of Hippocrates. However, in recent times, some of the famous names of the trait theorists include Gordon Allport, Raymond Cattell, Hans Eysenck, Robert McCrae, and Paul Costa.

7.3.4.1 Allport's Trait Theory

Gordon Allport (1897-1967) and his colleague Henry Odbert listed 17953 words in English language that refer to personality and that could describe people. This psycholexical study (1936) became the empirical and conceptual base of Five-Factor Theory at a later stage. Based on their investigation (Allport reduced the listed words to 4500 trait like words), they proposed a trait theory of personality. According to their theory, three types of traits govern our personality. They named these three categories of traits as cardinal traits, central traits, and secondary traits. Allport organized these traits in a hierarchy.

Cardinal Traits: These are the dominant traits of one's personality. They stand at the top of Allport's trait hierarchy and are the master controller of one's personality. These traits may dominate personality to such an extent that the person may become known for those traits only. Such as Mother Teresa for altruism and M.K. Gandhi for his honesty. According to Allport, these traits are rare i.e., very few people have personalities dominated by cardinal traits, a majority of the people have personality composed of multiple traits.

Central Traits: They come second in the hierarchy. According to Allport, every person possesses 5-10 central traits in varying degrees. They can easily be noticed and are responsible for shaping our personality. Traits such as intelligent, loyal, dependable, aggressive etc.

Secondary Traits: These are less relevant traits of personality. These are basically situational or circumstantial traits. For instance, an aggressive child may not speak much in front of his/her teacher. These can be numerous in number and are responsible for behaviours incongruent to individual's usual behaviour. According to Allport, these traits are "aroused by a narrower range of equivalent stimuli and they issue into a narrower range of equivalent responses".

7.3.4.2 Cattell's Trait Theory

Using factor analysis (a statistical procedure), British psychologist Raymond B. Cattell (1905-1998) factor analysed Allport's list of 4,500 English adjectives. He came up with the following sixteen trait dimensions of human personality:

Table 7.2: Cattell's Source Traits (factors) of Personality

Factor	Low Scores	High Scores
A	Reserved	Outgoing
B	Less intelligent	More intelligent
C	Stable, ego strength	Emotionality/Neuroticism
E	Submissive	Assertive
F	Sober	Happy-go-lucky
G	Expedient	Conscientious
H	Shy	Venturesome
I	Tough-minded	Tender-minded
L	Trusting	Suspicious
M	Practical	Imaginative

N	Forthright	Shrewd
O	Placid	Apprehensive
Q ₁	Conservative	Experimenting
Q ₂	Group-dependent	Self-sufficient
Q ₃	Undisciplined	Controlled
Q ₄	Relaxed	Tense

Cattell identified ‘source traits’ as the most important, and ‘surface traits’ as the less important traits. Cattell also identified between *common traits* and *unique traits*. A common trait is possessed to some degree by everyone, for instance, intelligence. Unique traits are possessed in different degrees. For instance, attitude and interests. Cattell further distinguished between *ability*, *temperament*, and *dynamic* traits. Ability traits determine how well we can work towards goals. Temperament traits determine how we react to people and situations depending upon emotions and feelings. Dynamic traits define one’s motivation, interests and ambition and are the driving force of behaviour.

Cattell further proposed *constitutional* traits and *environmental mold* traits. The former are source traits that depend on our physiological characteristics. While the latter are source traits that are learned from social and environmental interactions.

In order to measure 16 source trait dimensions, Cattell along with his colleagues (Cattell, Eber & Tatsuoka, 1977) developed a questionnaire, later known as the Sixteen Personality Factor Questionnaire (16PF).

7.3.4.3 Eysenck’s Trait Theory

Hans Eysenck (1916-1997) was a contemporary psychologist of Cattell. Even though he was a behaviourist, he believed that our personality is largely innate and genetically based. He also used factor analysis to understand the underlying personality traits. Initially, he proposed that our personality is comprised of two major personality dimensions: Extroversion Vs. Introversion; and Neuroticism Vs. Stability. According to his theory, different combinations of these dimensions lead to the development of different personalities. Later, he added the third dimension to his model and named it as Psychoticism Vs. Socialisation.

Extroversion-Introversion dimension refers to the degree to which one seeks external or internal stimulation. People who are extroverts are social, seek adventurous and prefer company when in stress. Whereas, people who are introverts are shy, enjoy their own company and turn inward when in stress. Neuroticism Vs. Stability refers to a dimension that describes people in the context of their emotionality and maladjusted behaviour. Individuals who are high on neuroticism, tend to be emotionally unstable, moody and maladjusted. Whereas, people at the opposite end of the neuroticism dimension, tend to be calm. In the last dimension, Psychoticism Vs. Socialisation, people who are high on psychoticism tend to be aggressive, egocentric, anti-social and impulsive. Whereas, people who lie on the socialisation end, are altruistic, empathetic and conventional.

7.3.4.4 McCrae and Costa’s Five Factor (Big-Five) Theory

McCrae and Costa believed that all human personality traits can be reduced to five factors only: *Openness to experience*, *Conscientiousness*, *Extraversion*,

Agreeableness, and *Neuroticism*. Acronym as OCEAN or CANOE, these factors or dimensions were the results of factor analysis of Cattell's original list by McCrae and Costa (1992). These dimensions are stable across time and are cross-culturally shared. Brief descriptions of these factors are given below:

Openness to experience: Such people love novelty and creativity. They have a curious mind and have an appreciation for art. They are an independent thinker and prefer to do a variety of things instead of routine activities.

Conscientiousness: People high on this factor are more goal-directed, self-disciplined, hard-working, honest and competent. They prefer planned activity instead of spontaneous behaviour.

Extraversion: Seeks external stimulation.

Agreeableness: People who score high on agreeableness have a tendency to be cooperative and compassionate. Such people are generally helpful and trustworthy.

Neuroticism: People high on this factor are worrisome, insecure and self-pitying people. Whereas, people who score low on neuroticism are self-satisfied and secure.

7.3.5 Indian Approach to Personality

The Indian intellectual tradition has a deep understanding of the human nature and there are conceptual frameworks which are connoted as 'theories of personality' in modern psychology (Paranjpe, 2016). In the Indian context, *svabhava* is the Sanskrit word that is used to reflect the unique and stable characteristics of the person. Another word used is *prakriti*. It is a term that is derived from *Samkhya* system. It reflects the inherent features of all events as well as humans. Prakriti has three *gunas*, namely, *sattva*, which means enlightenment, *rajas* meaning energy and movement, and *tamas* refers to darkness and inertia. *Bhagavad-Gita* refers to three types of personality based on *gunas* and is referred as *guna theory*. The three types of personality that emerge are :

- 1) **Sattvik**: When *sattva* *guna* dominates, people tend to be emotionally stable. The inherent desire is to be good and caring.
- 2) **Rajasik**: People tend to be active and emotional when *rajas* *guna* dominates. *Rajas* dominant person is full of attachment. Enthusiasm, interest and activity are some qualities of this *guna*.
- 3) **Tamasik**: When *tamasik* *guna* dominates, the person tends to be sluggish and ignorant, but the positive manifestation of *tamas* *guna* is willingness to work hard.

Check Your Progress 2

- 1) What is Maslow's view on personality?

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2) What are the three types of traits explained by Allport?

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3) List the five factors of Big-Five Factor Theory.

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4) List three types of personality according to Indian approach.

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7.4 ASSESSMENT OF PERSONALITY

Personality can be assessed using different techniques. Clinical psychologists/psychologists use personality tests to measure anxiety and personality disorders, industrial psychologists use tests to select employees in the jobs or school counselors use tests to understand the personality problems in children so that they can be helped. According to APA, “personality assessment is a proficiency in professional psychology that involves the administration, scoring, and interpretation of empirically supported measures of personality traits and styles in order to:

- Refine clinical diagnoses;
- Structure and inform psychological interventions; and
- Increase the accuracy of behavioral prediction in a variety of contexts and settings (e.g., clinical, forensic, organizational, educational)”.

The above definition of personality assessment by APA suggests that it is a specialised knowledge which requires an assessor to have knowledge related to psychometric properties of the test instruments, theories of personality, knowledge of administration and interpretation. There are various measures to assess personality which can be broadly categorized as following:

7.4.1 Paper and Pencil Tests

The paper-pencil tests are the most popularly used measures to assess personality. These could be in various forms. One type is a **self-report inventory** or **questionnaires**, where simple questions pertaining to personality attributes, are asked and the respondent is required to answer to either of the two or three options given as “Yes” or “No” or “Cannot say”. There is no right or wrong answer and there is no time limit. The items on the test may have face validity, that is, it may be apparent

to the respondent that their personality is being assessed. **Minnesota Multiphasic Personality Inventory** is the most popularly used inventory to diagnose clinical patterns in personality and for vocational and personal counselling. It was developed by Hathaway and McKinley in 1943 and has been revised a number of times. The latest is MMPI-2 for non-clinical and clinical population, like adolescents, addicts, etc. The statements refer to various personality attributes which the person has to endorse as “true” or “false” or “cannot say”. On the same premise, **Jodhpur Multiphasic Personality Inventory** (Joshi & Malik, 1983) has been constructed in India, which makes assessment of psychoneurosis, psychosis, psychosomatic disorders, and validity indices.

The **California Personality Inventory** (Gough, 1969) is another measure which assesses non-deviant or normal personality traits such as self-acceptance, achievement, dominance, to name a few. **Edwards Personal Preference Schedule** measures the dominant motives or needs of the people (Edwards, 1954). Another inventory that is widely used by clinical psychologists is **Millon Clinical Multiaxial Inventory** (Millon, 1987, 1997). **NEO Personality Inventory** (Costa & McCrae, 1989) is an important objective test that is based on Five-Factor Model of Personality (refer to the last section). It measures the five dimensions of personality which are considered to be the basic aspects of personality. **Myers-Briggs Type Indicator** (Myers & McCaulley, 1985) is an inventory based on Jungian theory of personality. It assesses the individual on the basis of sensation, thinking, feeling or intuition.

Inventories or the paper-pencil tests have their own limitations. First, the responses given, could be as a result of high level of *social desirability*, or where the respondent tries to make an impression. Second, the assessment can be distorted because of *acquiescence effect*. It is a tendency of a person to answer in affirmative (yes) to the items in an inventory, regardless of the content of the item. Lastly, the inventories can be administered to literate people only.

7.4.2 Projective Techniques

The projective techniques are subjective in approach unlike inventory. Projective techniques help in overcoming the shortcomings of paper-pencil tests in measuring the persons' personality. Influenced by Freud's emphasis on unconscious, projective tests probe the invisible part of personality. These techniques use a standardized set of ambiguous or open-ended stimuli, which the respondent has to interpret according to what she/he perceives in them. In this way, needs, fears and values are projected onto the stimulus when asked to describe it. They can be incomplete sentences as in **Rotter's incomplete sentences blank** (Rotter, 1950) which is easy and simple and helps in assessing the overall adjustment of the person or giving vocational guidance. The **Thematic Apperception Test** (TAT) developed by Henry Murray & Christina Morgan (1935) consists of 20 different cards containing ambiguous pictures, which are presented to the participant. The participant is asked to make up a story about the picture and the hero, the purpose, the feelings involved and the conclusion to the story is given. When the participant writes the story, she/he tends to identify with the characters and the story reveals self-perceptions, feelings and the perception towards life. The ink blots (some black, others using colour) test that is **Rorschach test** is another (Rorschach, 1921) widely used technique to assess personality. Each inkblot is on one card and the person is asked to show what they see in the ink blot and where they see it, what, or what it reminds them of. The more details that the respondent gives, the more information the psychologist gets to interpret the personality. This is scored objectively with the help of standard scoring manual (Exner, 1993) where each part of the ink blot is given numbers.

Box 7.3



Figure 7.4: An illustration of TAT card

The major limitation of projective technique is that they are highly subjective in their approach and thus, have low validity and reliability as compared to objective methods of assessment.

7.5 SUMMARY

Now that we have come to the end of this unit, let us summarize all the major points that we have covered.

- The study of personality focuses on two broad areas: one is understanding individual differences in particular and personality characteristics, such as sociability. The other is, understanding how the various parts of a person come together as a whole.
- The psychoanalytic theory of personality proposes three important concepts. First, that the structure of the personality has three components as id, ego and super ego. Second, the dynamics of personality where the conscious and unconscious motivation and ego-defense mechanisms help to manage the personality. Third, there are different psychosexual stages of development during which different body zones and motives predominate and their effects are seen in the personality in adulthood.
- Many theorists followed Freud's work. Some theorists who initially worked with him but defected later to develop their own theories. To differentiate their work from Freud and to get due recognition, they called themselves as *neo-Freudian* or *post-Freudian*, *neo-analytic* or *psychodynamic*. Some of the prominent names include Alfred Adler, Karen Horney, Erik Fromm, Carl Jung, and Erik Erikson.
- Behaviourist psychologists were the main critics of psychoanalytical theory of personality. They were against the idea that human personality can be understood using psyche and unconscious contents. John B. Watson and B. F. Skinner were the most influential behaviourist theorists.
- Humanistic approach to personality came into existence as a reaction against the pessimistic approach of psychoanalysts and behaviourists towards human behaviour. Abraham Maslow and Carl Rogers are the two lead theorists of humanistic approach. Humanistic approaches tend to delve into the self to understand how personality evolves.

- Trait theories of personality postulate that our personality is a combination of traits that determine our behaviour. By identifying and studying them, we can predict the personality of other people.
- The Indian perspective on personality proposes personality types according to 'gunas'. Rajsik, tamsik, sattvik are three personality types.
- Personality can be assessed using different methods. Broadly, these techniques can be categorized into paper and pencil tests and projective techniques.

7.6 KEY WORDS

Personality	: It refers to individual differences in characteristic patterns of thinking, feeling and behaving.
Trait	: Trait(s) represent the thoughts, feelings and, behaviors that help to describe the people as accurately as possible.
Cardinal Traits	: These are the dominant traits of one's personality. They stand at the top of Allport's trait hierarchy and are the master controller of one's personality. These traits may dominate personality to such an extent that the person may become known for those traits only.
Central Traits	: According to Allport, every person possesses 5-10 central traits in varying degrees. They can easily be noticed and are responsible for shaping our personality, such as intelligent, loyal, dependable, aggressive etc.
Secondary Traits	: These are less relevant traits of personality. These are basically situational or circumstantial traits.
Id	: This part of personality operates unconsciously. It deals with basic instincts, biological needs, and aggressive impulses.
Preconscious or subconscious mind	: Deals with all those information for which you are not currently aware but can become only if you pay attention.
Fixation	: Refers to a continuation of an early mode of satisfaction in later life.
Collective unconscious	: It refers to the unconscious shared by all humans.

7.7 REVIEW QUESTIONS

- 1) Id is to "just do it" as superego is to
 - a) "wait till later"
 - b) "do your own thing"
 - c) "don't do it"
 - d) "oh sit on it"

- 2) The concept of traits is used to account for personal characteristics that are
 - a) biologically determined
 - b) relatively permanent and enduring
 - c) situation specific
 - d) shared by a group
- 3)theory maximised and theory minimised the role of unconscious.
 - a) trait; humanistic
 - b) psychoanalytic; behaviourist
 - c) psychoanalytic; humanistic
 - d) trait; behaviourist
- 4) Psychologists who believe that people grow and develop throughout their lives and that people are inherently good are
 - a) psychoanalysts
 - b) radical behaviorists
 - c) social learning theorists
 - d) humanists
- 5) Discuss Five-Factor Model of Personality.
- 6) Why is the unconscious so important in Freud's theory of personality?
- 7) Explain any five defense mechanisms given by psychoanalytical theory of personality.
- 8) Discuss the methods of assessment of personality.
- 9) Explain humanistic view of personality.

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7.9 REFERENCE FOR FIGURE

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Extrovert-Introvert Spectrum. Retrieved October 6, 2018 from <https://commons.wikimedia.org/wiki/File:ExtrovertIntrovertSpectrum.png>.

7.10 ONLINE RESOURCES

- For information on Psychodynamic theory, visit
 - <https://courses.lumenlearning.com/suny-hccc-ss-152-1/chapter/freuds-psychodynamic-theory/>
 - <http://journals.iupui.edu/index.php/advancesinsocialwork/article/view/140>
 - <https://nobaproject.com/modules/the-psychodynamic-perspective>
- For more on Behaviourist Theory of Personality, visit
 - <https://www.simplypsychology.org/behaviorism.html>
 - <https://chasqueweb.ufrgs.br/~slomp/edu01011/watson-behaviorist.pdf>
 - <https://plato.stanford.edu/entries/behaviorism/>
- To learn more about Trait Theory of Personality, visit
 - http://www.ep309.org/faculty/LAMBJEN/Chapter6/trait_theories_of_personality.pdf
 - http://www.ufrgs.br/psico-laboratorio/textos_classicos_3.pdf
 - <https://courses.lumenlearning.com/boundless-psychology/chapter/trait-perspectives-on-personality/>

Answer to Multiple Choice Questions

1) (c), 2) (b), 3) (b), 4) (d)

UNIT 8 INTELLIGENCE*

Structure

- 8.0 Learning Objectives
- 8.1 Introduction
- 8.2 Concept and Definition of Intelligence
 - 8.2.1 Nature vs. Nurture Debate in Intelligence
- 8.3 Theories of Intelligence
 - 8.3.1 Spearman's Theory of Intelligence
 - 8.3.2 Thurstone's Theory of Intelligence
 - 8.3.3 Sternberg's Theory of Intelligence
 - 8.3.4 Gardner's Theory of Intelligence
 - 8.3.5 Cattell's Theory of Intelligence
 - 8.3.6 PASS Theory
 - 8.3.7 Theory of Technological Intelligence
 - 8.3.8 Theory of Integral Intelligence
- 8.4 Assessment of Intelligence
 - 8.4.1 Types of Intelligence Tests
 - 8.4.1.1 Individual and Group Intelligence Tests
 - 8.4.1.2 Verbal and Nonverbal Tests
 - 8.4.1.3 Culture-Fair Tests and Culture-Biased Tests
- 8.5 Summary
- 8.6 Key Words
- 8.7 Review Questions
- 8.8 References and Suggested Reading
- 8.9 References for Figure
- 8.10 Online Resources

8.0 LEARNING OBJECTIVES

After reading this unit, you will be able to,

- explain the nature and concept of intelligence;
- discuss nature vs. nurture debate of intelligence;
- compare and summarize the various theories of intelligence;
- identify the different ways to measure intelligence; and
- describe different types of intelligence tests.

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8.1 INTRODUCTION



Figure 8.1: Indian Wonderkid: Priyanshi Somani

Image Source: <https://www.indiatimes.com/culture/>

‘Priyanshi Somani born on 16th November 1998 is a mental calculator and she was the youngest participant of the Mental Calculation World Cup held in 2010 and also won the overall title and make India proud. She is the only participant who has done 100% accuracy in addition, Multiplication, Square Root till date in all the Five Mental Calculation World Cups’.

Source: <https://www.indiatimes.com/culture/>

What made the child prodigy, in the above example, different from other children of her age? Is she born intelligent or has been trained to become efficient in solving mathematical problems? Many psychologists have developed theories to describe such intelligent behaviour. In this unit, we will be discussing the concept of intelligence, various theories of intelligence and methods to assess intelligence. After reading this unit, try to identify factors that could describe such child prodigy most accurately and discuss with your friend.

8.2 CONCEPT AND DEFINITION OF INTELLIGENCE

Intelligence involves a number of abilities together. It is the ability to understand the incoming information and make sense out of it. It is the ability to acquire new skills and use the existing knowledge to complete a task or deal with a situation. Intelligence includes the capacity to understand novel stimuli, learning language and communicate with others, being aware of the environment, have the ability to reason, plan, and solve the problems creatively. According to Wechsler (1944), “Intelligence is the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his environment.” Intelligence from Indian perspective is conceptualised as adaptive potentiality of a person in different domains of life. It is not limited to cognitive domain only. This adaptive potentiality consists of a range of skills that help one to overcome the life problems, to grow and become what one wants to be (Srivastava & Misra, 1997). There are individual differences in intelligence. These differences influence the capacity of the people to cope with

their daily life issues. Those who score less than 70 on IQ (Intelligence Quotient) tests are considered as people with intellectual disability (ID). The level of ID also varies. This limits their capacity to perform daily life functions, or do simple tasks, and are poor on academic and life skills. They are generally groomed in social and vocational skills. There are sex differences in intelligence. Women and girls have been found to be better on verbal tasks while men and boys have been found to be better on performance tasks. Differences in intelligence have also been related to the intellectually stimulating home environment.

8.2.1 Nature Vs. Nurture Debate in Intelligence

Why some people are more intelligent than others? Why siblings from the same family have a different aptitude and intelligence level?

To answer these and other similar questions, psychologists' resort to nature vs. nurture debate. This debate involves whether differences in human intelligence is the result of nature or nurture? But before explaining further, what exactly is meant by nature and nurture?

Nature- It refers to the genetic factors that we have inherited from our parents, such as height or skin colour.

Nurture- It refers to all those environmental factors that can impact us, such as rearing process, family, socioeconomic conditions, social support, cultural factors, and anything that does not come from within the person.



Figure 8.2: Nature Vs. Nurture Debate

Image Source: <https://www.verywellmind.com/>

The debate over the relative importance of hereditary Vs. environmental factors is one of the oldest yet unresolved debates. People who believe that our intelligence is purely controlled by our hereditary factors are known as *nativists*. Those who support this view, regard differences in human behaviours as a result of different 'genetic makeup'. Supporters of the other end of this debate spectrum are known as *environmentalists* or *empiricists*. Advocates of this view believe that people differ from each at the level of intelligence due to their experiences or environmental conditions. One of the well-known and prominent supporters of this view is John Locke. He equated human mind to *tabula rasa*-a blank slate, which gradually fills with our life experience. Figure 8.3 illustrates the nativists Vs. empiricists taken by different approaches of psychology.

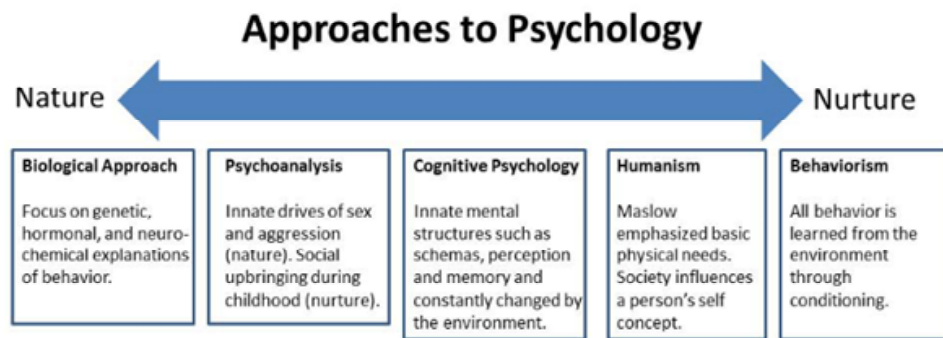


Figure 8.3: Nativists Vs. Empiricists taken by different approaches of psychology

Image Source: <https://www.simplypsychology.org/>

However, contemporary view on this debate suggests that defending any extreme side would be a catastrophe in explaining human behaviour and individual differences. Recently, many studies have suggested that both genetic and environmental factors play a vital role in shaping intelligence. For example, height as a physical trait has been found to be influenced by both genetic and environmental factors. If parents of a child are tall, and if she/he may have inherited these genes for tall height then whether the child will be tall or not, depends on received nourishment. If the child has not received proper nourishment then her/his genes of tall height would not manifest and she/he will remain shorter than her/his parents. You will also find many examples of nature-nurture interaction in your textbooks on abnormal psychology or psychopathology, where the roots of all mental disorders have been explained with the help of both genetic predisposition and environmental factors.

There is a substantial amount of evidence to support the role of genes (heredity or nature) in explaining individual differences in intelligence. These are based on studies of identical twins that have been reared apart. The rationale behind such research is that if identical twins possess same level of intelligence, irrespective of different environments, then it is attributed to the twins identical genes. If identical twins who are reared apart are more similar in their intelligence levels than non-identical twins who are reared apart, provides a strong support for genetic endowment of intelligence. Thus, there is evidence of differences in cognitive ability as inherited. There are researchers that conclude that role of environment is small in shaping one's intelligence (Jenson, 1973). The *flynn effect* (James Flynn, 1987) suggests the importance of environment on IQ. Culture is the critical part of one's environment. Flynn effect is described as massive IQ gains, nearly three points per decade. In the US, the average IQ increased at about 22 points between 1932 and 2002. The Flynn effect has not been studied in India. Though, some limited IQ data points towards low IQ scores in India. Thus, the environmental factors like malnutrition, disease and illiteracy have led to lower average intelligence scores among general population and this prevents people reaching their genetic potential in IQ.

Check Your Progress 1

1) Define intelligence.

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2) Explain nature vs. nurture debate over intelligence?

8.3 THEORIES OF INTELLIGENCE

Intelligence has been defined in a particular way but there are differing opinions about the concept of intelligence. Thus, there are several theories that describe and explain intelligence with different perspectives. One group of theorists focuses upon the organization of mental abilities as factors that constitute intelligence. The other group looks at the nature of the intellectual processes.

8.3.1 Spearman's Theory of Intelligence

Charles Spearman's (1904) theory of intelligence is known as two-factor theory. Spearman noticed that children who perform well in one subject tend to have good marks in other subjects also. This observation led him to propose that there is a common factor which affects all of your activities. Using a statistical method called as "factor analysis", he proposed that all cognitive activity or mental activity consists of two factors namely, "general" or "g" factor and "specific" or "s" factor. So, intelligence is a sum of "g" factor and "s" factor. The g-factor theory or general-factor theory states that intelligence is composed of a general intelligence. The g factor refers to the broad spectrum of mental faculties that influences the performance on a wide variety of cognitive abilities. The s factor is the single or unique factor. It proposes that all cognitive abilities are related to one another. Hence, the general intelligence is responsible for acquiring knowledge, abstract reasoning and adapting to novel situations.

8.3.2 Thurstone's Theory of Intelligence

L.L. Thurstone (1938) emphasized that intelligence involved seven clusters of Primary Mental Abilities (PMA). His approach was very different from that of Spearman's. He suggested that the differences that were observed in the performance of intellectual tasks could be attributed to different independent abilities. These abilities included:

- i) *Word Fluency(W)*: Ability to think or use words rapidly, such as in the task of anagrams.
- ii) *Verbal Comprehension(V)*: Ability to understand the meaning of the word, concept or ideas correctly. Vocabulary tests assess verbal comprehension.
- iii) *Spatial Visualization(S)*: It is the ability to manipulate patterns and forms of objects in space visually.

- iv) *Perceptual Speed(P)*: Tendency to perceive details quickly in every stimulus accurately.
- v) *Numerical Facility(N)*: One's ability to solve a numerical problem quickly and accurately.
- vi) *Reasoning(R)*: Ability to observe facts and making a general rule out of it.
- vii) *Associative Memory(M)*: Ability to memorise and recall quickly and accurately.

All the above clusters were originally said to be functionally independent of each other, it was actually found that they were intercorrelated. This supported Sperman's idea of a 'g' factor.

8.3.3 Sternberg's Theory of Intelligence

Robert Sternberg (1988a, 1997b) developed the 'Triarchic theory of intelligence'. According to the theory, there are three types of intelligence. First is the *contextual intelligence*, second is the *creative intelligence* and third is the *analytical intelligence*. *Contextual intelligence* or practical intelligence refers to the ability to adapt to the environment or situational demands. It involves applying knowledge and information to your real world and thus adapting successfully to the situation. Here, adaption involves both adapting to your existing environment and/or ability to modify your environment to fulfill your needs. People who are high on this intelligence are street smart and often successful in their life.

Creative intelligence is the ability to develop new ideas of ways of solving a problem or tackling a situation. *Experiential intelligence* or creative intelligence is the ability to develop novel ideas or solutions. People high on this intelligence are creative. They have the ability to use previous experiences in making new inventions.

The analytical intelligence involves the ability to think abstractly and appraise the situation. *Componential intelligence* is also known as analytical intelligence, is measured by a traditional intelligence test. People high on this form of intelligence, often score high on traditional Intelligence Quotient (IQ) tests. Such individuals have high critical and analytical abilities and usually perform well in academic tasks and school. They are also good at mathematical and verbal skills.

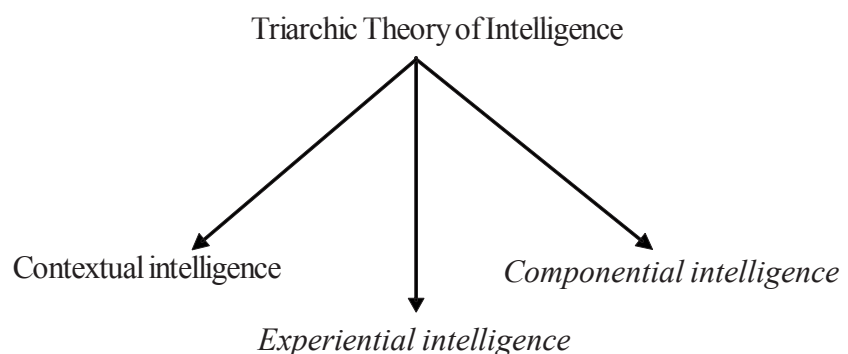


Figure 8.4 Triarchic theory of intelligence

8.3.4 Gardner's Theory of Intelligence

Howard Gardener (1993b, 1999a) refuted the classic view of intelligence as a capacity for logical reasoning. He proposed that there is no one form of intelligence but a number of intelligence work together. According to him, intelligence is the "ability to solve problems or fashion products that are of consequence in a particular cultural

setting or community” (1993). Initially, he proposed seven distinct types of intelligence namely,

- 1) *Linguistic*: People who are high on this type of intelligence have good linguistic abilities i.e., they can easily articulate and express their thoughts by choosing the most appropriate words. They can easily play with the words. Poets and writers have a higher level of linguistic abilities.
- 2) *Musical*: People high on this are knowledgeable and sensitive to music. They can manipulate musical pattern to create different music. People carrying this intelligence are good singers, play musical instruments and good music composers.
- 3) *Logical-mathematical*: This involves having the ability to think critically and on abstract problems. Such people have a scientific aptitude and are good with numbers and abstract problems. Scientists have a higher level of this intelligence.
- 4) *Spatial*: This intelligence is related to one’s ability to manipulate and use visual images or mental images. Navigators, pilots, architects, and painters have high spatial intelligence.
- 5) *Bodily-kinesthetic*: It is the ability to control and train your body or a part of it for construction of products and problem-solving. People serving in the military, intelligence agencies, sports person, actors and, dancers have higher levels of bodily-kinesthetic intelligence.
- 6) *Intrapersonal*: Being aware of one’s own feelings, emotions, needs, and motives are having intrapersonal intelligence. Philosophers and spiritual leaders are high on intrapersonal intelligence.
- 7) *Interpersonal*: Your ability to understand other person’s behavior, motive, and feelings. People high on this intelligence use their understanding of other people to develop a comfortable bond with other people. Counselors, politicians, teachers, social workers are high on interpersonal intelligence.

Later, he added another type of intelligence. (8) *Naturalist*: It refers to being sensitive to different features of nature. They have compassion for nature and are usually nature lovers. Wildlifers and botanists possess a higher level of this intelligence.

Each individual has a unique combination of these eight types of intelligence, which explains the individual differences. Gardner and his colleagues proposed that the typical paper-pencil tests for intelligence do not measure many aspects of intelligence such as interpersonal ability. For instance, many students performed poorly on the intelligence test but become great leaders because of their refined interpersonal qualities. Thus suggesting, that intelligence is more than merely mathematical, verbal and analytical abilities, measured by the traditional intelligence test.

8.3.5 Cattell’s Theory of Intelligence

Raymond Cattell (1963) proposed the notion of fluid and crystallized intelligence. *Fluid intelligence* is the capacity to reason and solve new problems. There is no influence from any knowledge from past experiences, rather the person innovates new logical methods to resolve the problem. *Crystallized intelligence* is the ability to use skills, knowledge and past experiences. It involves the intellectual learning that one has accumulated throughout the life span. This intelligence is expressed in the form of one’s vocabulary and general knowledge.

Box 8.1: Non-cognitive Intelligence: Emotional Intelligence and Social Intelligence

Emotional Intelligence

In the early 1990s, John Mayer and Peter Salovey introduced and defined one of the most important non-cognitive intelligence: Emotional Intelligence (EI). In the *Handbook of Intelligence* (2000), they defined emotional intelligence (EI) as “the ability to perceive and express emotion, assimilate emotion in thought, understand and reason with emotion, and regulate emotion in the self and others” (Mayer, Salovey, & Caruso, 2000, p. 396; see also Mayer & Salovey, 1997). Although Mayer and Salovey were responsible for introducing this term (EI) to the world of psychology, it was Goleman’s (1995) bestselling book *Emotional Intelligence: Why it can matter more than IQ*, which made this term more common.

Social Intelligence

The second type of non-cognitive intelligence is known as Social Intelligence (SI). Thorndike (1920) was the first psychologist to use this term to describe the skill of understanding and managing other people wisely. Goleman has defined SI as ‘being intelligent not just *about* our relationships but also *in* them’. According to Mayer and Salovey, emotional intelligence is a part of social intelligence. Due to this reason, Baron (2006) has proposed that these two terms are related to each other and may represent the component of the same construct. He further pointed out that in his theory of intelligence; Gardner’s (1983) conceptualisation of *personal intelligence* is also a combination of intrapersonal (emotional) intelligence and interpersonal (social) intelligence. Based on above assertions, he pointed out that it would be more accurate to club these two terms (SI and EI) into one construct. He named this new construct as “*emotional-social intelligence*” or “*ESP*”. According to Bar-On model, “emotional-social intelligence is a cross-section of interrelated emotional and social competencies, skills and facilitators that determine how effectively we understand and express ourselves, understand others and relate with them, and cope with daily demands”.

8.3.6 PASS Theory

Das, Naglieri, and Kirby (1994) proposed Planning, Attention, Simultaneous, and Successive (PASS) Theory, which primarily includes four types of competence:

- 1) Planning process is important when the individual makes a decision about how to solve a problem or carry out an activity. It involves goal-setting and monitoring feedback.
- 2) Attention allows a person to attend selective stimuli and ignore others.
- 3) Simultaneous process helps in perceiving the stimuli as a whole and integrates stimuli into groups.
- 4) Successive processing integrates the stimuli into a specific serial order.

PASS model helps in understanding various cognitive processes like, reasoning, imagery, language, and memory.

8.3.7 Theory of Technological Intelligence

Culture has an influence on intelligence. Vygotsky emphasized the role of sociocultural factors in providing people to live, grow and understand the world around themselves. Thus, Vygotsky forwarded the view that culture promotes intellectual development. The higher order mental functions are culturally determined. Technological intelligence is the type of intelligence among people of advanced countries. Such intelligence reflects the skills of attention, observation, analysis, performance, speed, and achievement orientation.

8.3.8 Theory of Integral Intelligence

When we discuss intelligence from the Indian perspective, it is the integral intelligence that is reflected. As the name suggests, it is a holistic perspective of intelligence that incorporates and integrates both cognitive and non-cognitive processes (Srivastava & Misra, 2007). The main competencies of integral intelligence, thus identified are cognitive competence, social competence, emotional competence and entrepreneurial competence. Both heredity and environment play a role in intellectual development. According to Sri Aurobindo, ultimate aim of intelligence is a direct cognizance without the mediation of senses and hence, without the distortions brought by the ego (Baral & Das, 2004).

Check Your Progress 2

1) What is two-factor theory of intelligence?

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2) Explain triarchic theory of intelligence.

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3) What do you understand by fluid and crystallized intelligence?

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4) Differentiate between integral intelligence and technological intelligence.

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8.4 ASSESSMENT OF INTELLIGENCE

Alfred Binet and Theodore Simon were attributed with the first attempt to measure intelligence scientifically. In 1905, they developed first intelligence test known as Binet-Simon Intelligence Scale. Later in 1908, they coined a term *Mental Age (MA)* to measure the intellectual ability of a person in comparison to his or her fellow age group, and *Chronological Age (CA)* refers to a person's biological age. According to Binet, if a child has MA more than her/his CA, then she/he will be classified as bright. If the child scores two MA years below than her/his CA, then she/he should be identified with intellectual disability.

In 1912, William Stern suggested the concept called *Intelligent Quotient (IQ)*. It referred to a score derived by dividing MA with CA and multiplying the result with 100.

$$IQ = (MA/CA) \times 100$$

So, if MA equals CA, then IQ will be 100.

If MA is less than CA, IQ will be less than 100.

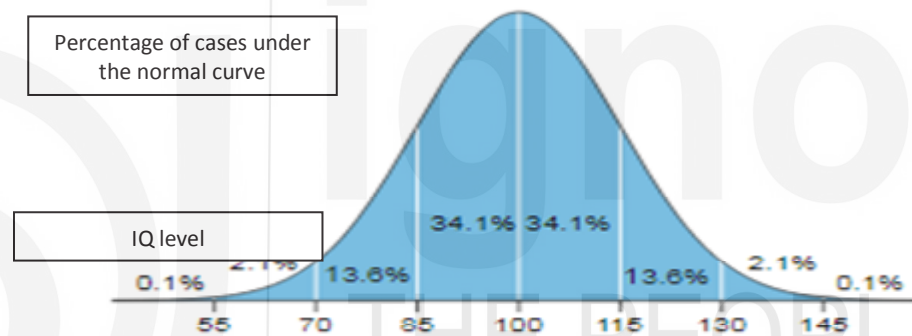


Figure 8.5 :Normalised distribution of IQ with the mean of 100 and standard deviation 15

Image Source: <https://commons.wikimedia.org/>

In this normal distribution (see Figure 8.5), following scores suggest different types of intellectual abilities:

IQ Range	Descriptive Label
Above 130	Very Superior Intelligence (gifted)
120 to 129	Superior Intelligence
110 to 119	High Average Intelligence
90 to 109	Average Intelligence
80 to 89	Low Average Intelligence
71 to 79	Borderline Intellectual Functioning
55 to 70	Mild Mental Intellectual Disability
40 to 54	Moderate Intellectual Disability
25 to 39	Severe Intellectual Disability
Below 25	Profound Intellectual Disability

8.4.1 Types of Intelligence Tests

Intelligence tests have been classified on a number of criteria, such as tests based on the number of participants who can attempt the test, tests based on items used in the test and whether the test can be used across different cultures or not. Figure 8.6 illustrates the classification of intelligence tests.

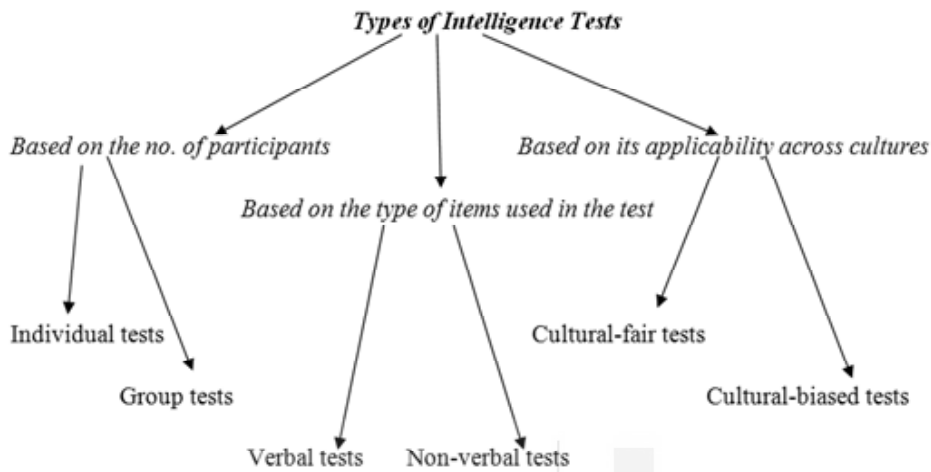


Figure 8.6: Types of Intelligence Tests

8.4.1.1 Individual and Group Intelligence Tests

A) Individual Tests

An individual test is one that is administered to one individual at a time. There are many standardised individual tests such as The Kaufman Scales, Stanford-Binet Scale and, Wechsler Intelligence Scales. We will limit our discussion with two most famous intelligence tests i.e., Stanford - Binet Test and Wechsler Intelligence Tests.

Stanford-Binet Scale of Intelligence

Binet-Simon intelligence test was the first intelligence test, developed by Binet and Simon (1905). It was one of the popular intelligence tests among psychologists. Later this test was revised and adapted by an American psychologist Lewis M. Terman who was working at Stanford University. After validating it on the American population, he renamed the original scale as “Stanford-Binet Scale”. In 2003, the fifth version of the Stanford-Binet Scale, Fifth Edition (SB5) was introduced with 10 subtests measuring following five factors:

- Fluid reasoning
- Knowledge
- Quantitative Reasoning
- Visual-Spatial Processing
- Working Memory

Other than scores with reference to these five factors, SB5 gives two distinct scores, namely Verbal IQ, and Nonverbal IQ. The instrument has 10 subtests. The SB5 can be used for people within the age range from two years to 85 years old individuals. On American sample of 4800 individuals, the reliability of the three IQ scores was found to be in .90 and that of the subtests, ranging from .70 to .85 (Roid, 2002).

Box 8.2: First Intelligence Test

Origin of the Stanford - Binet test

The Stanford-Binet Test traces its roots to the Binet-Simon Scale, French device for identifying levels of intelligence. The Binet-Simon Scale was developed by Alfred Binet and his student Theodore Simon. French education laws were in flux at the time and Binet was approached by a governmental commission. The commission wanted a device to detect children that possessed notably below-average levels of intelligence for their age. Because Binet and Simon could not come up with a solitary identifier of intelligence, they devised a construction that takes into consideration the age of a child and competences at that point in life. From this data, they developed a baseline from which intelligence could be measured.

The Binet-Simon Scale quickly garnered accolades from the psychology community and others. A general consensus quickly developed that this test provided a meaningful way of ascertaining intelligence levels. One of the reasons the Binet-Simon Scale became accepted and highly regarded so rapidly is the fact that it was designed to be adaptable to different languages and cultures.

Stanford University and the Binet-Simon Scale

The work of Binet and Simon was quickly picked up by Lewis M. Terman, a psychologist at Stanford University. Terman became one of the first to develop a derivation of the test for people in the United States. His version of the test was christened the Stanford-Binet Intelligence Scale. Terman's first publication of the U.S. version of the test appeared in an article entitled "The Measurement of Intelligence: An Explanation of and a Complete Guide for the Use of the Stanford Revision and Extension of the Binet-Simon Intelligence Scale."

Source: <https://stanfordbinettest.com/history-stanford-binet-test>

The Wechsler Scales

The Wechsler scales were developed by Dr. David Wechsler. He developed three scales; for adults, for school-age children, and one for preschool children. All three of his tests contain several subtests from verbal as well as nonverbal domain and they can measure intelligence and cognitive abilities. He developed his first test (Wechsler- Bellevue scale) in 1939 when he was working in Bellevue hospital. He devised a new formula for calculating IQ from his scales. As we know, the usual formula of IQ is,

$$IQ = \text{Mental Age} / \text{Chronological Age} \times 100$$

According to Wechsler,

$$IQ = \text{Attained or Actual Score} / \text{Expected Mean score for Age}$$

Box 8.3: Do You Know?

Wechsler was a Romanian-American psychologist who was born on Jan 12, 1896, in Romania. His family relocated to the states in New York when he was just a boy. He earned a Master's Degree from Columbia University in 1917. By 1925, he earned a Ph.D. It was Robert S. Woodworth that first took a chance on the young psychologist. Woodworth was a big shot in the United States Army, and he was overwhelmed by the number of soldiers that were experiencing mental issues after the war. Working alongside Charles Spearman and Karl Pearson, Wechsler was to develop testing to help the army screen new draftees. However, things took a very different turn.

Wechsler dedicated himself to the study of memory loss in soldiers from WWI. His curiosity built a foundation to test the very intelligence of his patients. Studying the brain



Figure 8.7: David Wechsler

Source: <https://wechsleriqtest.com/#>

was a fascinating undertaking, so he expanded his test to include children. He felt the very formation of the intellect could help him resolve the current problems with memory loss.

What he found was mind-blowing. The IQ of a person is directly predisposed to the atmosphere in which they live. Biological and environmental influences can dictate a person's intellect. Wechsler knew that many factors affected intelligence and cognitive ability, but he also found that persistence had a sizable effect too. He realized that one test would not accommodate all age groups, so he developed a series that would be used for all ages.

Source: <https://wechsleriqtest.com/#>

There are three versions of Wechsler's intelligence scale:

- i) **WPPSI – Wechsler Pre-School & Primary Scale of Intelligence:** This scale can be administered on children from 2 years and 6 months to 7 years and 7 months. It was introduced in 1967 and originally designed for children between 4 years and 6.5 years old. It consists of 14 subtests measuring three indices, viz., verbal, performance and full-scale IQ. Currently, it is in fourth revision known as WPPSI-IV.
- ii) **WISC – Wechsler Intelligence Scale for Children:** This test can be administered on children from 6 to 16 years old. This test was developed from the Wechsler-Bellevue Intelligence Scale and was first introduced in 1949. This test is often used in schools and other educational setups with the aim to identify gifted children as well as children with learning difficulties. The most recent version of the test is the WISC-V, which was released in 2014.
- iii) **WAIS – Wechsler Adult Intelligence Scale:** This test is used for adolescents from 16 years of age through adulthood to measure general intelligence, by administering many subtests. Each of the test is an indicator and estimator of intelligence. The current version of the test is the WAIS-IV which was launched in 2008.

The recent editions of Wechsler Intelligence Scales that are adapted for India are Wechsler Adult Intelligence scales Fourth Edition, India (WAIS-IV, INDIA), Wechsler Abbreviated Scale of Intelligence - Second Edition, India (WASI-II INDIA). Wechsler Memory Scale - Third Edition, India (WMS-III INDIA).

WAIS IV INDIA : It is an adapted and standardized for India. It is an advanced measure of cognitive ability for adolescents and adults. It provides subtests and composite scores that represent intellectual functioning in specific cognitive domains as well as composite scores for general mental ability (Full Scale IQ). It is also used to assess learning difficulties and giftedness. It is a highly reliable and valid tool.

B) Group Tests

A group test is one that can be administered to more than one person at the same time. Thus, making the tests quick in administration. There are many intelligence tests which can be considered as group tests such as Multidimensional Aptitude Battery (MAB; Jackson, 1984), Cognitive Abilities Test (Lohman & Hagen, 2001), Culture Fair Intelligence Test (1940) and, Raven's Progressive Matrices (1938,1992). As an example, we will discuss only Raven's Progressive Matrices briefly.

Raven's Progressive Matrices (RPM)

Raven's Progressive Matrices (RPM) was developed by John C. Raven in 1938. It is a non-verbal test of inductive reasoning, designed to measure Spearman's g factor or general intelligence. It consists of 60 multiple choice items and can be administered on children from 5 years-old to the older adults. The test contains visual geometric designs with a missing piece and the task of the test taker is to choose the missing part of the matrix from six to eight given alternatives. Raven constructed three different forms of tests: Standard Progressive Matrices (SPM), Coloured Progressive Matrices (CPM) and, Advanced Progressive Matrices (APM). SPM is suitable for average individual between the ages of 6 and 80 years. CPM is available for younger children and for special groups who cannot be tested on SPM. APM is available for above average adolescents and adults.

8.4.1.2 Verbal and Nonverbal Tests

A) Verbal Tests

Verbal intelligence is the ability to use and solve problems using language-based reasoning. Verbal tests are those which require the use of language for successful performance in it. Verbal intelligence is the ability to comprehend and solve language-based problems. Initially, approximately all intelligence tests were based on language only but later it was realised that such tests are of no use for people who were illiterate, young children who have not acquired the language abilities fully and people with speech difficulties. To overcome the limitation of these verbal tests, many psychologists came up with a number of non-verbal intelligence tests. Moreover, many verbal standardised tests such as Wechsler scales and Kaufman scales now also have some non-verbal test components.

B) Non-Verbal Tests

A nonverbal test of intelligence measures one's ability to analyze visual information and solve problems without necessarily using words. Nonverbal tests are also known as performance tests as they generally require a construction of certain patterns. Some of the famous nonverbal tests are Koh's Block Design Test, Cube Construction Tests, and Pass along Tests. Raven's Progressive Matrices (1938, 1986, 1992, 1995) is also a well-known nonverbal intelligence test which has been discussed in the previous section.

8.4.1.3 Culture-Fair Tests and Culture-Biased Tests

A) Culture-Fair Tests

Every culture is unique in terms of their values, language, expectations, demands and environmental experiences. A child reared in the US will be very different in many respects with a child been brought-up in Indian sub-urban area. Due to this reason, for assessing individual belonging to different cultures, psychologists came up with tests which are free from any cultural biases. Some of the famous culture-fair tests are The Culture Fair Test (Cattell, 1940), Raven's Progressive Matrices (Raven, 1938, 1986, 1995), The Leiter International Performance Scale-Revised (Roid & Miller, 1997) and, Draw-a-Man Test (Goodenough, 1926). All these and other culturally fair tests are non-verbal in nature. Now, we will discuss an example of culture-fair intelligence test-Draw-a-Man test (Goodenough, 1926).

Draw-a-Man Test

This test was initially developed by Goodenough (1926). Later, it was revised by

Goodenough and Harris in 1963, known as Goodenough-Harris Drawing Test. Based on the projective technique, this test requires a test taker (children only) to make three pictures on three separate papers. They are asked to draw a man, women and themselves without giving any further instructions. Interestingly, instead of artistic skill, emphasis is given on the child's ability to observe accurately and think conceptually.

B) Cultural-Biased Tests

Many psychologists have attempted to develop culture-fair intelligence tests by making it non-verbal in nature. However, it was realized that the impact of culture cannot be eliminated completely from these tests even after making it nonverbal completely. Due to this reason, only the term 'culture fair' is used in place of 'culture free' tests.

8.5 SUMMARY

Now that we have come to the end of this unit, let us summarize all the major points that we have covered.

- Intelligence includes the capacity to understand novel stimuli, learning language and communicate with others, being aware of environment, have the ability to reason, plan, and solve the problems creatively.
- Charles Spearman proposed the 'Two Factor Theory of Intelligence'. He used factor analysis and correlation analysis to find out the two important factors of intelligence i.e., the general 'g' factor and specific 's' factor.
- Thurstone suggested that intelligence is a composite of seven distinct primary mental abilities (PMA). Using improved statistical techniques, he developed a new factor model of intelligence. These factors were called as primary mental abilities.
- Howard Gardner (1983) proposed the theory of multiple intelligences. According to him intelligence is not a single entity, rather it consists of eight types of intelligence.
- Robert J. Sternberg formulated the 'triarchic theory of intelligence' which theorizes that intelligent behaviour consists of three major components or subtheories. The subtheories are (1) componential or analytical intelligence, (2) contextual intelligence or the practical intelligence and, (3) experiential or creative intelligence.
- Cattell proposed two types of intelligence, fluid and crystallised. Das, Naglieri, and Kirby (1994) proposed Planning, Attention, Simultaneous, and Successive (PASS) Theory.
- Intelligence in the Indian perspective is known as integral intelligence. The higher order mental functions are culturally determined. Technological intelligence is the type of intelligence reflected among people from advanced countries.
- There are different ways to measure intelligence. Intelligence tests have been classified on a number of criteria, such as tests based on the number of participants who can attempt the test, tests based on items used in the test and whether the test can be used across different cultures.

8.6 KEY WORDS

Intelligence	: It is the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his environment.
G-factor	: Known as 'general-factor', this is an innate cognitive activity that influence all other kinds of mental activities. It remains constant throughout one's life.
S-factor	: Known as 'specific-factor'. It represents our performance on a specific or particular mental activity. It is learned and one can have many s-factors.
Mental age	: It is a measure of person's intellectual development relative to people of his/her age group.
Crystallized intelligence	: A type of intelligence which consists of the knowledge a person has already acquired and the ability to use that knowledge whenever required.
Fluid intelligence	: The type of intelligence we use when dealing with novel situations and problems.
Verbal Comprehension	: The ability of reading comprehension, define and understand words, concepts, ideas; verbal reasoning
Spatial Relations	: It involves the ability to visualise and manipulate different geometric patterns, forms and imaginary objects in space.
Emotional Intelligence	: It is the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions.

8.7 REVIEW QUESTIONS

- 1) Which of the following is part of Wechsler's definition of intelligence?
 - a) naturalistic intelligence
 - b) iconic memory
 - c) ability to deal effectively with the environment
 - d) spatial and kinesthetic abilities
- 2) Which of the following is one of Gardner's types of intelligence?
 - a) executive skills
 - b) music
 - c) ethics
 - d) creativity

- 3) The person responsible for the development and design of the first useful individual test of intelligence is
 - a) Freud
 - b) Terman
 - c) Binet
 - d) Wechsler
- 4) The distribution of IQ scores
 - a) is approximately normal or bell-shaped
 - b) shows that most people score between 80 and 100
 - c) reveals a difference in the average for men and women
 - d) falls off abruptly above 100
- 5) Define intelligence.
- 6) Discuss nature vs. nurture debate over intelligence.
- 7) Explain Spearman's and Thurstone's theory of intelligence.
- 8) Explain Triarchic theory of intelligence.
- 9) Differentiate between mental age, chronological age and intelligence quotient. How are these concepts related to each other?
- 10) Differentiate between culturally-fair intelligence tests and culturally-biased intelligence tests.

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8.10 ONLINE RESOURCES

- For more information on Theories of Intelligence, visit
 - <http://www.gcbtcollege.in/studymaterial/Intelligence%20Theories.pdf>
 - <https://scottbarrykaufman.com/wp-content/uploads/2012/09/Kaufman-Kaufman-Plucker-in-press.pdf>
 - <http://www.psych.purdue.edu/~willia55/120/10.IntelligenceMM.pdf>
- For more on Measurement of Intelligence, visit
 - https://psychanalyse.com/pdf/THE_MEASUREMENT_OF_INTELLIGENCE.pdf
 - <https://journal-archievs26.webs.com/107-124.pdf>
 - http://shodhganga.inflibnet.ac.in/bitstream/10603/46917/6/06_chapter%202.pdf
- For interesting articles on Nature Vs. Nurture debate on Intelligence, visit
 - http://pzacad.pitzer.edu/~dmoore/publications/2013_moore_nature-nurture.pdf
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 - <http://lib.oup.com.au/secondary/science/Psychology/1and2/Oxford-Psych-1and2-Ch8-nature-vs-nurture.pdf>

Answer to Multiple choice questions

1) (c) 2) (d), 3) (c), 4) (a)

