

# Advanced Tests and Measurement

## Personality Testing



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## What We Will Cover

- What 'personality' is.
- Assessment techniques.
- Examples
  - AVA
  - MMPI
  - 16PF
  - NEO-PI-R
  - TAT



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## What is it?

*Pattern of characteristic thoughts, feelings, and behavior that distinguishes one person from another and persists over time and situations.*

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## Type vs. Trait vs. State

**Type** *Personality can be defined by a relatively small number of distinct categories.*

**Trait** *Distinguishable, relatively enduring way in which one behavior varies from one individual to another.*

**State** *Temporary exhibition of some personality characteristic.*

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## General Principle

Behavior = f(Person::Environment)

Example:

General Anxiety vs. Test Anxiety

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## Criteria for Thorough Assessment

1. Be aware of the overall life situation.
2. Sociocultural and ethnic background.
3. Use objective techniques if possible.
4. Gather the right data, not more data.
5. Be conservative in interpretation.
6. Cross check data with multiple assessments.
7. Communicate in a style the person understands.

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## How Developed

Theoretical

Empirical

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## Assessment Techniques



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## Assessment Techniques

1. Behavioral observation.
2. Interview.
3. Self-monitoring/Self Report.
4. Projective techniques.

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## Observation

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## Uncontrolled Observation

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*Collecting and assessing behavior in an unstructured fashion.*

Issues.

- Tends to be anecdotal.
- Reliability.
- Validity.

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## Controlled Observation

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*Individual, or group in a structured situation. Behavior is observed and recorded by trained observers.*

Issues.

- Reliability.
- Reactivity.
- Control.

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## Observation: W<sup>4</sup> and How

- Who is assessed?
- What is measured/counted?
- When is it measured/counted?
  - Frequency
  - Duration
- Where is it measured/counted?
- How is it measured/counted?

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## Example: Assessment Center

- Leaderless group discussion.
- In basket.
- Interview simulation.
- Analysis exercise.

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## Interviews



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## Unstructured Interview

Questions are unplanned. The interviewer can ask questions at his/her discretion.

- **Benefits**
  - Cover a wide range of issues.
  - Flexibility.
- **Issues**
  - Inconsistent coverage
  - Reliability
  - Validity

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## Structured Interview

Questions are pre-planned in advance to elicit responses in a specific job-related area.

- **Benefits.**
  - Consistency.
  - Even coverage.
  - Content validity.
- **Issues.**
  - Limits coverage.

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## Interview Categories

1. Background.
2. Stress.
3. Clinical.

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## Situational Interview

Individual is presented with a hypothetical situation and asked how he/she would handle it.

- Benefits.
  - Common sense.
  - Good validity.
- Issues.
  - Hypothetical.
  - What would the person really do?

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## Behavioral Interview

Individual is asked how she/he actually handled situations in the past.

- Benefits.
  - Real life.
  - Experienced based.
  - Good validity.
- Issues.
  - What if no experience?
  - Time consuming.

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## Issues With Interviews

- Individual Errors
  - Halo error
  - Confirmation bias
- Systematic Errors
  - Leniency
  - Severity
- Validity

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# Self Reports



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## Self Report: Scales

1. Numerical scales
2. Semantic Differential
3. Graphic Rating Scale
4. Behaviorally anchored scale
5. Forced choice

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## Numerical Rating Scale

Witty	1	2	3	4	5	Serious
Dull	1	2	3	4	5	Alert
Stingy	1	2	3	4	5	Generous

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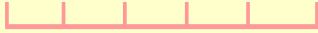
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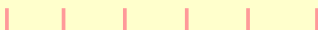
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## Semantic Differential

Witty  Serious

Dull  Alert

Stingy  Generous

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## Typical Graphic Rating Scale

I hate to lose a contest.	Yes ? No
It is harder for me to adapt to	a. Routine b. Constant change.
Which word in each pair appeals to you more?	a. Forgive b. Tolerate
I criticize poor work in my work unit	a. Always b. Often c. Occasionally d. Seldom e. Never

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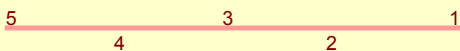
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## Behaviorally Anchored Scale

### Sartorial Splendor

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Bathes regularly,  
shaves, wears  
bow ties and  
clean shirts.

Bathes often,  
wears no tie,  
clean shirts,  
sneakers.

Bathes  
occasionally,  
wears no tie,  
sweats, shower  
shoes, has a beard.

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## Forced Choice

A. I like to feel free to do whatever I want to do.

or

B. I like to be called upon to settle arguments and disputes between others.

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## Self-Report: Issues

- Faking.
- Response Style
  - Social Desirability
  - Acquiescence/Agreement Bias
  - Checking bias
  - Deviant Response
  - Extreme
  - Gambling/Cautiousness

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## Designing Personality Tests



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## Theoretical Approaches



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## Activity Vector Analysis (AVA)

- Theoretical background.
  - Four basic behavioral vectors.
    - V-1 Assertiveness
    - V-2 Sociability
    - V-3 Calmness
    - V-4 Conformity
  - Driven by Activity
  - Self and Role profiles.

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## Empirical Approaches



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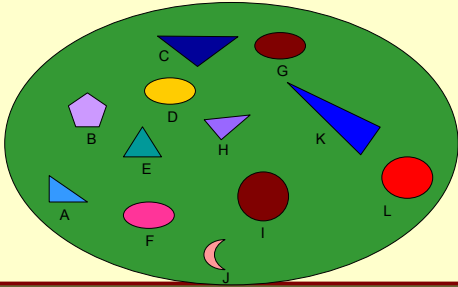
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## Factor Analytic Approach



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## Cattell's 16 PF, Background

- Allport & Odbert identified 18,000 trait names in English.  
Angry, agitated, annoyed, antagonistic, cantankerous, cross, embittered, enraged, furious hateful, hot, infuriated, irate, livid, mad...

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## 16 PF, Development

- Reduced this to 4,500 trait labels.
- Categorized into about 171 basic traits.
- Used students to rate friends.
- Factor analyzed the results and identified 16 factors.
- Labeled these as basic 'Source Traits.'

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## 16PF Design

- 185 items.
- Format
  - Sometimes I laugh too much
    - True
    - ?
    - False
  - When I do a project I
    - Like to work with others.
    - ?
    - Work on it alone.

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## Typical 16PF Scales

- Cool vs. Warm
- Concrete vs. Abstract Thinking
- Submissive vs. Dominant
- Sober vs. Enthusiastic
- Shy vs. Bold
- Conservative vs. Experimenting
- Practical vs. Imaginative
- Trusting vs. Suspicious
- Relaxed vs. Tense

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## Big Five Factor: NEO-PI-R

1. Background
2. Theory
3. Scales

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## 1. Openness to Experience

- A. Fantasy
- B. Aesthetics
- C. Feelings
- D. Actions
- E. Ideas
- F. Values

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## 2. Conscientiousness

- A. Competence
- B. Order
- C. Dutifulness
- D. Achievement
- E. Self-discipline
- F. Deliberation

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## 3. Extroversion

- A. Warmth
- B. Gregariousness
- C. Assertiveness
- D. Activity
- E. Excitement-seeking
- F. Positive emotions

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## 4. Agreeableness

- A. Trust
- B. Straightforwardness
- C. Altruism
- D. Compliance
- E. Modesty
- F. Tender-mindedness

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## 5. Neuroticism

- A. Anxiety
- B. Angry hostility
- C. Depression
- D. Self-consciousness
- E. Impulsiveness
- F. Vulnerability

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## Empirical Criterion Keying

***Development of scoring keys  
in terms of the relationship of  
test items to some external  
criterion.***

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## How Done

1. Identify the trait or condition.
2. Using experts, develop a number of items that would identify the people with the trait or condition.
3. Administer the test items to two groups of people.
  - Those who have the trait.
  - Those who do not have the trait.
4. Choose the items that distinguish between the groups.

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## Extraterrestrial Gender Identification Pilot

Long hair	1 2 3 4	Short hair
Hourglass torso	1 2 3 4	V-shaped torso
TV remotophobic	1 2 3 4	TV remotophilic
Watches movies where members of the species cry.	1 2 3 4	Watches movies where members of the species fight.

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## Minnesota Multiphasic Personality Inventory (MMPI)

1. Background.
  - Developed in 1930s to assist in diagnosing mental health of patients.
  - First published in 1941.
2. Theory.
  - None.

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## MMPI, Typical Items

1. I am a special agent of God.
2. Sometimes I get so sad I want to die.
3. Voices tell me what to do.
4. I frequently have colds that no one can cure.

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## MMPI, Development

- Selected items from texts, psychiatric reports, other personality tests.
- Used 1,500 subjects from 8 clinical groups.
- Selected items when they identified people with specific disorders.
- First edition had 550 items.
- MMPI-2 (1989)
  - Reduced sexist language.
  - Reduced to 394 items.

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## MMPI Scales

- |                           |                         |
|---------------------------|-------------------------|
| 1. Hypochondriasis        | 7. Psychasthenia        |
| 2. Depression             | 8. Schizophrenia        |
| 3. Hysteria               | 9. Hypomania            |
| 4. Psychopathic Deviance  | 10. Social Introversion |
| 5. Masculinity-Femininity | 11. Lying               |
| 6. Paranoia               | 12. Faking              |

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## MMPI, Administration

- Paper and pencil
- Respond to items: True, False, Cannot Say.
- Used for people 16 and older.
- Need at least 6<sup>th</sup> grade education.

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## MMPI, Scoring

- Computer or manual scoring.
- Computer interpretation.
- T-scores with M = 50, S = 10.
- Higher scores indicate more of the characteristic.
- Over 400 scales developed.
  - Drug use.
  - Hostility.
  - Optimisms.
- Encyclopedias of interpretations

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## MMPI-2

- Norms.
  - National representative sample of 2,600 people.
  - Balanced on ethnic affiliation.
- Reliability.
  - $r_{tt}$  range from .58 to .92.
  - Internal consistency .59 to .91.
- Validity.
  - Strong based on empirical criterion keying.

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## Projective Techniques



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## What Are They?

***Technique in which respondents project their unconscious needs and feelings onto ambiguous stimuli.***

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## Theory

- Individuals provide structure to ambiguous stimuli in a manner that is consistent with his/her conscious and unconscious needs, fears, desires, and conflicts.
- Grew out of Freudian theory.
- Represents a rebellion against normative testing.

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## Characteristics

1. Relatively unstructured stimuli and responses.
2. DISGUISED test.
3. Global picture vs. individual traits.
4. Designed for covert, latent, unconscious aspects of personality.
5. Various scoring techniques.

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## Rorschach History

- Developed from a child's game, Blotto.
- Started with 100 inkblots.
- Administered to pathological groups.
- Just enough money to have ten plates printed in 1928.
- Popularized first in the US by Margaret Hertz.
- Became very popular and everyone developed individual scoring schemes.

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## Administration

- Administer all ten cards in order.
- Ask person what he/she sees.
- May repeat a second time to get person to expand on the responses.

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## Scoring

- Number of responses.
- Location.  
Area of the blot used to determine the responses.
- Determinants.  
Characteristics of the blot that influence the interpretation.
- Content.  
What the person actually sees.

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## Issues

- Lack of standardization in
  - Administration.
  - Scoring.
  - Interpretation.
- Exner system.

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## Thematic Apperception Test (TAT)

1. **Background**
  - **Developed by Henry Murray in 1935.**
  - **Unchanged since then.**
2. **Theory**
  - **Not Freudian**
  - **Needs-Press**

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### TAT: Administration

1. Consists of 19 cards, one is blank.
2. Participant is asked to tell a story about the events in the picture.
  - What led up to the scene?
  - What is happening?
  - What will happen next?
3. Typically the number of cards used is limited to 10.

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### TAT: Scoring

- What data?
  - Focus on the stories told.
  - Person identified with.
  - Examinee's response to the cards.
  - Extra test behavior.

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## Interpretation

- Needs.  
Based on Edwards 15 basic Needs.  
(Affiliation, Deference, Achievement, etc.)
- Press  
Environmental forces that help or hinder the satisfaction of the needs.
- TEMA  
Themes that are consistent across the stories.

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## Projective Tests: Issues

- Reliability
- Validity

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# The End

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