



Personnel Selection

Stacey Coleman

Session Outline

PERSONNEL SELECTION



**Selection,
Recruitment,
Prediction of
Performance**

PSYCHOMETRIC TESTING



**Cognitive Ability
Tests
Personality
Assessment**

PSYCHOMETRIC PROPERTIES



**Reliability,
Validity, Norm
Groups and T-
scores**

ISSUES



**Issues with
psychometric
testing**



What is Personnel Selection?



Personnel Psychology is one of the most prominent topic areas in Work and Occupational Psychology

Research findings have a major impact on recruitment practices

The world of work is a capitalist society (whether we like it or not!)

The Selection Process



If the best is twice as good as the worst, we want the best.

But how do we know who that is?



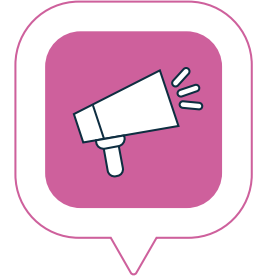
The selection process attempts to examine data to identify an 'ideal' person for a job / role



We then need to see if potential employees (candidates who apply) meet that ideal...

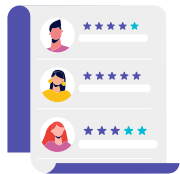


Or we choose the person who comes closest to the ideal



This often turns into a **'Selection Headache'**

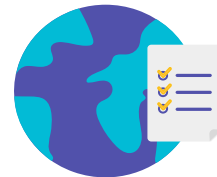
The 'Selection Headache'



Selection is
difficult!



Predicting future
performance over
many years from
limited
information



Time and cost
constraints



Ethics



Legislation



Impression
management



The 'Selection Headache'



Occupational Psychologists aim to apply scientific procedures to the process of selection

Predicting which of many candidates is likely to perform the job most effectively is a forecasting problem

Guiding principle:

Past performance is the best predictor of future performance

How are decisions made?

Making selections scientifically requires two main things:

There are often lots of predictors, but predictors need to be chosen that are:

1. Useful
2. Cost-efficient

PREDICTOR

*Anything that
relates to the
criterion...*

CRITERION

*Definition of
good
performance*

Criterion-Related Validity



Criterion-related validity is important!

The strength of the relationship between a predictor (e.g., psychological test score) and a criterion (e.g., subsequent working behaviour)

Good CRV is seen when candidates who obtain **high predictor scores** **also obtain high criterion scores**, AND candidates who obtain **low scores on a predictor also obtain low criterion scores**

**And this is
important in
selection
because.....**

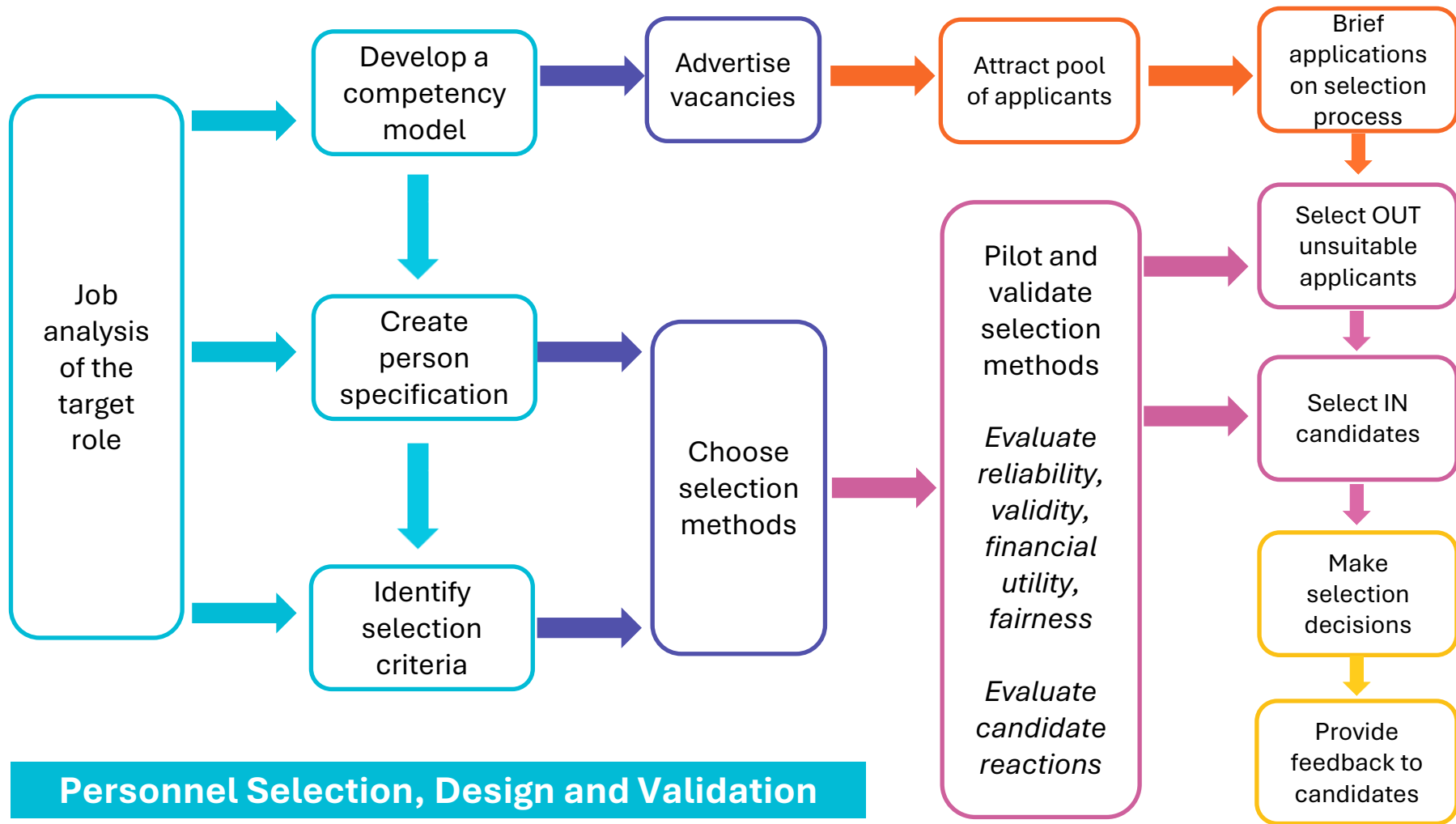


We can use predictor scores from **future candidates** to predict their level of performance!

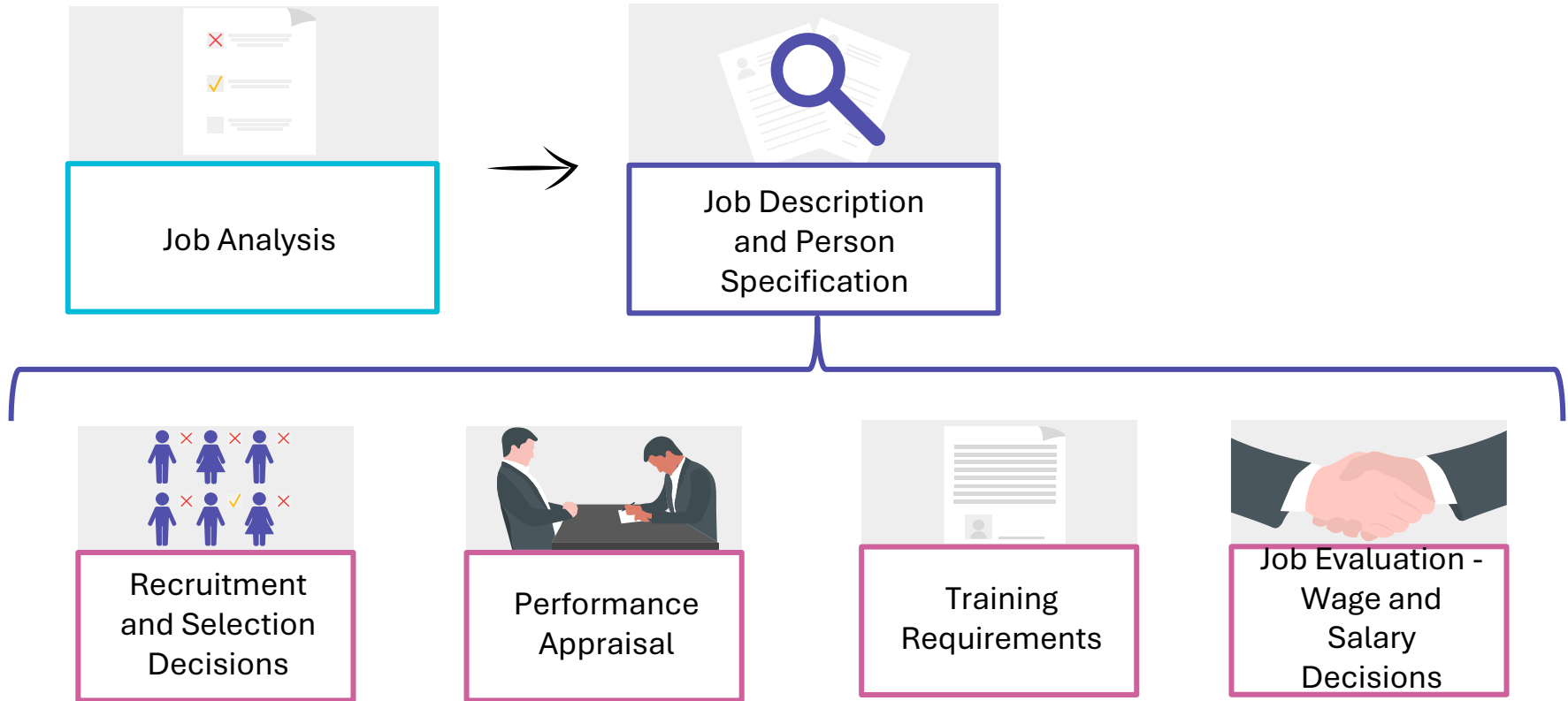


Ideally... but we are still working on the assumption that **past performance is the best predictor of future performance**





Uses of Job Analysis Information



Design and Validation in Selection:

Common Selection Errors

False Negative

Rejecting a candidate who would have been successful in the role

False Positive

Accepting a candidate who fails on the job (more costly)

Organisations use structured design and validation techniques, along with person and job descriptions, to:

- Maximise correct hires and correct rejections and
- Minimise misses and false positives

Possible unfair test

High cost of training,
turnover

Methods of Personnel Selection



Personnel Selection Methods



Interviews



References



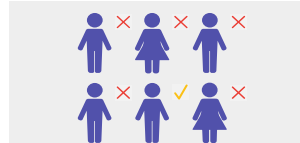
Graphology



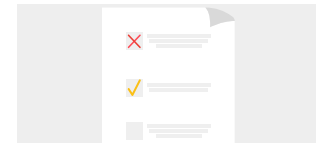
Biodata



Work-sample
tests



Assessments
centres



Psychometric
assessment

Psychometric Testing

MIND

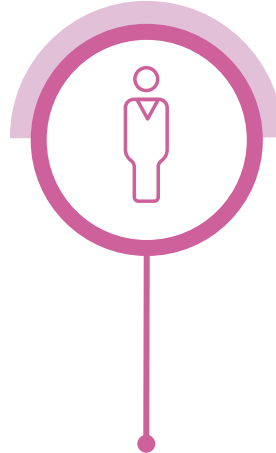
MEASURE

PSYCHOMETRIC

Individual Differences



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



BPS Qualifications in Test use:

Occupational
Educational
Forensic

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)

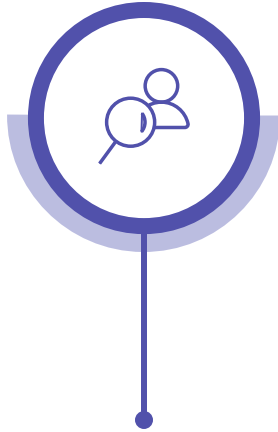
Level 2: Test User (Personality)

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

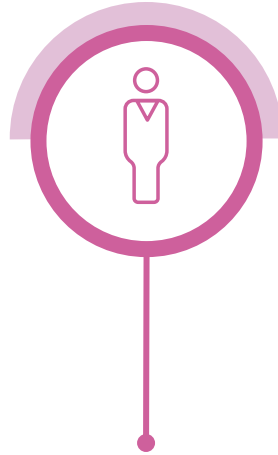
Psychometric Tests



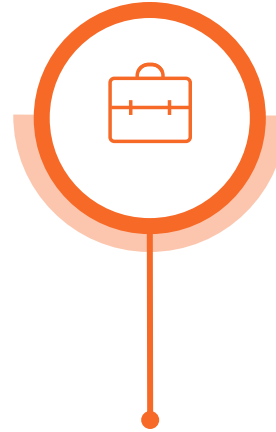
Standardised
administration



Reliable



Valid



Scored and
interpreted in a
standardised way



Rigourously
developed
according to best
practice standards

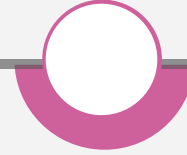


Psychometric Tests and Inventories



COGNITIVE ABILITY TESTS

Can cover tests of
**ability, aptitude and
attainment**



PERSONALITY INVENTORIES

Assessment of
'typical' behaviours

Trait v State

A relatively enduring characteristic

TRAIT

STATE

A temporary psychological condition

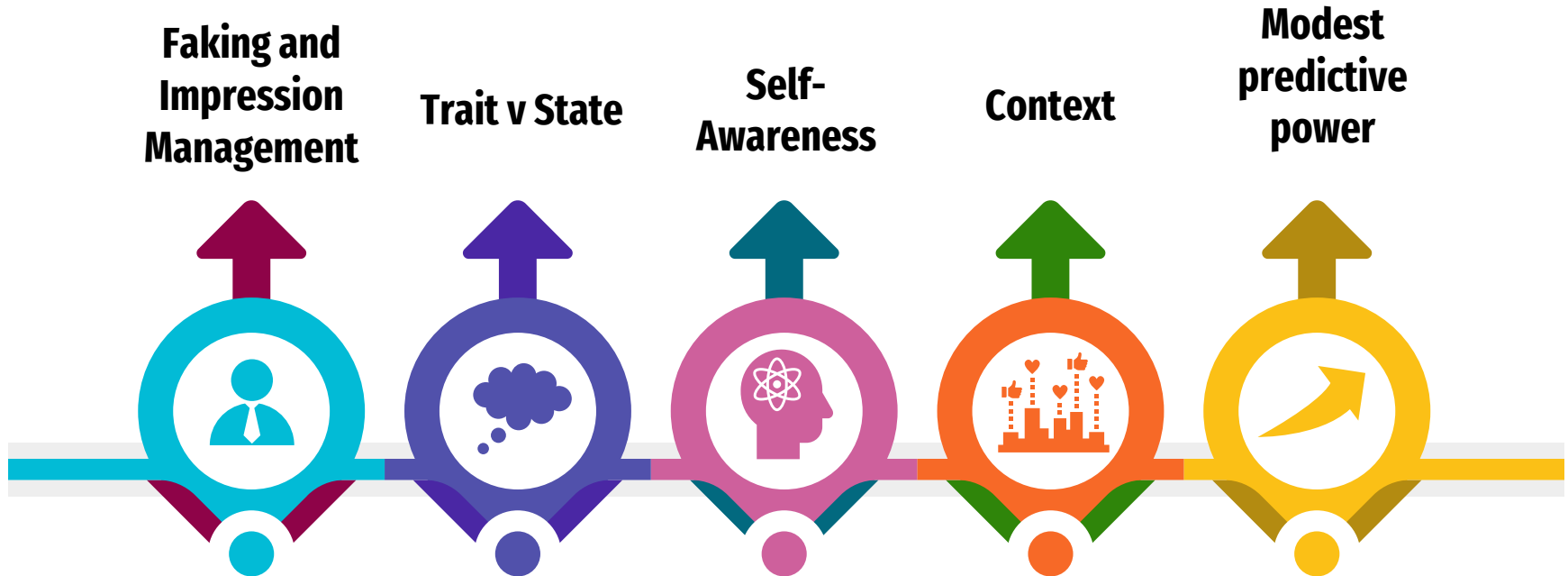
E.g.,
Conscientiousness
Emotional stability
Extraversion

TRAITS are assumed to remain relatively stable across time and situations

E.g.,
Feeling anxious before an interview
Being tired after poor sleep

STATES fluctuate and may influence assessment results

Personality Inventories: What could go wrong?





Should we use personality tests?

Arguments for

- ✓ Relatively inexpensive
- ✓ Easy to administer online
- ✓ Useful for understanding work preferences
- ✓ Some traits predict workplace behaviours
- ✓ Can complement other selection methods



Arguments against

- ✗ Susceptible to faking
- ✗ Influenced by social desirability
- ✗ Self-report may be inaccurate
- ✗ Context can affect responses
- ✗ Generally weaker predictor of performance than cognitive ability testing

**Examples of
personnel selection
methods**

Situational Judgement Test

E-tray exercise

Logical reasoning test

Verbal test

Numerical reasoning test

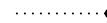
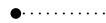
Information on assessment
centres

Selection Methods

Selection Method	Evidence for CRV	Applicant Reactions	Extent of Use
Structured interviews	High	Moderate to positive	High
Situational Judgement Tests	High	Moderate to positive	Moderate
Biodata	Can be high	Moderate	Moderate
Job Stimulations	High	Positive	Low
Assessments Centres	Can be high	Positive	Moderate
Graphology	Low	Negative to moderate	Low
References	Low	Positive	High
Cognitive Ability Tests	High	Negative to moderate	Moderate
Personality Assessment	Moderate	Negative to moderate	Moderate

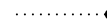
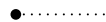
Contemporary Developments in Personnel Selection

CV review



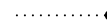
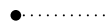
Applicant Tracking
System (ATS) Screening

Face-to-face interview



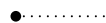
Video interview

Psychometric test



Online adaptive testing

Human decision-making



AI-assisted decision-
making



**How would you feel if
an AI system was
involved in deciding
whether you got an
interview for a job or
not?**



T-scores

Raw and T-scores in Personality Assessment



When we assess personality, the best practice is to compare results to a **norm group**. This allows us to determine how extraverted someone is **in comparison to other people** who are like them (according to a norm group of females, males, combined gender, etc)



To be able to make this comparison, the results need to be presented in a meaningful way (psychometrics is often littered with technicalities and complex terminology, so we want to make it simpler!). A t-score is a **standardised way** that scores can be presented to make them easier to understand.

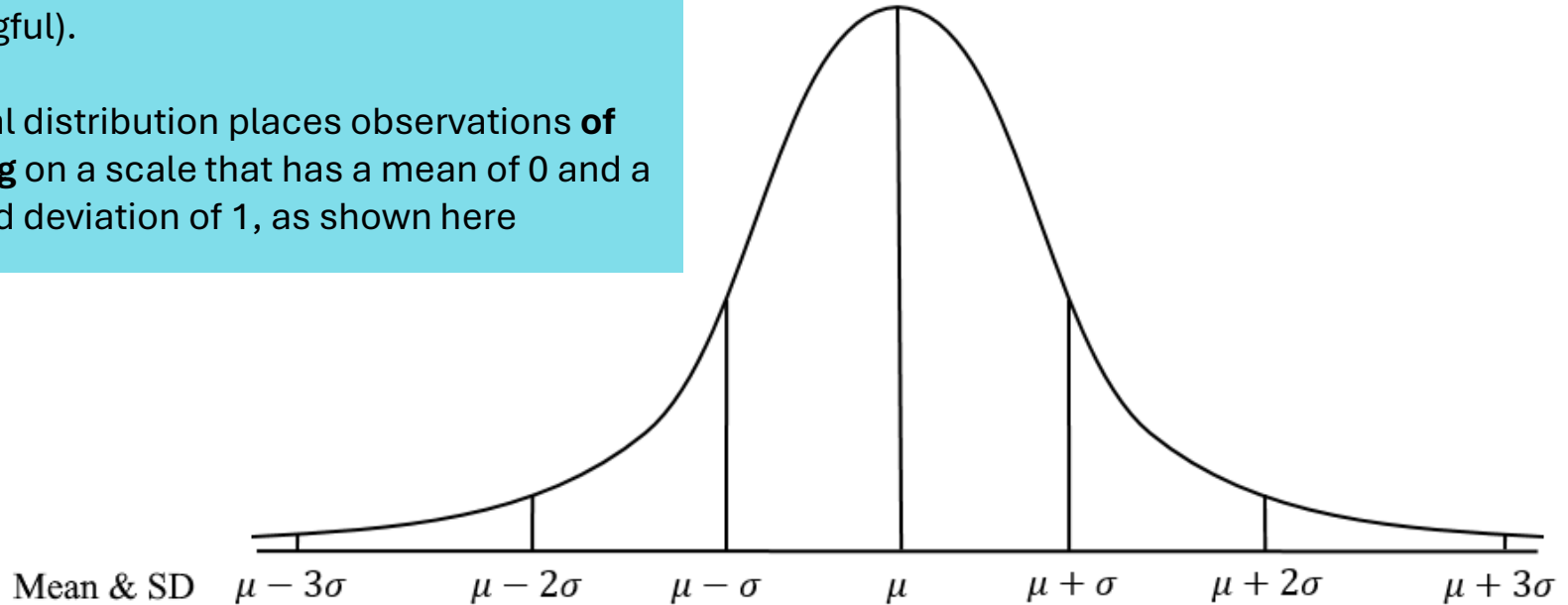


With the NEO assessments, for example, you would receive a raw score (the actual score as you reported your responses), and a t-score (the 'transformed', easier to understand score).

T-scores and Normal Distribution

T-scores are a conversion of a normal distribution (again, to make scores more meaningful).

A normal distribution places observations of **anything** on a scale that has a mean of 0 and a standard deviation of 1, as shown here



T-scores and Normal Distribution

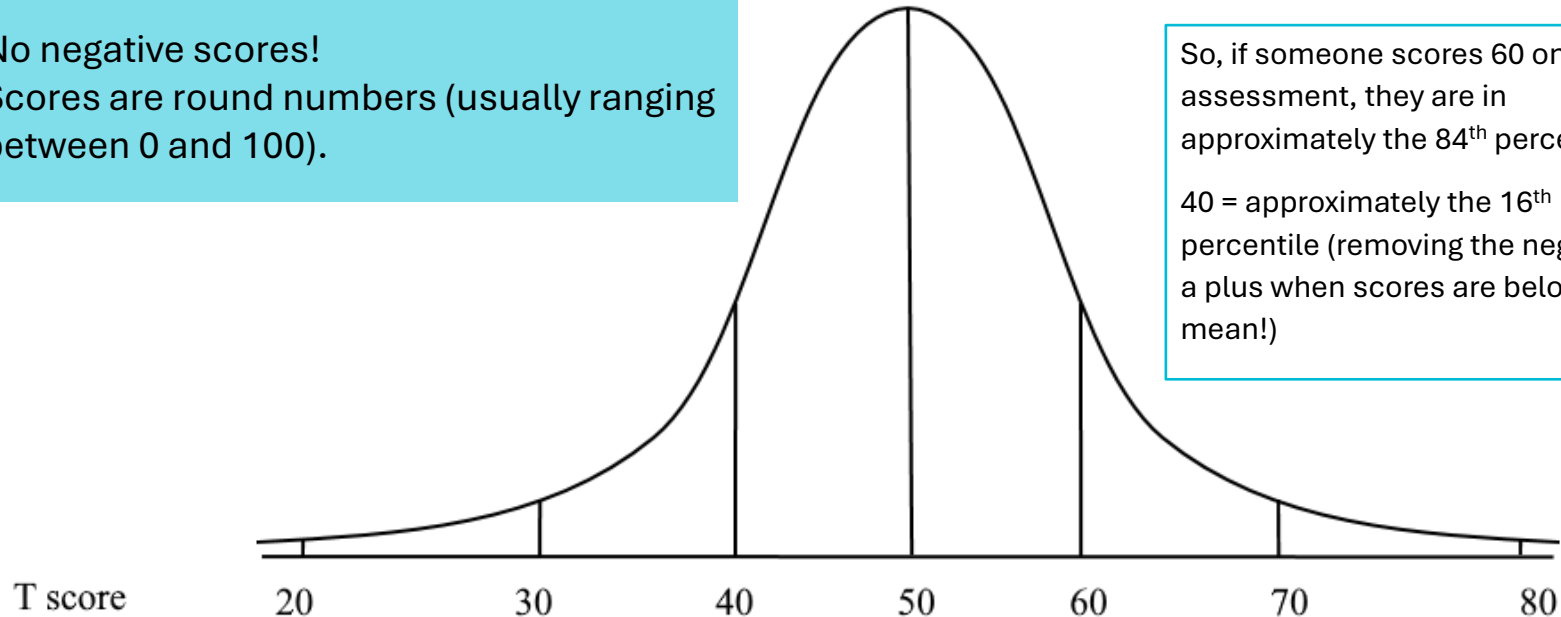
To get T-scores, we simply convert this to have a mean of 50 and a standard deviation of 10. There are two main positives with this:

1. No negative scores!
2. Scores are round numbers (usually ranging between 0 and 100).

We can then attach percentiles to T-scores

So, if someone scores 60 on an assessment, they are in approximately the 84th percentile.

40 = approximately the 16th percentile (removing the negative is a plus when scores are below the mean!)



NEO-PI-3 Data Table

Raw scores

The scores calculated based on participants responses to each question that makes up each facet

Scale	Raw Score	T Score	Range
Factors			
(E) Extraversion	--	44	Low
(C) Conscientiousness	--	68	Very High
(N) Neuroticism	--	47	Average
(O) Openness	--	45	Low
(A) Agreeableness	--	56	High
Extraversion Facets			
(E1) Warmth	18	41	Low
(E2) Gregariousness	12	37	Low
(E3) Assertiveness	20	58	High
(E4) Activity	18	51	Average
(E5) Excitement-Seeking	13	42	Low
(E6) Positive Emotions	19	51	Average

T-scores

Transformation of the raw scores to allow for comparison to a norm group

Range

How t-score relates to the average

There is **no new information** being provided with a t-score - it is simply a conversion or 'repackaging' of information that is easier to understand and explain



**Any
questions?**



Tett et al. article discussion