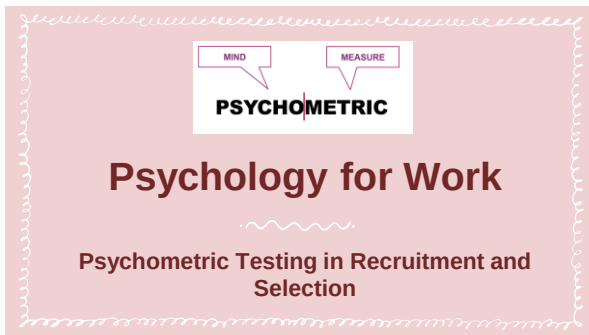
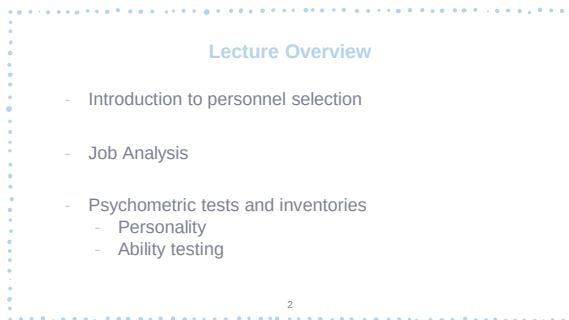




A presentation slide with a pink background and a decorative border. At the top, there is a graphic with two speech bubbles: the left one says 'MIND' and the right one says 'MEASURE', both pointing to the word 'PSYCHOMETRIC' in bold black capital letters. Below this, the title 'Psychology for Work' is written in a large, dark red serif font. Underneath the title is a small wavy line separator, followed by the subtitle 'Psychometric Testing in Recruitment and Selection' in a smaller, dark red sans-serif font.

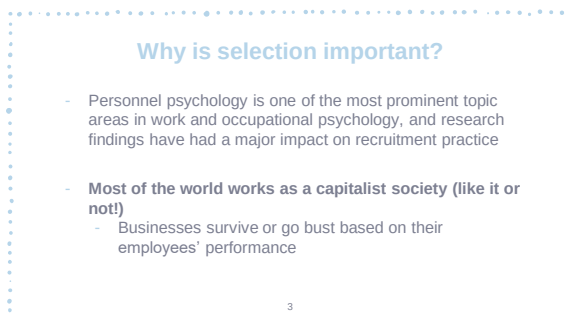


A slide with a light blue dotted border. The title 'Lecture Overview' is centered at the top in a blue sans-serif font. Below the title is a bulleted list of topics. At the bottom center, the number '2' is displayed.

Lecture Overview

- Introduction to personnel selection
- Job Analysis
- Psychometric tests and inventories
 - Personality
 - Ability testing

2



A slide with a light blue dotted border. The title 'Why is selection important?' is centered at the top in a blue sans-serif font. Below the title is a bulleted list of points. At the bottom center, the number '3' is displayed.

Why is selection important?

- Personnel psychology is one of the most prominent topic areas in work and occupational psychology, and research findings have had a major impact on recruitment practice
- **Most of the world works as a capitalist society (like it or not!)**
 - Businesses survive or go bust based on their employees' performance

3

Why is selection important?

- If the best is twice as good as the worst, you want the best!
 - But, how do you know who that is?
- We can't 'clone' our best workers...
 - ... Or can we?

4

- This is what the selection process attempts to do
 - Examine the data to find the 'ideal' person for the job
 - And then see if potential employees meet that ideal
 - Or choose the person who comes closest to it...

5

- Employment legislation and guidelines requires valid and fair selection procedures
- This is the defining role of Occupational Psychologist
 - The scientist-practitioner
 - Applying scientific principles to the procedure

6

The 'Selection Headache'

- Selection is difficult!
 - Predicting future performance over a period of years, and even decades, from limited information
 - Time and cost constraints
 - Ethics
 - Legislation
 - Impression management

The 'Selection Headache'

- Occupational Psychologists aim to apply scientific principles to this procedure
- Predict which of several candidates is likely to perform the job most effectively is a forecasting problem...
- But the guiding principle is:

Past performance is the best predictor of future performance

8

How should decisions be made?

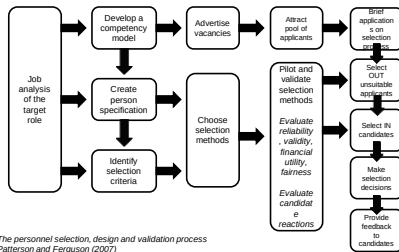
- To make a selection scientifically we need a plan!
 1. **Criterion** :- definition of good performance
 2. **Predictor** :- anything that relates to the criterion
- Whilst there may be lots of predictors, we need predictors that will be
 1. Useful
 2. Cost-efficient

9

Design and Validation

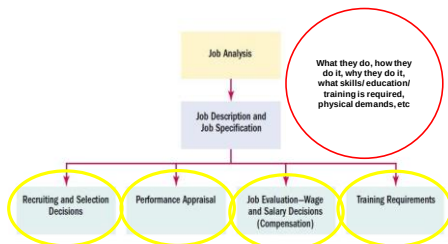
Personnel selection, design and validation
Job Analysis

Design and Validation in Selection



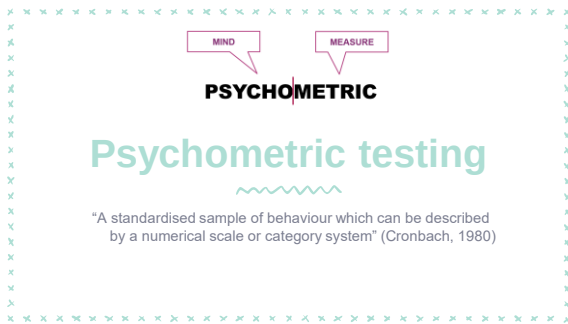
The personnel selection, design and validation process
Patterson and Ferguson (2007)

Uses of Job Analysis Information



Design and Validation in Selection

- A thorough job analysis is the foundation of an effective selection process and is used to guide choice of selection methods
- Outputs should:
 - Detail tasks and responsibilities of target job
 - Provide information about behavioural characteristics required of the job holder



Individual Differences

- Most branches of psychology are interested in human behaviour under different conditions
- The assumption made is that all people are pretty much the same
- BUT! This assumption is wrong...
 - Some children develop faster than others
 - Some adults are less conscientious than others
 - Some people are more intelligent than others

Psychometric Testing

- Psychometrics is the branch of psychology concerned with the scientific measurement of individual differences
- Accurate measurement of I.D's is important because theories can be tested if and only if the constructs involved can be measured

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Psychometric Testing

- The field of psychometrics and behavioural statistics has been expanding with unprecedented speed
- These rapid and technically rigorous developments have created a need for a new breed of quantitative scientist who can work at the interface between mathematical stats and applied research

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BPS Qualifications in Test Use

- **Occupational, educational and forensic**
- **Benefits?**
 - Nationally recognised qualification
 - Access to psychological/psychometric tests that would otherwise be restricted

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Occupational Testing

Level 1: Assistant test user

- Qualifies the delegate to administer psychometric tests, teaches the basics of ethical test use and computer-based testing

Level 2: Test User (Ability)

Level 2: Test User (Personality)

- Qualifies delegate to score, interpret and provide feedback on tests
- Delegate will get trained in specific tests (e.g., NEO PI-R)

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Psychometric Tests

- Administered in a standardised way
- Scored and interpreted in a standardised way
- Reliable – meaning they are accurate
- Valid – meaning they are appropriate for purpose
- Rigorously developed according to best practice standards

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Types of Tests and Inventories

1. Cognitive Ability Tests

Types of Tests and Inventories

Cognitive Ability (intelligence)

- Increasing focus on cognitive testing; widely used, widely researched, open to preparation, feared!
- Can cover tests of ability, aptitude and attainment
- Test = tend to be right or wrong

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Types of Tests and Inventories

Cognitive Ability (intelligence)

- E.g., test questions
1. What number is missing in this series?
3 – 8 – 14 – 21 – 29 – (?)
 2. SHOVEL is to DITCHDIGGER as SCALPEL is to:
(a) knife (b) sharp (c) butcher (d) surgeon (e) cut

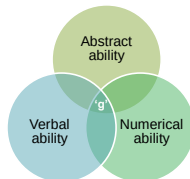
23

Types of Tests and Inventories

Cognitive Ability (intelligence)

Ability tests

- Assess what a person is capable of doing
- May assess general or specific abilities



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Cognitive Ability (Intelligence)



- **Cognitive ability** – Intelligence
 - Multi- or single- dimension?
- **Single dimension:** g score – general intelligence
 - Successful in predicting performance on many jobs
- **Multiple dimension:** different aspects of intelligence unrelated to one another
 - Math scores may predict programming skills better than language scores do

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Cognitive Ability (Intelligence)



- What cognitive abilities would best predict success as a lawyer?
- Air traffic controller?

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Ones et al. (2005): a meta-analysis of meta-analyses



- Evidence for the validity of cognitive ability tests in predicting job performance is overwhelming
- All jobs require some cognitive ability to learn the job and perform effectively
- Ones and Viswesvaran (2003):
 - High-complexity jobs 0.58
 - Low-complexity jobs 0.23

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Cognitive Ability (Intelligence)



- Schmidt and Hunter (1998) – four reasons for the superiority of GMA over other methods

- 1) Versatility, high validity and lowest application costs
- 2) Strongest research evidence
- 3) Best predictor of job-related learning - .56
- 4) Strongest theoretical foundation

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Types of Tests and Inventories

Cognitive Ability (intelligence)

Pros

- Highly reliable
 - Validity also rises with increasing complexity of the job
- Combinations of CA tests have higher validities than individual tests alone
- Can be administered in group settings
- Low cost

Cons

- ✖ Differences in scores for minority groups
 - ✖ Non-minorities typically score one SD above minorities
- ✖ Gender differences may need to be considered
 - ✖ E.g., scores on mathematics
- ✖ Candidates reactions to them can be negative

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Types of Tests and Inventories

2. Personality Inventories

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Task

1. Think of ONE word that describes you
2. Think of ONE word that describes the person sitting next to you

Types of Tests and Inventories

Personality Inventories

- Self-report measures
- Inventories = no right or wrong answers...?
- Assess 'typical' behaviours
- Distinction required between state and trait

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Personality Inventories

- Assess personality traits believed to be necessary for job performance
- Examples:
 - Five factor model – Extraversion, Neuroticism, Agreeableness, Conscientiousness, Openness to experience
 - MBTI – Myers-Briggs Type Indicator
 - NEO-PI-R/NEO-PI-3
- Particularly useful if tailored specifically for the job in question

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Personality Inventories



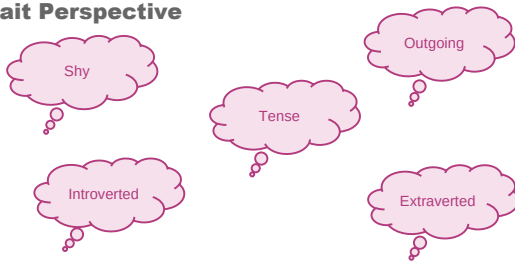
Trait Perspective

Goals of Trait Theorists:

- Describe the basic classes of behaviour that define personality
- Devise ways of measuring individual differences in personality traits
- Use these measures to understand and predict behaviour

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Trait Perspective





Personality and Job Performance



Is personality a useful construct for understanding performance at work??

Task performance?
Leadership?
Team working skills?
Resilience to stress?

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Personality and Job Performance



Personality traits are useful if they:

- Describe consistent differences between individuals
- Predict work-related behaviour independently from cognitive ability

Does 'typical behaviour' at work matter more than 'maximal performance'?

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Recap: The Big Five

Costa and McCrae (1992)



Personality: Recap



The Five Factor Model (Costa & McCrae, 1992)

- Openness to experience
- Conscientiousness
- Extraversion
- Agreeableness
- Neuroticism

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Big Five Inventory



- 44 items
- Measures all five factors of personality

Your task:

- Fill out the BFI-10 and score yourselves on this personality measure
- Be aware that this does involve reverse scoring

	Low Scorers	High Scorers
Extraversion	Loner; Quiet; Passive; Reserved	Joins in; Talkative; Active; Affectionate
Agreeableness	Suspicious; Critical; Ruthless; Irritable	Trusting; Lenient; Soft-hearted; Good-natured
Conscientiousness	Negligent; Lazy; Disorganised; Late	Conscientious; Hard-working; Well-organised; Punctual
Neuroticism	Calm; Even-tempered; Comfortable; Unemotional	Worried; Temperamental; Self-conscious; Emotional
Openness to experience	Down-to-earth; Uncreative; Conventional; Uncurious	Imaginative; Creative; Original; Curious



The Five Factor Model and Job Performance: Research Findings



- Barrick, Mount and Judge (2001):
 - Conscientiousness (in particular) and neuroticism are the best personality predictors of job performance across all occupations
 - Extraversion and agreeableness are important in jobs requiring a high degree of interpersonal work
 - Less consistent evidence for Openness to experience



The Five Factor Model and Job Performance: Research Findings



- Salgado et al. (2003):
 - Conscientiousness is a valid predictor of performance across most jobs and organisational settings; criterion-related validity 0.23

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The Five Factor Model and Job Performance: Research Findings



- Ones et al. (2007):
 - Unlike ability testing, the predictive validity of personality measures for 'overall job performance' is not seen across all occupational settings and areas
 - E.g., for managerial roles, the 'achievement' and 'dependability' facets of conscientiousness predict job performance

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Conscientiousness



- The most important personality predictor of performance at work

Assesses individual differences in:

- Competence
- Order
- Dutifulness
- Achievement striving
- Self discipline
- Deliberation

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Conscientiousness



Conscientious people set ambitious goals and work hard to meet them (Barrick, Mount & Strauss, 1993)

A general marker (like GMA?) of people's typical performance or work ethic?

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Neuroticism



Inconsistent findings but generally negatively associated with performance at work

Neuroticism linked to job and training performance particularly under stressful conditions

Matthew (1999) - better performance in air traffic controllers amongst individuals high in N

Marker of individual differences in stress-reactivity?

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Extraversion



Inconsistent evidence

Positive associations between Extraversion and sales/managerial performance

Interaction between Extraversion and Neuroticism may be a better predictor of performance at work than one alone

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Agreeableness



Predicts performance in:

- Customer service type jobs (Hurtz & Donovan, 2000)
- Team-work based jobs (Barrick et al., 1998)

But generally *negatively* associated with career success/income:
Correlations of -.11 to -.32

- ❖ Interaction with conscientiousness!
High C + low A = conflict with others!

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Openness to Experience



Inconsistent in predicting work performance

May reflect lack of clarity of what the trait consists of:

- Driven by fantasy?
- Artistic?
- Liberal?
- Need for cognition?

Relevant predictor in creative industries

Predicts training success generally

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Critically evaluating the Big Five



- Some personality dimensions tend to be more stable over the lifespan than others
- Introversion-Extraversion, self-esteem, emotionality, and activity level remain relatively stable
- Neuroticism, openness and extraversion tend to decline with age
- Agreeableness and conscientiousness tend to increase with age

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Critically evaluating the Big Five



But, is it better to explore smaller facets of the 'big five' in order to predict performance at work?

- Each contains six sub-facets that allow for sharper predictions

Does 'conscientiousness' tap into general mental ability?

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The Myers-Briggs Type Indicator



MBTI

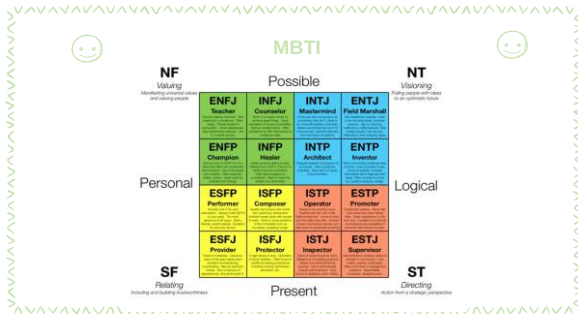


MBTI



- Very different from the Big Five; uses Jung's theory of psychological types
- Uses dichotomies rather than positions on a scale
- Shown to correlate with the Big Five
- However, there are qualitative differences in what the MBTI measures because it is based on a different underlying theory...

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NEO PI-R

Neuroticism

Anxiety
Angry hostility
Depression
Self-consciousness
Impulsiveness
Vulnerability

Extraversion

Warmth
Gregariousness
Assertiveness
Activity
Excitement seeking
Positive emotion

Openness to experience

Fantasy
Aesthetics
Feelings
Actions
Ideas
Values

Conscientiousness

Competence
Order
Dutifulness
Achievement striving
Self discipline
Deliberation

Agreeableness

Trust
Straightforwardness
Altruism
Compliance
Modesty
Tender mindedness

Issues in Personality Assessment



1. 'Faking'

- The tendency for people to present a favourable image of themselves on questionnaires
- Social desirability response bias affects the validity of a questionnaire
- Job applicants have been found to score more highly on desired personality traits
 - Motivated to 'fake good'? (Barrick & Mount, 1996)

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1. 'Faking'

- Easy to identify the 'desirable response' on some personality tests
- May influence the ordering of candidates re: hiring decisions!
- Is there a solution?
- ◆ Ipsative tests:
 - 'forced choice' scale - respondents compare two or more equally desirable options and pick the one that is most preferred

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2. State or Trait?

E.g., Laziness

State or trait?

- State = something that changes depending upon an individual's mood, situation, etc
- Trait = general trait of the individual across all settings

61

Individual Differences Across Occupations

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Lawyer vs Lecturer

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## Lawyer- Extraversion

**Richard (1993);**

- 57% (of 3014) lawyers were more introverted than extraverted
- Stark contrast to the finding that, in the general population, 75% of people are more extraverted

**Richard (2002);**

- Lawyers are more autonomous than 89% of the general population – they prefer to work alone
- Lawyers judged as 'excellent' were less sociable than 87.5% of the people in a general population

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### Lawyer- Neuroticism

Foster et al. (2010);

- Results suggest that the average lawyer may score more highly on the neuroticism domain than 56% of the general population
- Lawyers have a tendency towards becoming tense and overly critical – more than 68% of the general population
- Relatively low degree of adjustment; relatively high degree of excitability.

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### Lawyer- Summary

According to research:

1. The typical lawyer is inclined towards introversion and is likely to prefer working by him/herself
2. The introverted tendency may be exaggerated among highly successful lawyers
3. Lawyers are low in extraversion when considered as a group

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### Lecturer – Student preferences

Chamorro-Premuzic et al. (2008);

- Students prefer lecturers who are emotionally stable (low in N) and high in C
- Students prefer lecturers who are similar to themselves in all personality traits except N, and particularly for O and C
- Generally, students want lecturers who are stable, conscientious, extraverted, agreeable and open

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### Lecturer – Conscientiousness

#### Conscientiousness

- On the plus side, high C is associated with academic and occupational achievement; on the negative side, it may lead to annoying fastidiousness, compulsive neatness and workaholic behaviour

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