RAYMOND CATTELL’S FACTOR- ANALYTIC TRAIT THEORY

E CONTENT CREATED

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Objective

- Students will be able to know about and understand the key concepts and the basic dimensions of personality described by Raymond B. Cattell.

Learning outcome-

The students would be able to draw the differences between the various types of traits used by Cattell in his personality theory. They would be able to understand that how do the concept of dynamic lattice helps people in evolving their personality in various situations.

Cattell has used the concept of Factor analysis while identifying the various traits of personality. His theory has used factor analysis as an empirical tool while identifying theoretical concepts of traits.

- The essential ideas of factor analysis were introduced by Spearman who is known for his work with mental abilities.
- He defined that any two tests, which are related, identify two factors. One is a general factor and other is a specific factor.
- General factor is common to both tests while specific factor is unique to each test.
- By examining patterns of covariation, factor analysis allows us to take large number of data based upon different measures to be reduced to certain set of clusters or factors.
- The steps used in carrying out factor analysis are-
  (a) Collecting measures from a large number of subjects on each of a number of variables
  (b) Intercorrelating all variables
  (c) Extracting factors from the correlation matrix
  (d) Determining the factor loadings of the item measures on the factors
  (e) Interpreting and naming the factors
- Cattell’s theory identifies the basic traits of personality with the help of factor analysis.

The nature of Personality: A structure of traits

- Cattell (1950) has defined “Personality is that which permits a prediction of what a person will do in a given situation. The goal of psychological research in personality is thus to establish laws about what different people will do in all kinds of social and
general environmental situations …. Personality is… concerned with all the behavior of the individual, both overt and under the skin.”

**Traits**

- For Cattell, trait is a “mental structure”, an inference that is made from observed behavior to account for regularity or consistency in this behavior.

**Category of traits**

**Surface traits vs Source traits**

- Surface traits represents cluster of manifest variables, which are together while source traits are underlying variables that enter into the determination of multiple surface manifestations.
- Source traits are identified with the help of factor analysis only and permits the investigator to estimate the factors that are basis of the surface behavior.
- According to Cattell “Source traits are more important than surface traits”.
- Surface traits are identified by the interaction of source traits and are less stable than factors.
- After the factor analysis, Cattell found out 16 source traits that contribute to the underlying nature of personality. This is identified as 16 PF (Sixteen Personality Factor Questionnaire) and is used in research work of identification of personality of the person.

<table>
<thead>
<tr>
<th>Factor Label</th>
<th>Cattell’s label for the factor</th>
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<tbody>
<tr>
<td>A</td>
<td>Outgoing-Reserved</td>
</tr>
<tr>
<td>B</td>
<td>Intelligence</td>
</tr>
<tr>
<td>C</td>
<td>Stable-Emotional</td>
</tr>
<tr>
<td>E</td>
<td>Dominant- Submissive</td>
</tr>
<tr>
<td>F</td>
<td>Sober- Happy-go-lucky</td>
</tr>
<tr>
<td>G</td>
<td>Conscientious-Expedient</td>
</tr>
<tr>
<td>H</td>
<td>Venturesome-Shy</td>
</tr>
<tr>
<td>I</td>
<td>Tough-minded-Tender-minded</td>
</tr>
<tr>
<td>L</td>
<td>Trusting-Suspicious</td>
</tr>
<tr>
<td>M</td>
<td>Imaginative-Practical</td>
</tr>
<tr>
<td>N</td>
<td>Shrewd-Forthright</td>
</tr>
<tr>
<td>Q</td>
<td>Trait</td>
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<td>-----</td>
<td>------------------------------</td>
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<tr>
<td>O</td>
<td>Apprehensive-Placid</td>
</tr>
<tr>
<td>Q1</td>
<td>Radical-Conservative</td>
</tr>
<tr>
<td>Q2</td>
<td>Self-sufficient-Group-dependent</td>
</tr>
<tr>
<td>Q3</td>
<td>Undisciplined-Controlled</td>
</tr>
<tr>
<td>Q4</td>
<td>Relaxed-Tense</td>
</tr>
</tbody>
</table>

Source: Adapted from The scientific analysis of Personality by R.B. Cattell (1965).

**Constitutional vs Environmental-mold traits**

- Constitutional traits derive from the biological and physiological conditions of the person.
- Environmental-mold traits are determined by the influences of physical and social environment.

**Ability, Temperament and Dynamic Traits**

- Source traits can be further classified in terms of modality (through which they are expressed)
- Ability trait determine the person’s skill in pursuing a desired goal.
- Temperament traits may be concerned largely with constitutional aspects of response such as speed, energy or emotional reactivity.
- Dynamic traits referred to the motivational element of human behavior.

**Sources of data for factor analysis**

- L-data are life records
- Q-data are self-rating questionnaire
- O data are objective test

**The Specification Equation**

- With reference to mathematical equation of personality Cattell finds that prediction of the behavior can be identified with the help of a mathematical equation

\[ R = f(S, P) \]

- It shows that the nature of a person’s specific response (R), meaning what he or she does or think or verbalizes, is some unspecified function (f) of the stimulus situation (S) at a given point in time, and of the existing personality structure (P).
- The specification equation indicates that the person’s specific response to a given situation is a function of all the combined traits relevant to that situation, each trait interacting with situational factors that may affect it.

**Dynamic Traits**

- They are of three kinds: attitudes, ergs and sentiments.
- Attitude are dynamic surface traits which are specification manifestations or combinations of underlying motives. Five attitude components are id, ego strength, superego, physiological component and conflict.
- Ergs include biologically based drives. Cattell has talked about 10 ergs: hunger, sex, gregariousness, parental protectiveness, curiosity, escape (fear), pugnacity, acquisitiveness, self-assertion and narcissistic sex.
- Sentiments includes social objects and they are acquired through learning which serve as “subgoals on the way to the final ergic goals”.

Dynamic Lattice

- They are an interrelated pattern of subsidization.
- In general attitudes are subsidiary to sentiments and sentiments are subsidiary to ergs.
- These various relationships are known as dynamic lattice.
- Self seems to be the most important of one of the sentiments.
- Cattell finds that in any event sentiment focused around the self that plays a crucial role in the integration of personality.

Summary- Cattell’s theory focuses on the personality of the individual with the help of using the method of factor analysis. In his research 16 personality factors emerged which were converted into a tool popularly known as 16 PF. His theory focuses on the various type of traits viz. source and surface traits, constitutional and environmental mold traits. Each of the trait has separate effect on the personality of the individual. There were various methods like L-data, Q data and O data. Specification equation focuses on the relationship between stimulus and response given. Dynamic traits use ergs, sentiments and attitudes in an interrelated manner.

References


