

# Psychometric Assessment of Personality Disorder

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# Psychometric Sources

- Observation / Behaviour Ratings
- Self-Report Measures
- Checklists
- Biosignal Measures
- Performance Measures
- Projective Measures

# Observational Assessments

- Interaction Within Groups
- Rater Assessments
- Inter-Rater Consistency

# Checklist Data

- Biographic/Medical/Criminal History
- Offence Behaviours
- Corroborative Evidence
- Collation of information

# Bio-Signal Measures

- Electro Dermal Activity
- Heart Rate Activity
- Cortical Activity
- Penile and Vaginal Plethysmography

# Performance Based Assessments

- Knowledge Tests
- Problem Solving Tasks
- Reaction Time Tasks
- Inspection Time Tasks

# Projective Assessments

- Ink Blot Techniques
- Thematic Apperception Techniques
- Representation Techniques

# Psychometric Models

- Classical Test Models
- Item Response Models
- Idiographic Models

# Discussion Points

- Is the classical model appropriate in the assessment of PD?
- Can we employ classical criteria for evaluating tests of PD?
- Are there alternatives?

# The Classical Model

$$O = T + e$$

$$s^2_O = s^2_T + s^2_e$$

$$E(O) = E(T) + E(e)$$

*O = Observed Test Score*

*T = True Test Score*

*e = Error Term*

# Assumptions of the Classical Model

- *Error variance is random*
- *Error variance is normally distributed with a mean of zero*
- *Error is not correlated with True variance*
- *The Error variance of different measures is not correlated*

# The Application of the Model

$$O_1 = T_1 + e_1$$

$$O_2 = T_2 + e_2$$

$$O_3 = T_3 + e_3$$

$$O_4 = T_4 + e_4$$

$$O_5 = T_5 + e_5$$

$$O_6 = T_6 + e_6$$

$$O_7 = T_7 + e_7$$

$$\Sigma O = \Sigma T + 0$$

# Reliability

- *Proportion of Observed variance that is True variance (Reliability Coefficient)*
- *Correlation of the Observed score with the True score (Reliability Index)*
- *Average correlation of all possible tests (Reliability Index)*

# Reliability Estimation

- Reliability is assessed by consistent behaviour of the test
- Reliability coefficient is  $r^2$  between True and Observed score
- Unreliable tests cannot be valid

# Classical Limitations

- Assumptions of Unsystematic Error
- Reliance upon the Test Score
- SEM a function of Test not Person
- Reliance on Appropriate Norms
- Orientation towards Self-Report

# The Problem of Profile Equivalence

Person	Symptom Profile	Score
A	1 1 1 1 0 0 0 0	4
B	0 0 0 0 1 1 1 1	4
C	1 0 1 0 1 0 1 0	4
D	0 1 0 1 0 1 0 1	4

# SOLUTIONS

- The adoption of cumulative item response models.
- The development of structured idiographic approaches.
- The eschewal of single source decision making.

# Technical Advances Towards Solutions?

- Statistical Modelling of Test Behaviour
- Computerised Assessment
- Prediction/Classification Modelling
- Idiographic Technology