

# Idiographic Models for Assessing Change

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# Aims of the Paper

- **To highlight the need for an idiographic orientation in PD Assessment**
- **To introduce an idiographic measurement model that facilitates the evaluation of change.**

# Nomothetic - Idiographic

- **Scientific Ideal is nomothetic**
- **Unique Individual variance as 'Error'**
- **Individual Differences are viewed as quantitative distinctions**
- **Psychological Laws need only be valid for the average individual.**
- **Therapeutic Ideal is Idiographic**
- **Unique Individual variance as the focus**
- **Individual Differences are viewed as qualitative distinctions**
- **Psychological Laws must be valid for each and every individual.**

# The Experimental Paradigm

*“The knowledge which guides us in increasing the precision of an experiment is not a knowledge of the individual peculiarities of particular experimental units... but a knowledge that there is less variation within certain aggregates of these than there is among different individuals belonging to different aggregates.”*

*R.A. Fisher The Design of Experiments (1935)*

# ASPD Profiles

	<b>Case 1</b>	<b>Case 2</b>
<b>Age</b>	<b>18</b>	<b>54</b>
<b>Deceitful</b>		✓
<b>Impulsive</b>		✓
<b>Reckless</b>		✓
<b>Aggressive</b>	✓	✓
<b>Irresponsible</b>	✓	
<b>Lack of Remorse</b>	✓	
<b>Non-conforming</b>	✓	

# Idiographic Methods

- **Diary Analysis**
  - ◆ **Gordon Allport**
- **Repertory Grids**
  - ◆ **George Kelly / Patrick Slater**
- **Multiple Card Sorting**
  - ◆ **David Canter / Louis Guttman**
- **Hypothesis Agglutination Analysis**
  - ◆ **Heinrich Wottawa**

# Mathematical Background

- **Eckart and Young (1936)**
- **Guttman (1941)**
- **Lingoes and Schonemann (1974)**
- **Borg and Lingoes (1976)**

# Basic Model

$$T = O_i + E$$

**T = True Structure**

**O<sub>i</sub> = Observed Structure at time i.**

**E = Error**

$$TR_i = O_i + E$$

**R<sub>i</sub> = Rotation Matrix for T into O<sub>i</sub>.**

# Reliability Estimation

Lingoes-Schonemann 'S' to assess the fit of  
two matrices  
(T and O)

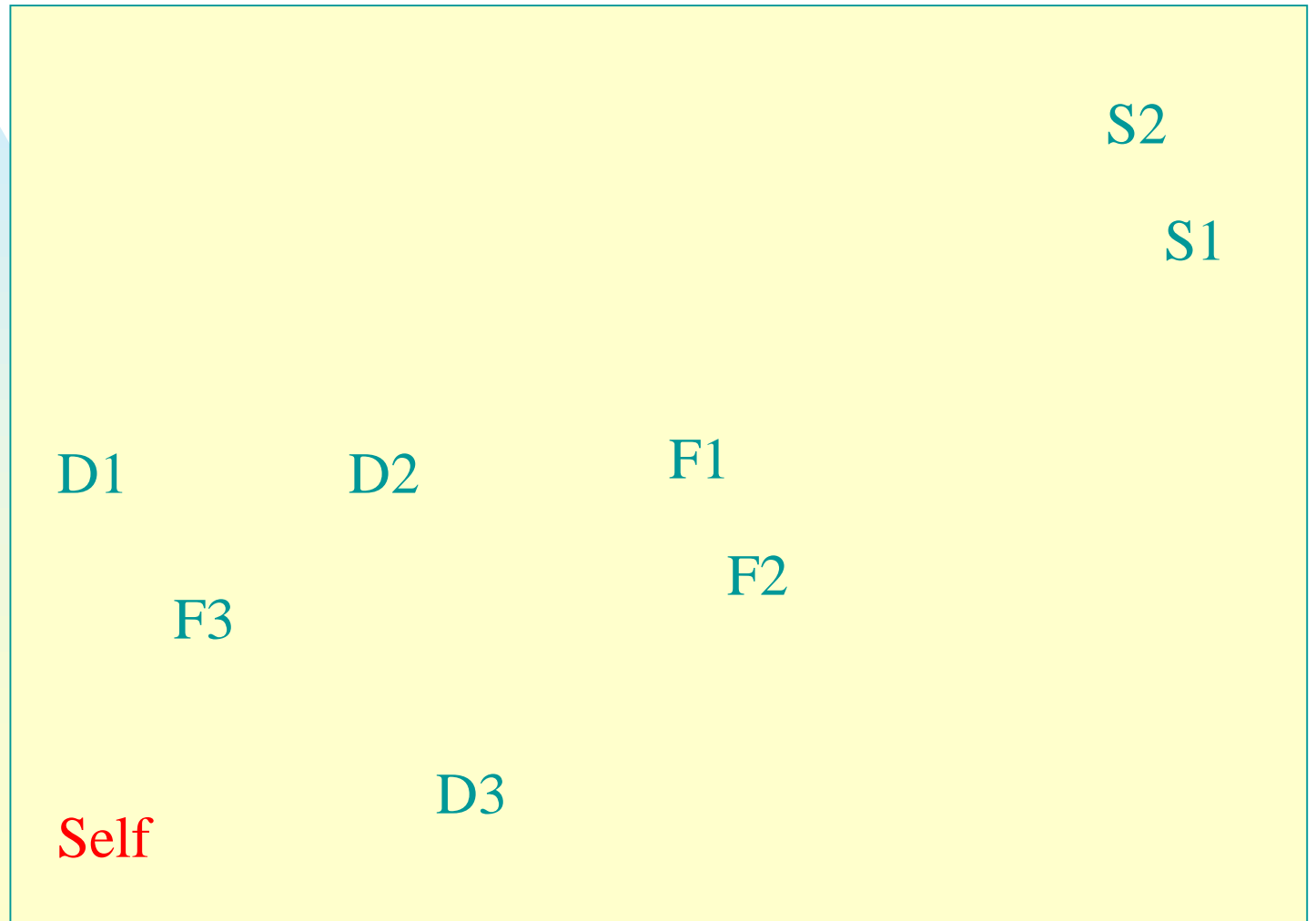
- $S^2 = 1 - \sigma^2_T / \sigma^2_O$
- $r^2(T, O) = 1 - S^2$
- $1 - S^2 = \text{Reliability Coefficient}$

Leads to a Least Squares Iterative strategy for minimising S

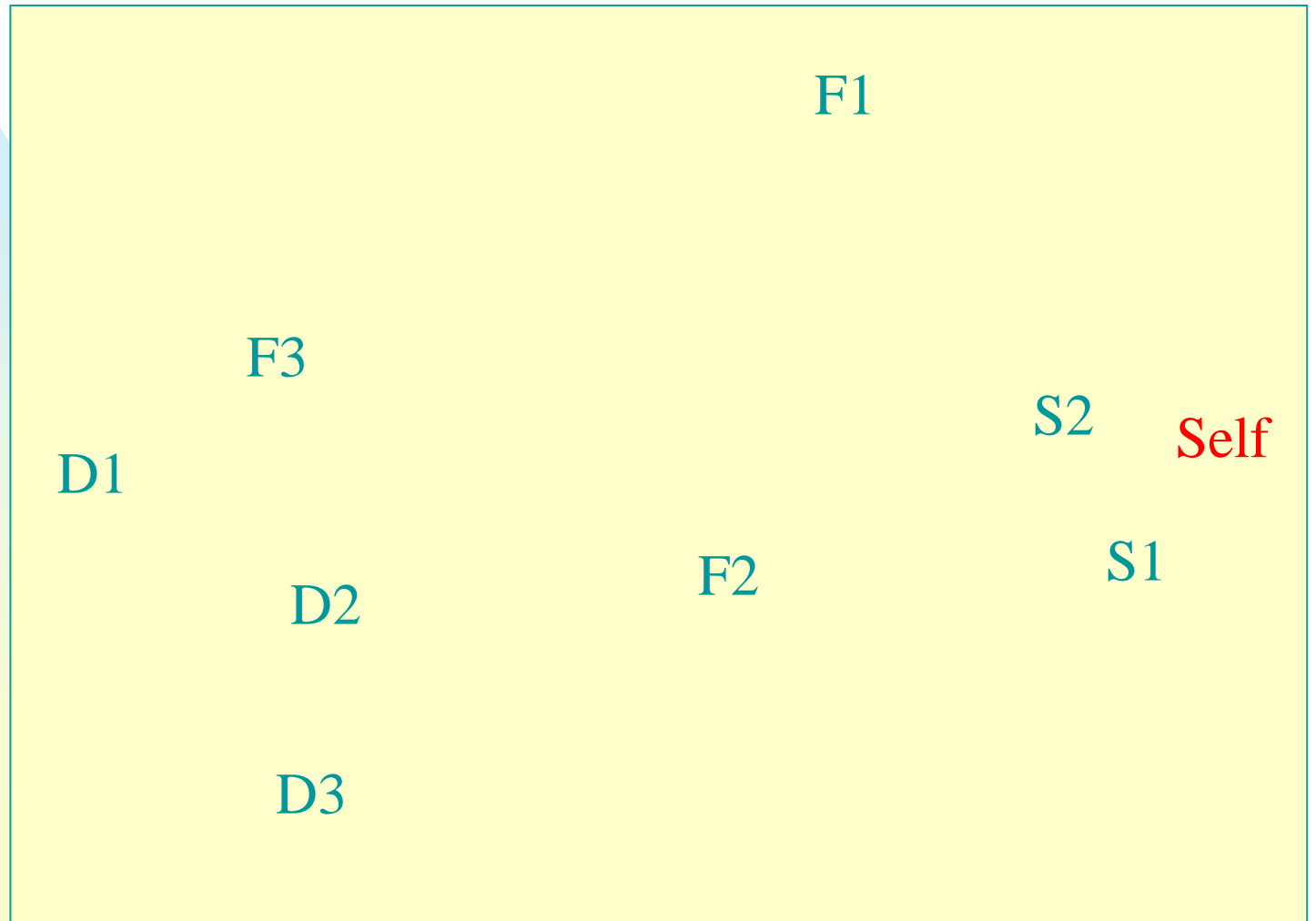
# PINDIS Model Fitting (Reliability Analysis)

	Basic	Dimension		Vector	
		Common	Idiosyncratic	Common	Idiosyncratic
Time 1	0.74	<b>0.81</b>	0.88	0.89	0.90
Time 2	0.85	<b>0.86</b>	0.87	0.88	0.91
Time 3	0.75	<b>0.87</b>	0.93	0.93	0.96
Reliability	0.78	<b>0.88</b>	0.89	0.90	0.92

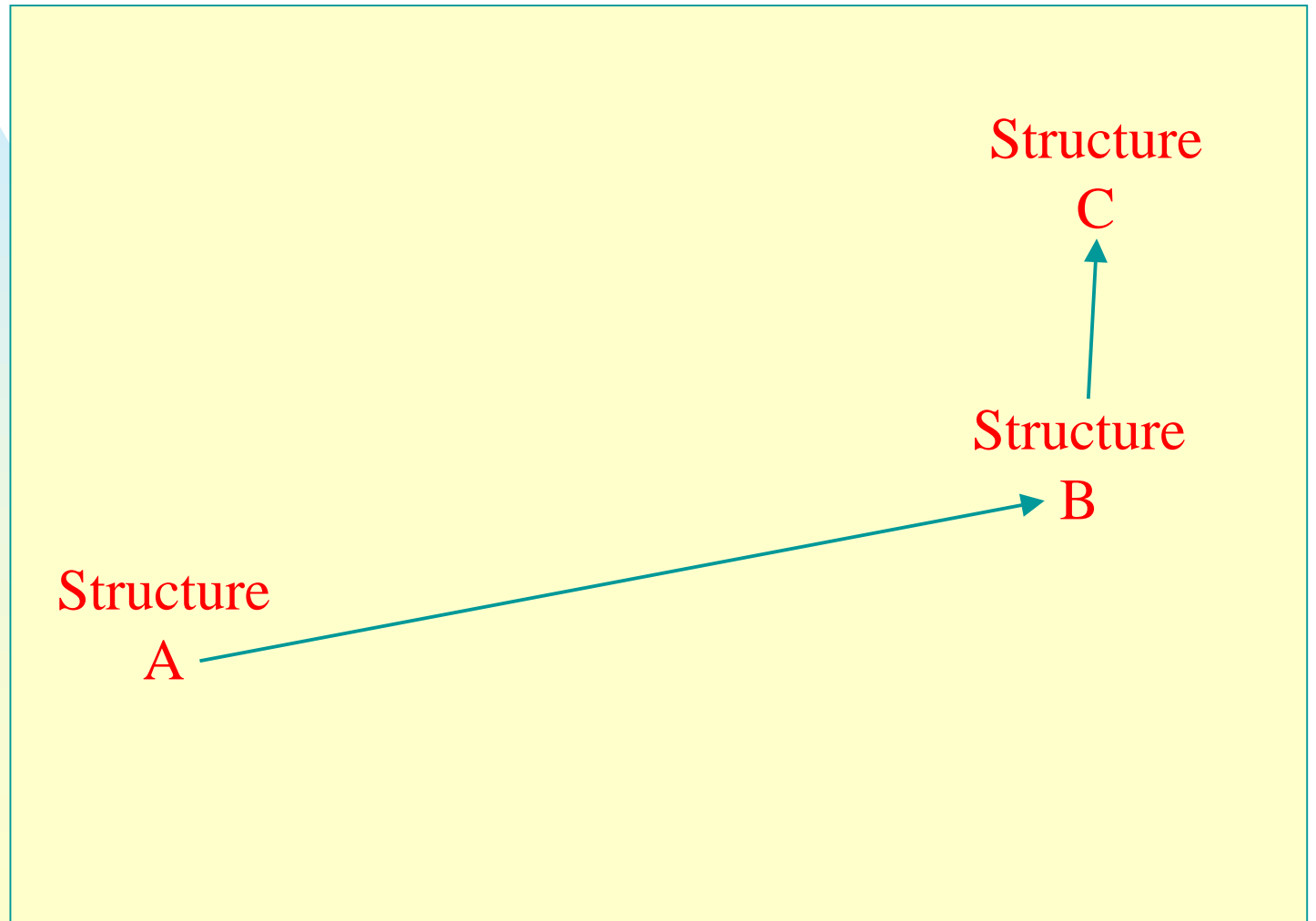
# MCS: Time 1



# MCS: Time 3



# MCS: Movement



# A Plausible Strategy

**Stage 1: Baseline. Prior to Intervention. Identify T.**

**Stage 2: Assessment at points throughout the intervention period.**

**Stage 3: Fit each  $O_i$  to T. Examine structural movement.**