

Chapter 1

VARIATIONS IN PSYCHOLOGICAL ATTRIBUTES

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LEARNING OBJECTIVES

After going through this presentation, you will be able to:

1. understand Individual differences in Human functioning and their importance
2. comprehend assessment and its types
3. learn about different methods that are used to assess psychological attributes
4. understand various psychometric theories of intelligence.

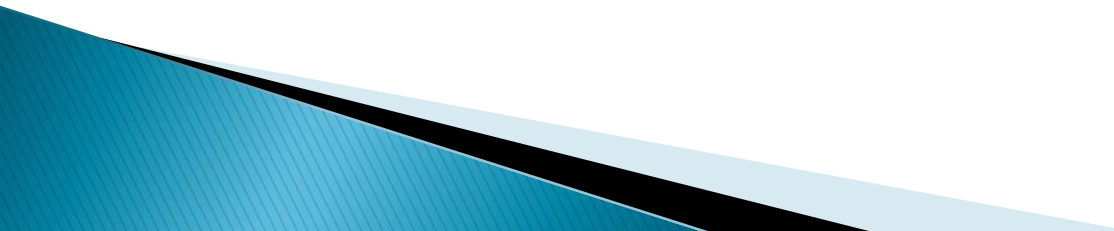
INDIVIDUAL DIFFERENCES

- ▶ refer to distinctiveness and variations among people's characteristics and behavior patterns.

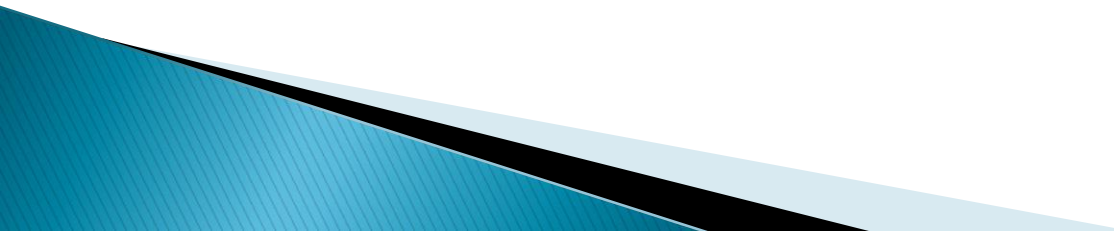
Types of difference

- Physical characteristics like height, weight, strength, hair color etc.
- Psychological dimensions such as intelligence, creativity, perceptions, values and beliefs, abilities, talents, strengths, weaknesses

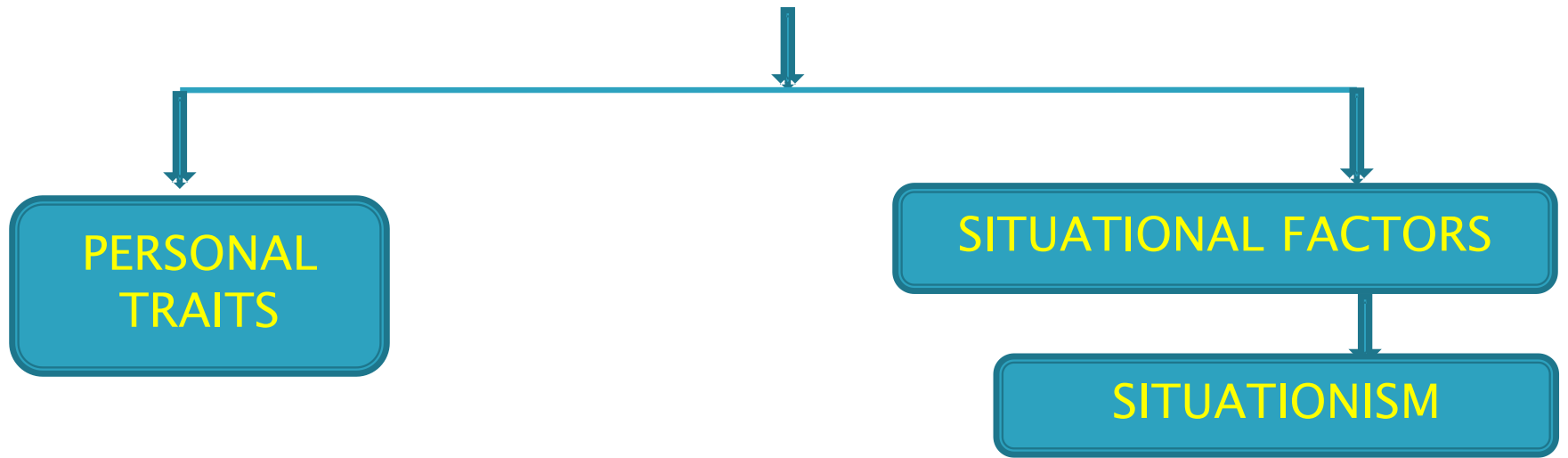
Importance of Variations

- ▶ Add color and beauty to life. Otherwise life would become very dull and monotonous.
 - ▶ Provide a distinct physical and psychological identity to an individual which makes each one of us unique.
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Sources of Differences

- Genetic inheritance
 - Culture
 - Gender
 - Experience
 - Occupational/professional training
 - Work, Changing patterns of work
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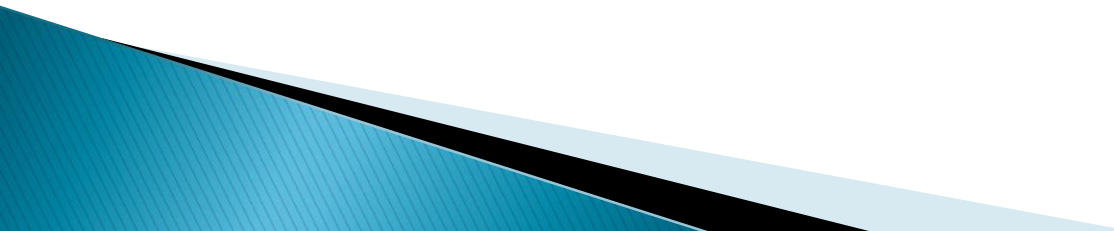
Psychological Explanation for Variations



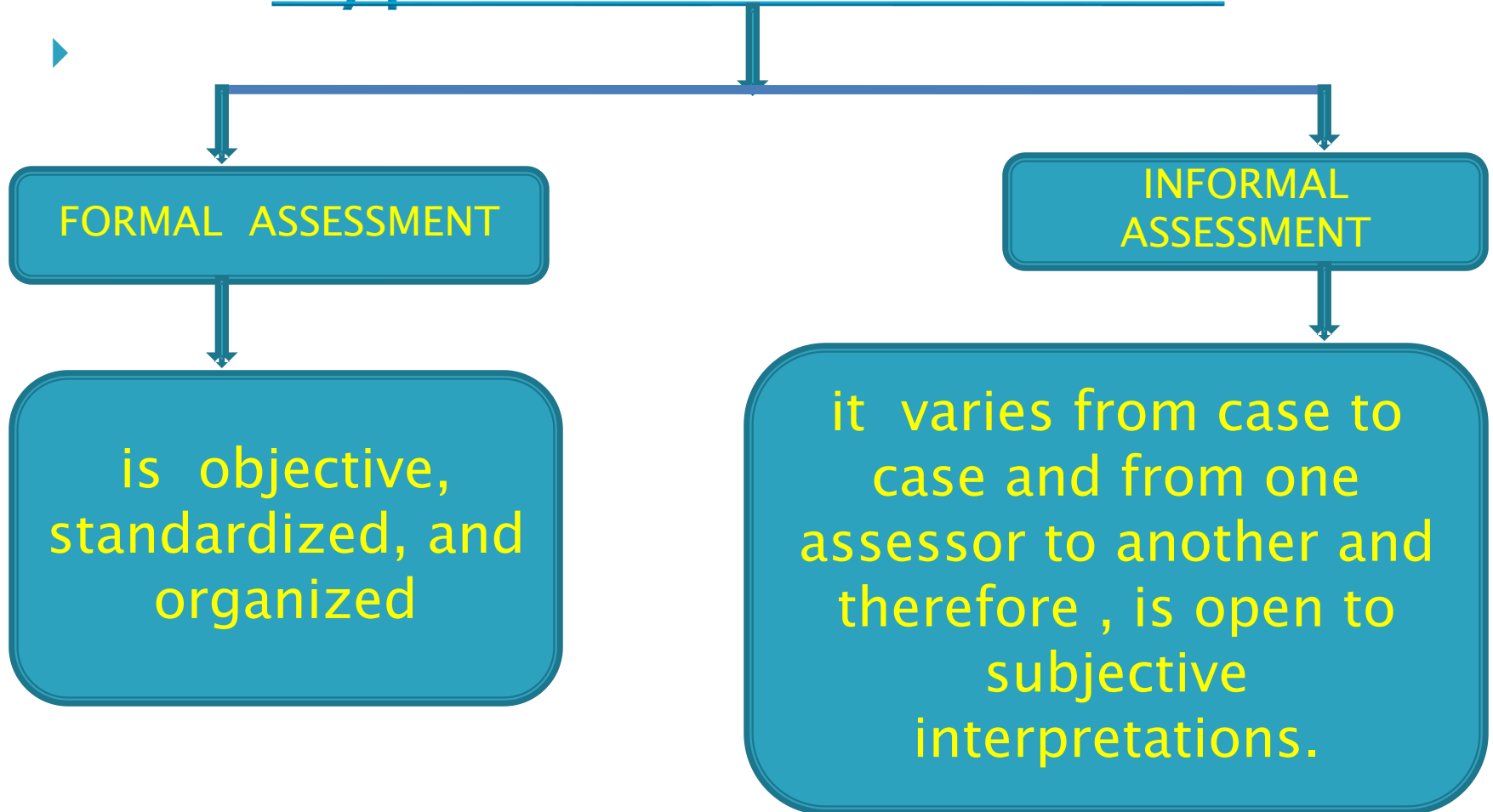
Situationism states that situations and circumstances in which one is placed influences one's behavior.

Situationist perspective views human behavior as resulting from interaction of external and internal factors.

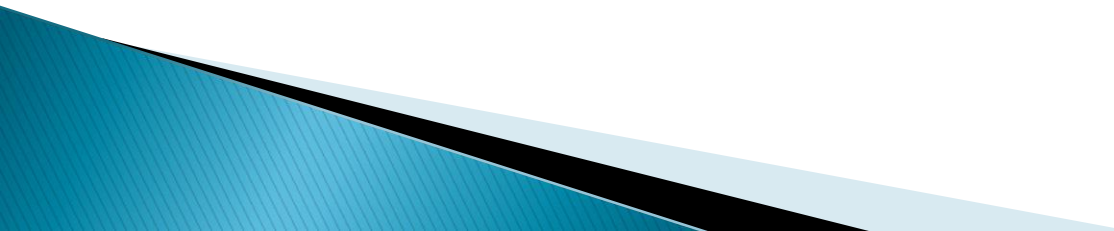
Assessment


- ▶ is the first step in understanding a psychological attribute
 - ▶ refers to the measurement of psychological attributes of individuals, often using multiple methods and their evaluation in terms of certain standard of comparison.
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Types of Assessment



Some Important Psychological Attributes that are tested

- ▶ Intelligence
 - ▶ Aptitude
 - ▶ Personality
 - ▶ Interest
 - ▶ Values
- 

Psychological Attribute	Definition	Purpose of assessment
1. Intelligence	It is the global and aggregate capacity of an individual to think rationally, act purposefully, and to deal effectively with his/her environment	To measure a person's general cognitive competence including the ability to profit from schooling. 
2. Aptitude	It refers to the individual's underlying potential for acquiring skills.	To predict what an individual will be able to do if given proper environment and training.
3. Interest	It is an individual's preference for engaging in one or more specific activities relative to others.	To decide what subjects or courses they can pursue comfortably and with pleasure. It helps us in making choices that promote life satisfaction and performance on jobs.

<p>4. Personality</p>	<p>It refers to the relatively enduring characteristics of a person that makes her or him distinct from others</p>	<p>To assess an individual's unique characteristics and to explain and predict his/her behavior</p>
<p>5. Values</p>	<p>They are enduring beliefs about an ideal mode of behavior</p>	<p>It helps to determine the dominant values of a person that guide his/her actions.</p>

Assessment methods

Several methods are used for psychological assessments. Some important ones are:

1. Psychological Test
2. Interview
3. Case study
4. Observation
5. Self report

Psychological Test

- It is an objective and standardized measure of an individual's mental and/or behavioral characteristics
- Objective tests are used for the assessment of various attributes like intelligence, aptitude etc.. Projective tests have been developed especially for the assessment of personality.
- These tests are widely used for various purposes like clinical diagnosis, guidance, personnel selection, placement and training.

Interview

- It involves seeking information from a person on a one – to – one basis.
- Eg: counselor interacting with a client, salesperson doing door-to-door survey regarding the usefulness of a particular product, employer selecting an employee for the organization, journalist interviewing people on important national and international issues

Case Study

- It is an in-depth of the individual in terms of his/her psychological attributes, psychological history in context of her/his psychosocial and physical environment.
- They are widely used by clinical psychologists. Case analyses of the lives of great people can be also highly illuminating for those willing to learn from their life.
- They are based on data generated by various methods like interview, observation, questionnaires, psychological tests etc..

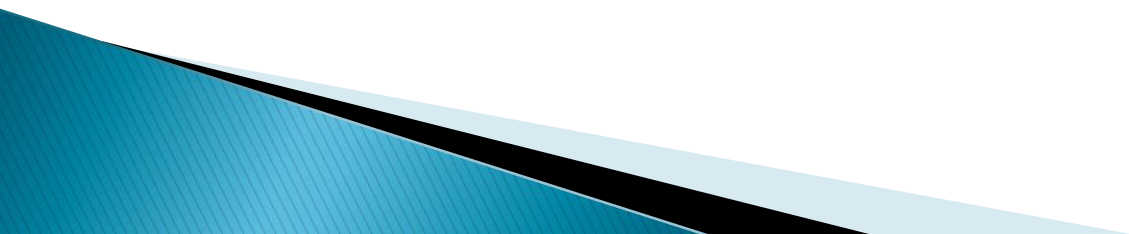
Observation

- It involves employing systematic, organized, and objective procedures to record behavioral phenomena occurring naturally in real time
- Certain phenomena can be easily studied through observation. E.g.. Mother–child interaction
- The major problems are – observer has a little control over the situation; the reports may suffer from subjective interpretations of the observer.

Self- Report

- It is a method in which a person provides factual information about himself/herself and /or opinions, beliefs etc.
- Such information may be obtained by using an interview schedule or a questionnaire, a psychological, test or personal diary.

Intelligence



Discovering the Attributes of Intelligent Persons

- ▶ 1. Who is the most intelligent of your classmates? Think of her/him in your mind, and write down a few words/phrases describing that person.
- ▶ 2. Think of 3 other persons in your immediate environment, whom you consider intelligent, and write down a few words/phrases describing the attributes of each.
- ▶ 3. Judge the newer additions with reference to what you wrote in item no. 1.
- ▶ 4. Make a list of all the attributes you consider as manifestations of intelligent behaviors. Using these attributes, try to frame a definition.

- ▶ **The Oxford Dictionary** explains intelligence as the power of perceiving, learning, understanding, and knowing.
- ▶ **Alfred Binet** defined intelligence as the ability to judge well, understand well, and reason well.
- ▶ **Wechsler** understood intelligence in terms of its functionality, i.e. its value for adaptation to environment. He defined it as the global and aggregate capacity of an individual to think rationally, act purposefully, and to deal effectively with her/his environment.
- ▶ Other psychologists, such as **Gardner and Sternberg** have suggested that an intelligent individual not only adapts to the environment, but also actively modifies or shapes it.

THEORIES OF INTELLIGENCE

PSYCHOMETRIC APPROACH

- ▶ It considers intelligence as an aggregate of abilities.
- ▶ It focuses on the structure of intelligence or its underlying dimensions

INFORMATION PROCESSING APPROACH

- ▶ It considers intelligence as a process which people use in intellectual reasoning and problem solving.
- ▶ It focuses on the cognitive functions underlying intelligent behavior.

Watch the video through the following link to seek further clarity.

<https://youtu.be/ye8fAAobjCs>

Attempt the given questions

1. Rashi is distinct from her classmates and always differs from them in all behavioral patterns. This phenomenon is known as
2. A violent child tends to behave submissively and nicely in front of the principal. This change in his behavior is due to
3. assessment helps us to explain and predict an individual's behavior.
4. Define case study.
5. Differentiate between
 - a) formal and informal assessment
 - b) psychometric and information processing approach
6. Enlist any four uses of psychological tests.
7. Deliberate how the concept of intelligence has evolved over time.
8. Discuss the purpose of assessment of the following psychological constructs –
 - a) intelligence
 - b) aptitude
 - c) interest
 - d) personality

PSYCHOMETRIC APPROACHES

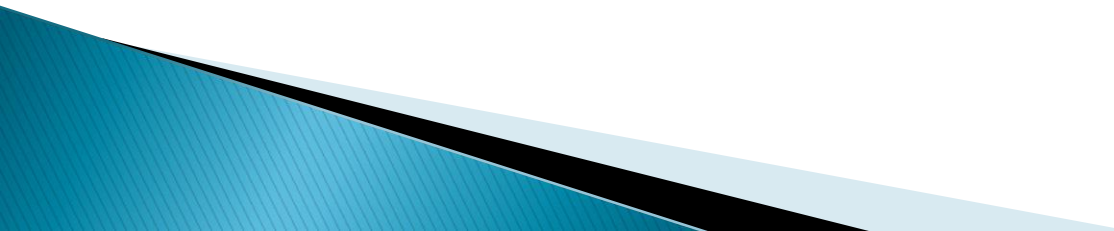
THEORIES

1. UNI (ONE) FACTOR THEORY
2. TWO FACTOR THEORY
3. THEORY OF PRIMARY MENTAL ABILITIES
4. HIERARCHICAL MODEL OF INTELLIGENCE
5. STRUCTURE OF INTELLECT MODEL

THEORISTS

1. ALFRED BINET
2. CHARLES SPEARMAN
3. LOUIS THURSTONE
4. ARTHUR JENSEN
5. J. P. GUILFORD

UNI / ONE FACTOR THEORY

- ▶ Proposed by Alfred Binet
 - ▶ It arose from his interest in differentiating more intelligent from less intelligent individuals
 - ▶ Conceptualised intelligence as consisting of one similar set of abilities which can be used for solving any or every problem in an individual's environment
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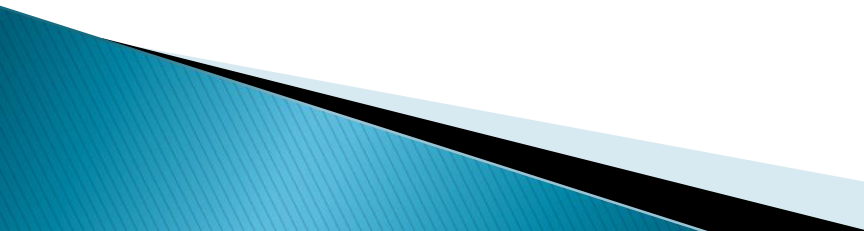
TWO FACTOR THEORY

- ▶ Proposed by Charles Spearman in 1927
- ▶ He employed a statistical method called factor analysis.
- ▶ Conceptualised intelligence as consisting of two factors –

GENERAL FACTOR (G -FACTOR)	SPECIFIC FACTOR (S - FACTOR)
It includes mental operations which are primary and common to all performances.	These are specific abilities which allow an individual to excel in a particular domain.

- ▶ Thus, excellent singers, architects, scientists, and athletes may be high on g – factor, but in addition to this they have specific abilities pertaining to their respective domain.

THEORY OF PRIMARY MENTAL ABILITIES

- ▶ Proposed by Louis Thurstone
 - ▶ Conceptualizes intelligence as consisting of seven primary abilities each of which are relatively independent of each other.
 - ▶ These primary abilities are–
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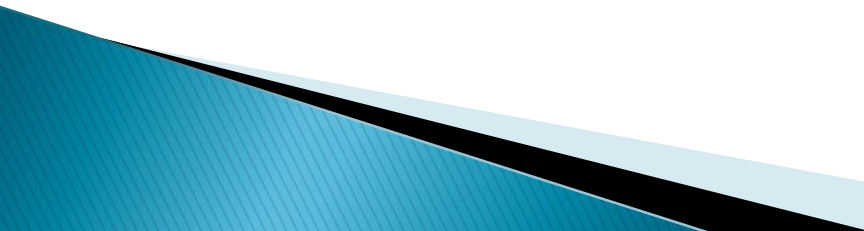
1. Verbal comprehension	grasping meaning of words, concepts, and ideas
2. Numerical Abilities	speed and accuracy in numerical and computational skills
3. Spatial Relations	visualising patterns and forms
4. Perceptual Speed	speed in perceiving details
5. Word Fluency	using words fluently and flexibly
6. Memory	accuracy in recalling information
7. Inductive Reasoning	deriving general rules from presented facts

HIERARCHICAL MODEL OF INTELLIGENCE

- ▶ Proposed by Arthur Jensen
- ▶ Conceptualised intelligence as consisting of abilities operating at two levels –

<u>Level I</u>	<u>Level II.</u>
It is also called associative learning	It is also called cognitive competence
In this output is more or less similar to the input	It involves higher-order skills as they transform the input to produce an effective output.
e.g., rote learning and memory	e.g., reasoning and decision making

STRUCTURE OF INTELLECT MODEL

- ▶ Proposed by J. P. Guilford
 - ▶ According to Guilford's Structure of Intellect (SI) theory, an individual's performance on intelligence tests can be traced back to the underlying mental abilities or factors of intelligence.
 - ▶ SI theory comprises up to 180 different intellectual abilities organized along three dimensions—Operations, Content, and Products.
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Operations dimension

- ▶ SI includes six operations/general intellectual processes:

1. Cognition	ability to understand, comprehend, discover, and become aware of information.
2. Memory recording	ability to encode information.
3. Memory retention	ability to recall information.
4. Divergent production	ability to generate multiple solutions to a problem; creativity.
5. Convergent production	ability to deduce a single solution to a problem; rule-following or problem-solving.
6. Evaluation	ability to judge whether or not information is accurate, consistent, valid.

Content dimension

- ▶ SI includes five broad areas of information to which the human intellect applies the five operations:

Visual	•Information perceived through seeing.
Auditory	•Information perceived through hearing.
Symbolic	•Information perceived as symbols or signs that have no meaning by themselves; e.g., Arabic numerals or the letters of an alphabet.
Semantic	•Information perceived in words or sentences, whether oral, written, or silently in one's mind.
Behavioral	Information perceived as acts of an individual or individuals.

Product dimension

- ▶ This dimension contains results of applying particular operations to specific contents. The SI model includes six products, in increasing complexity:

Units	Single items of knowledge.
Classes	Sets of units sharing common attributes.
Relations	Units linked as opposites or in associations, sequences, or analogies.
Systems	Multiple relations interrelated to comprise structures or networks.
Transformations	Changes, perspectives, conversions, or mutations to knowledge.
Implications	Predictions, inferences, consequences, or anticipations of knowledge.

- ▶ Therefore, according to Guilford there are –
 $6 \times 5 \times 6 = 180$
intellectual abilities or factors.
- ▶ Each ability stands for a particular operation in a particular content area and results in a specific product, such as
 - # Comprehension of Figural Units
 - # Evaluation of Semantic Implications.

OPERATION

Each of Guilford's three dimensions of intellectual abilities and activities—operation, content, and product—has many attributes. Through various combinations, these dimensions and their attributes produce 150 separate

- EVALUATION
- CONVERGENT PRODUCTION
- DIVERGENT PRODUCTION
- MEMORY
- COGNITION

OPERATION
(cognition)

CONTENT
(symbolic)

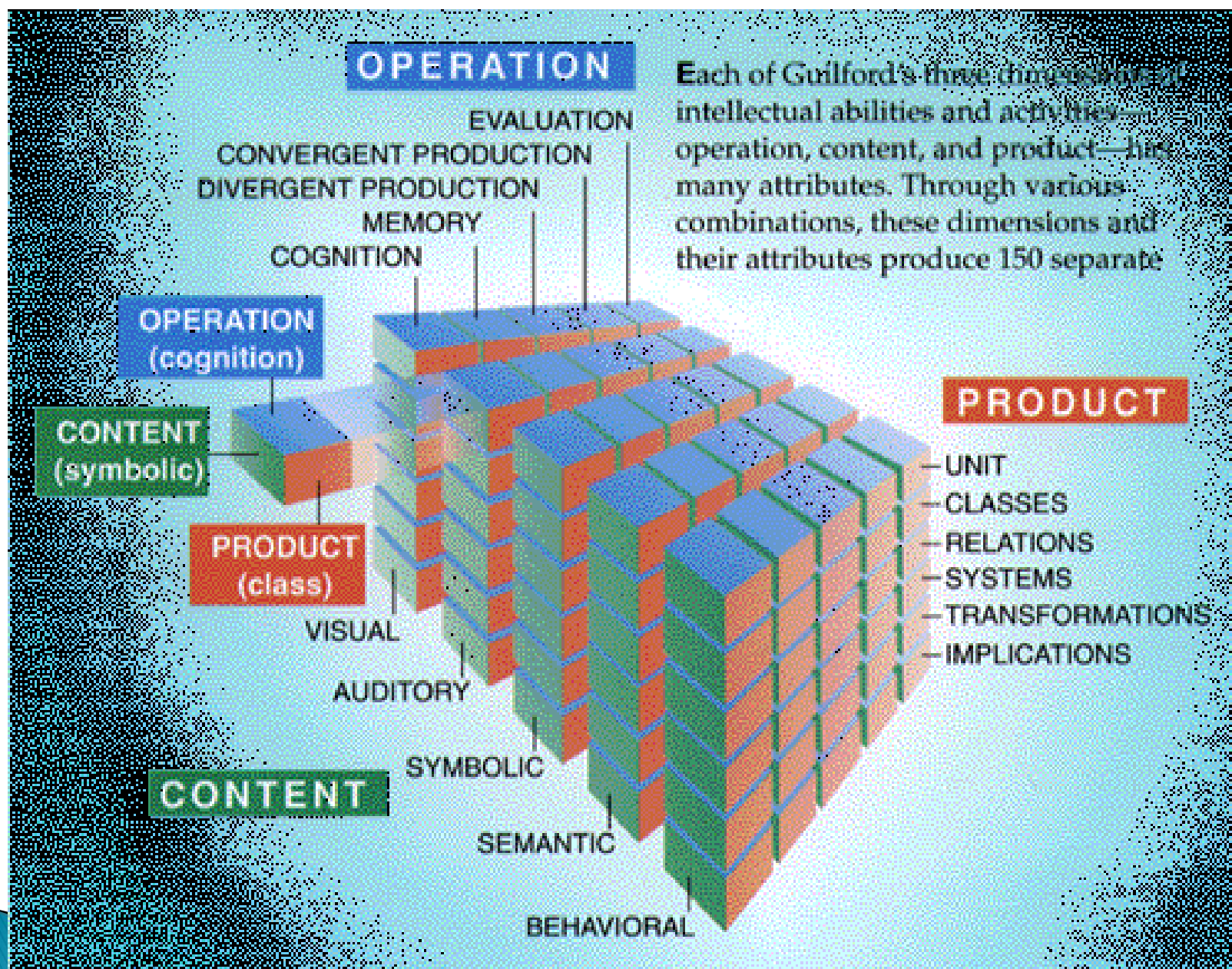
PRODUCT
(class)

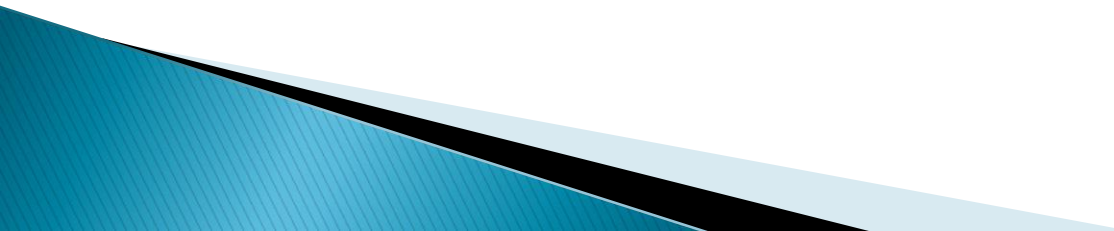
PRODUCT

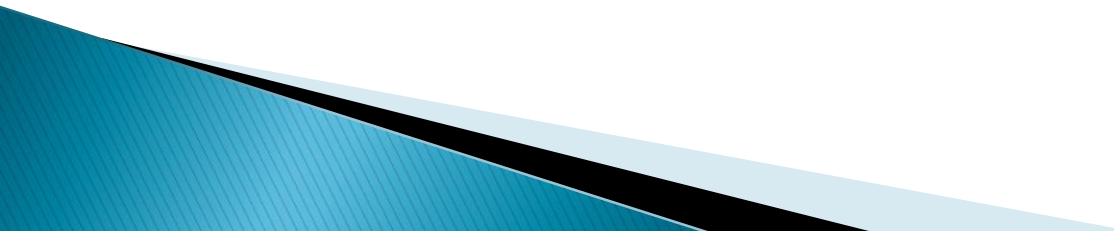
- UNIT
- CLASSES
- RELATIONS
- SYSTEMS
- TRANSFORMATIONS
- IMPLICATIONS

- VISUAL
- AUDITORY
- SYMBOLIC
- SEMANTIC
- BEHAVIORAL

CONTENT



- ▶ Guilford's original model was composed of 120 components because he had not separated Figural Content into separate Auditory and Visual contents, nor had he separated Memory into Memory Recording and Memory Retention.
 - ▶ When he separated Figural into Auditory and Visual contents, his model increased to $5 \times 5 \times 6 = 150$ categories.
 - ▶ When Guilford separated the Memory functions, his model finally increased to the final 180 factors
- 

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<https://youtu.be/t9ZKL71Ch5U>

<https://youtu.be/9xTz3Qjclol>



Attempt the given questions

1. Spatial Ability refers to
 - Skills in forming visual images and patterns
 - Sensitivity to feature natural world
 - Using the body flexibility and creatively
2. Charles Spearman prepared a
 - Two Factor Theory
 - Level One Level Two theory
 - Theory of Primary mental abilities
3. Guilford gave a model of
 - a) 150 Cells
 - b) 180 Cells
 - c) 170 Cells
 - d) 120 Cells
4. The two levels of intelligence proposed by Jensen are and
5. Differentiate between 'g' factor and 's' factor.
6. How does uni-factor theory conceptualize intelligence?
7. For each of the primary mental abilities listed by Thurstone, identify at least two professions/fields of work that they will facilitate.

8 . Fill in the following details as per the structure of intellect model.

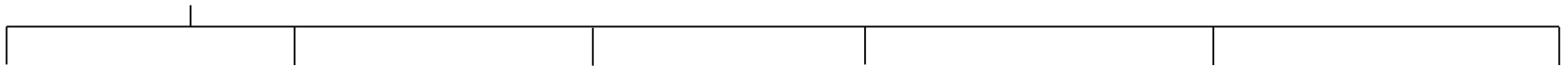
This model was proposed by

It classifies intellectual traits among three dimensions:

1. Operations

They are.....

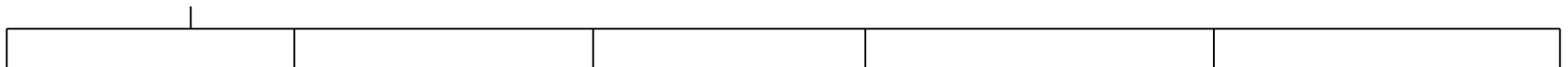
These include –



2. Contents

They refer to

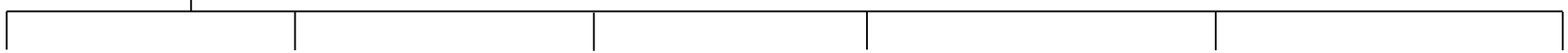
These include –



3. Products

They refer to

These include –



This model has X X = Cells.

Each cell is expected to have

