

Theories of intelligence

UNITIVE, ASSOCIATIVE AND COGNITIVE THEORIES

THEORIES OF INTELLIGENCE

- Theories of intelligence represent the views regarding what intelligence comprises of.
- How many types of intelligence there are, the role of nature versus nurture in intelligence, how intelligence is represented in the brain, and the meaning of group differences in intelligence
- Theories can be grouped as
 - \$ Factor theories
 - \$ Hierarchical theories
 - \$ Process oriented theories
- The first two can also be said associative theories whereas the third one can be said cognitive theories.

Factor theories

- Unifactor Theory
- Two Factor Theories
- Multifactor Theories
- Group Factor Theory
- Structural Theory
- Hierarchical Theory

Process theories

- Piaget Cognitive Developmental
- Bruner Cognitive Theory
- Sternberg Triarchic Theory

Uni factor theory

- Proposed by Binet, Termon, Stern
- Intelligence is one structure .
- Un-divisible unit.
- According to this theory, mind is made up of different faculties like reasoning, memory, discrimination, imagination, etc. □
These faculties are independent of each other and can be developed by vigorous training.

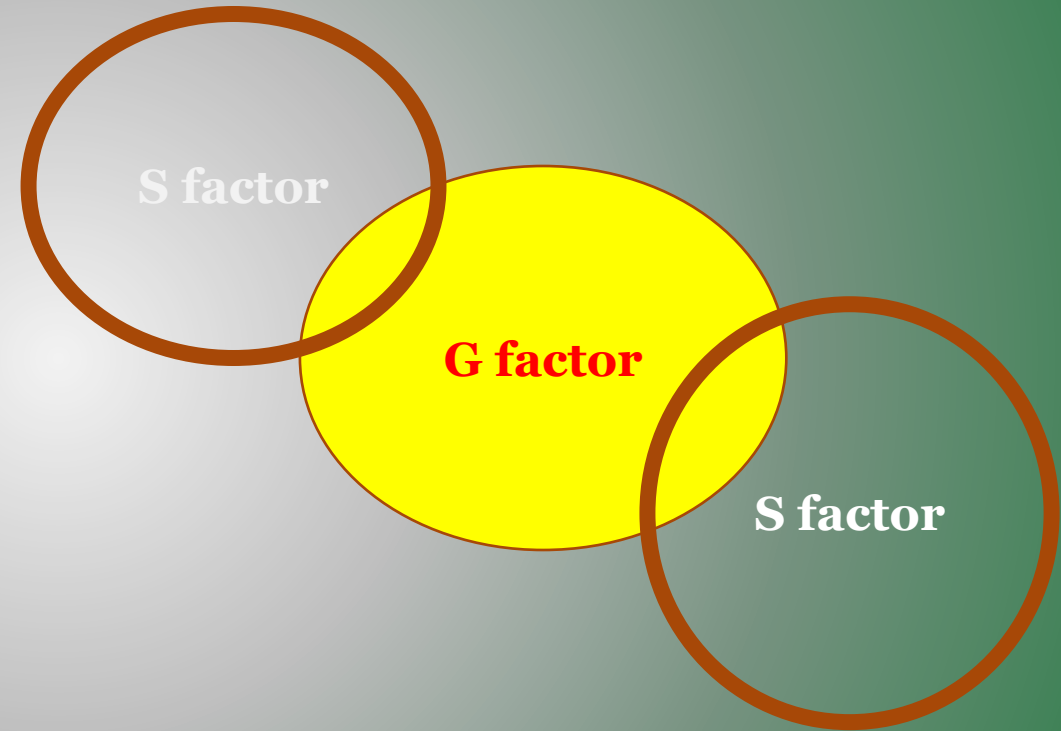
Two factor theory

Proposed by Spearman in
1904

Two factors are :

G factor

S factor



The factors of Spearman theory

- G factor- general capacity.
- Essential for all activities (mental energy)
- Innate ability
- Not affected by past experience , training etc.
- Varies in individual
- S factor – specific abilities
- required specifically for specific task
- it is not innate, but requires innate capacity (g factor)
- It is affected by training experience etc.
- all the s factors are correlated with g factor in varied degree.

Multi factor theory

- proposed by Thorndike
- intelligence is composed of multi factors
- **Thorndike** believed that there was nothing like General Ability. Each mental activity requires an aggregate of different set of abilities. The correlation found in two task is due to the similarity between the attributes of intelligence .

Multi factor

- He distinguished the following four attributes of intelligence :
- (a) **Level**—refers to the level of difficulty of a task that can be solved.
- (b) **Range**—refers to a number of tasks at any given degree of difficulty.
- (c) **Area**—means the total number of situations at each level to which the individual is able to respond.
- (d) **Speed**—is the rapidity with which we can respond to the items.

Group factor theory

- Proposed by L.L. Thurston
- certain mental operations have common primary factor which gives them functional and psychological unity. These can be said primary mental abilities
- These primary mental abilities are independent and separate with each other.

THURSTONE....

Number Factor (N)—Ability to do Numerical Calculations rapidly and accurately.

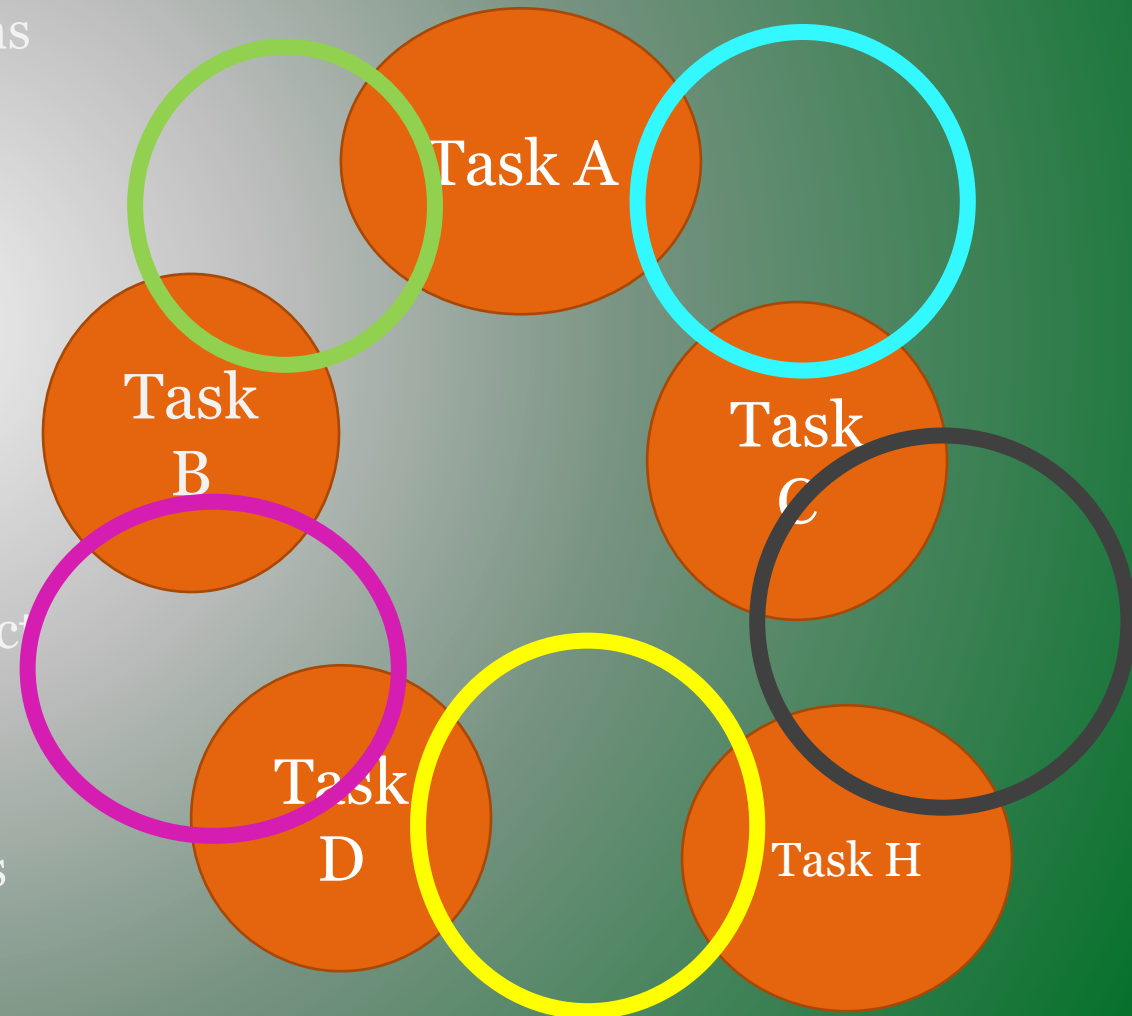
Verbal Factor (V)—Found in tests involving Verbal Comprehension.

Space Factor (S)—Involved in any task in which the subject manipulates the imaginary object in space.

Memory (M)—Involving ability to memorize quickly.

Word Fluency Factor (W)—Involved whenever the subject is asked to think of isolated words at a rapid rate.

Reasoning Factor (R)—Found in tasks that require a subject to discover a rule or principle involved in a series or groups of letters.



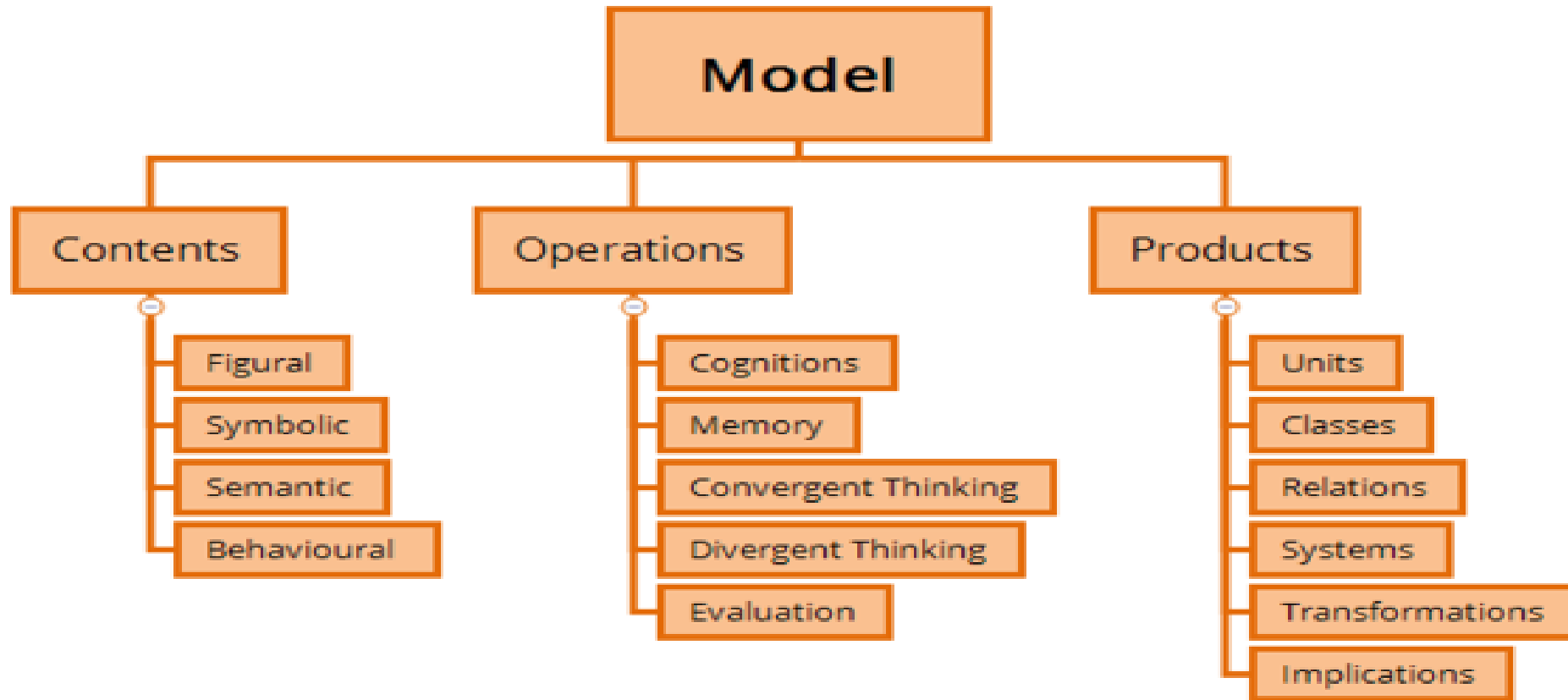
STRUCTURAL THEORY

- Proposed by Guilford
- Intelligence is like a three dimensional model .
- The mental activities involve content , operations and product.

each of which has further subdivisions



The subdivisions of content, operations and product.



- Thus the factors in intelligence are $4 \times 5 \times 6 = 120$

To be continued in next class

