

# AptiDrive®

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Presentation for

6th INTERNATIONAL CONFERENCE  
“Inspection, Audit and Importance of the  
Intelligent Transport Systems”



The British  
Psychological Society

A blurred crowd of people walking, symbolizing human error. The image shows a group of people in motion, with their figures softened and out of focus, creating a sense of a busy, crowded environment. The background is a plain, light color, making the crowd the central focus.

# Human Error

The cause of most accidents & the role of  
psychometric profiling

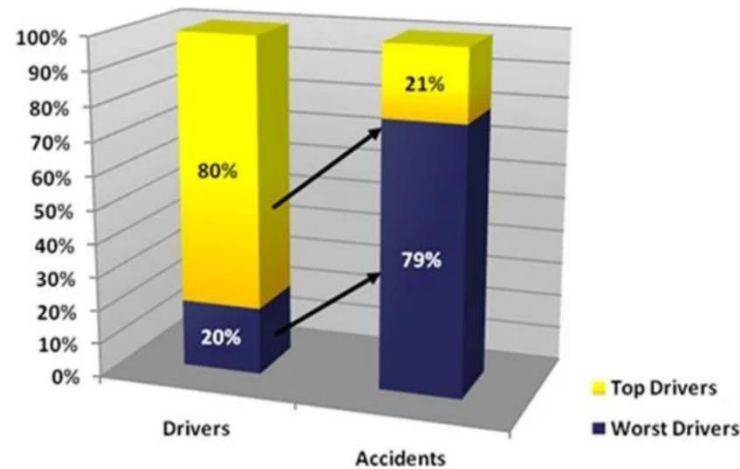


# Human Error : Human Behaviour

*"Accidents involving commercial vehicles are caused by **human error** in 80-90% of cases."*



*"20% of drivers are involved in 79% of all crashes/incidents and 76% of all violations"*



*"The links are clear; driver **behaviour** and poor **attention** are directly related to the frequency and severity of accidents."*

*"Drivers with a poor history of safety make **more errors** in attention tests than their less accident prone colleagues."*





# The opposite of Human Error



A 'good' driver? Why?



# Identifying Human Behavior's

A "Great" Driver



|

Bad Driver?



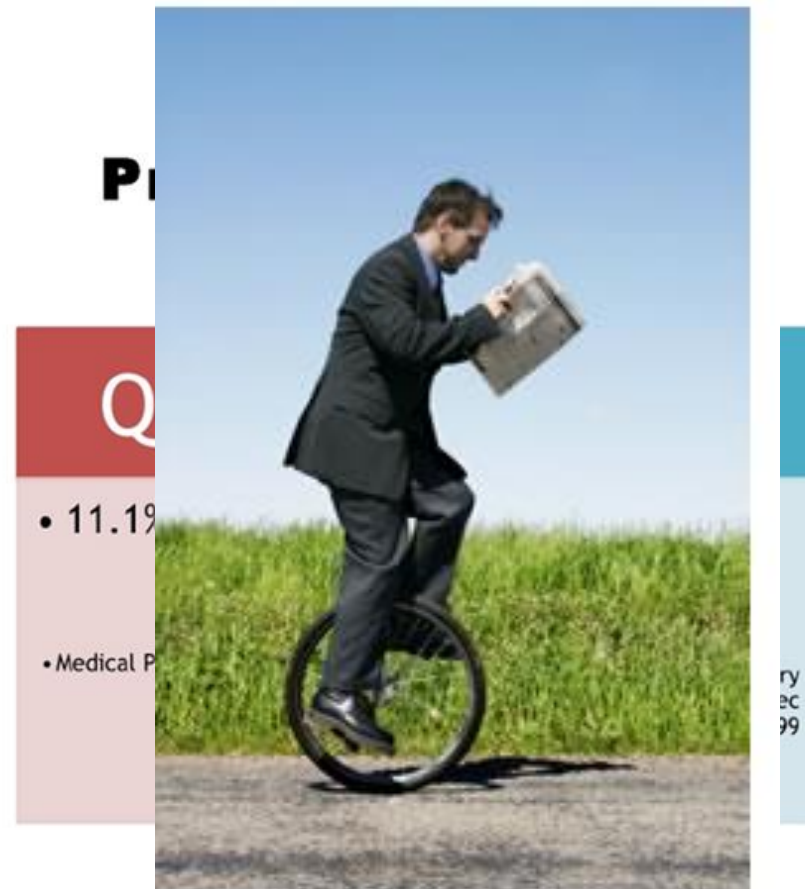


## Employee Performance

- ⦿ Ability – 70%
- ⦿ Training – 30%

## Employee Wellbeing

- ⦿ Undiagnosed Mental Health Issues
- ⦿ ADHD (> 10% in UAE)
- ⦿ Stress related health problems





## Psychometric Assessments

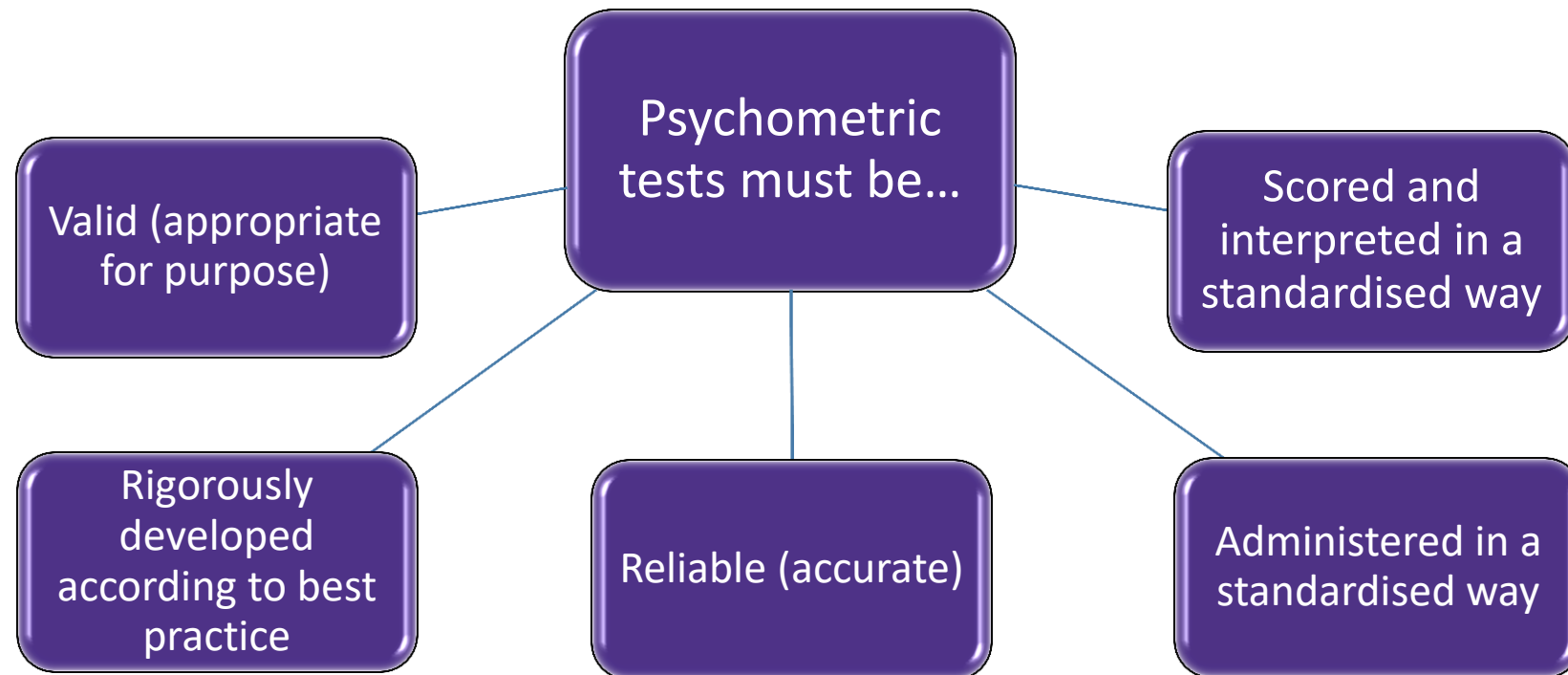
- ⦿ Ability – Current Capability  
Tests: Verbal, numerical or abstract
- ⦿ Attainment – Learned Knowledge  
Tests: Qualifications, driving test
- ⦿ **Aptitude** – Potential to learn  
Tests: Based on job role
- ⦿ **Personality** – Behaviors and preferences  
Tests: Personality based on job role





## A Definition of Psychometrics

*"An assessment procedure designed to provide **objective** measures of one or more psychological characteristics"; BPS*







# What is required: Driver Testing, Assessment & Profiling

Requirements?  
What does a good test look like?

**Language  
Independent**

**Easy to Use**

**Reliable**

**Easily added to  
existing process**

**Part of a system**

**Fast Delivery**

**Quick Results**

**Cost effective  
(ROI)**

**Training &  
Support**

**Accurate**

**Industry Specific**



## The AD2 Profiling Test

- ⦿ Developed to measure driving proficiency, recognised by BPS
- ⦿ Simple to administer
- ⦿ Quick to complete < 8 minutes
- ⦿ Written feedback from registered psychometric professionals
- ⦿ High Validity and Reliability
- ⦿ Test for ADHD

Processing speed

Accuracy of visual scanning

Coordination of speed and accuracy

Control of attention

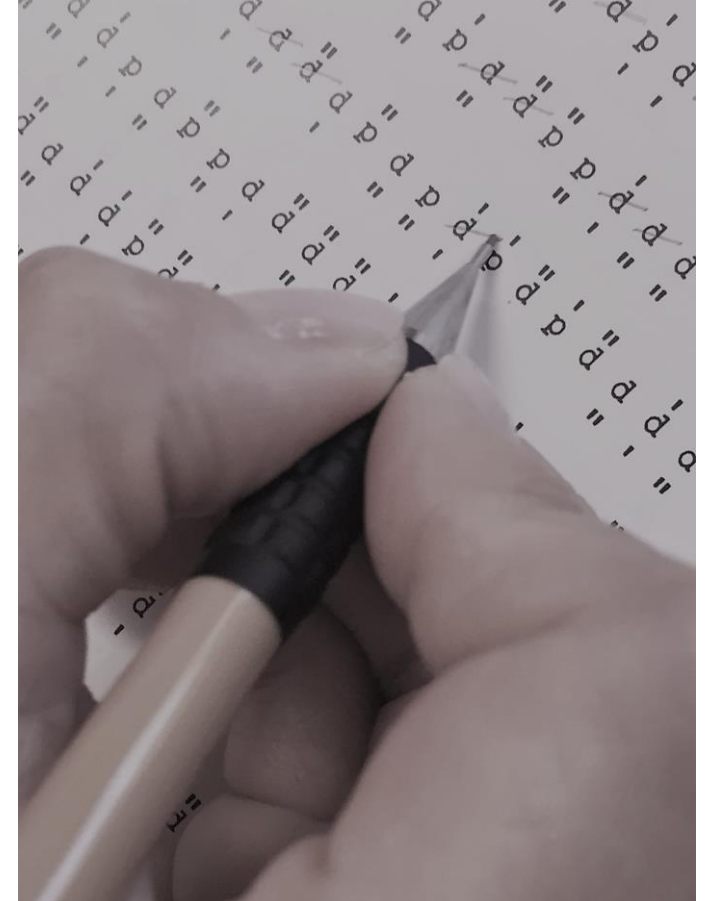
Inhibitory control

Cognitive flexibility

Consistency in work speed and persistence

Rule compliance

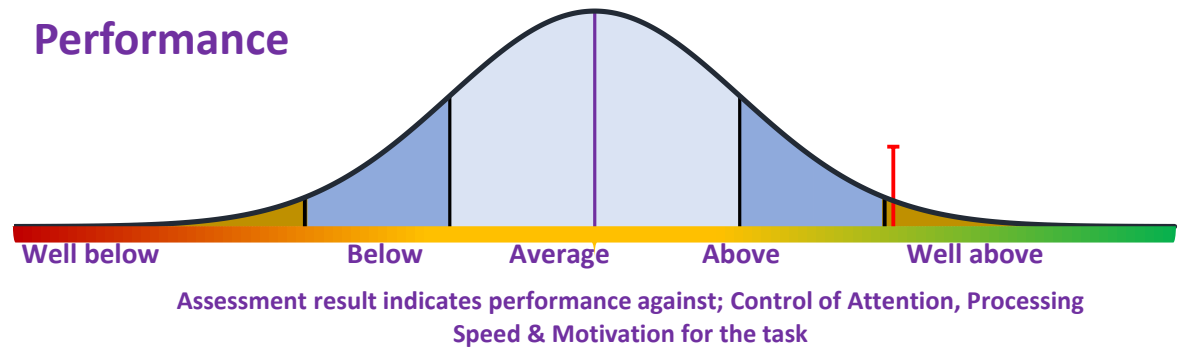
Motivation for the tasks





## Output of AD2 assessment

- ⦿ Individual results for each driver
- ⦿ Easy to read assessments
- ⦿ Results show individual aptitude for each of the key behaviours required of a safe and professional driver
- ⦿ Uses familiar transport language
- ⦿ Outputs highly reliable
- ⦿ Compared against large 'norm' groups



### Standard Deviation (SD)

$$SD = \sqrt{\frac{\sum(x - \bar{x})^2}{N - 1}}$$

	very low	Low	Medium	High	very high
Consistency				●	
Motivation				●	

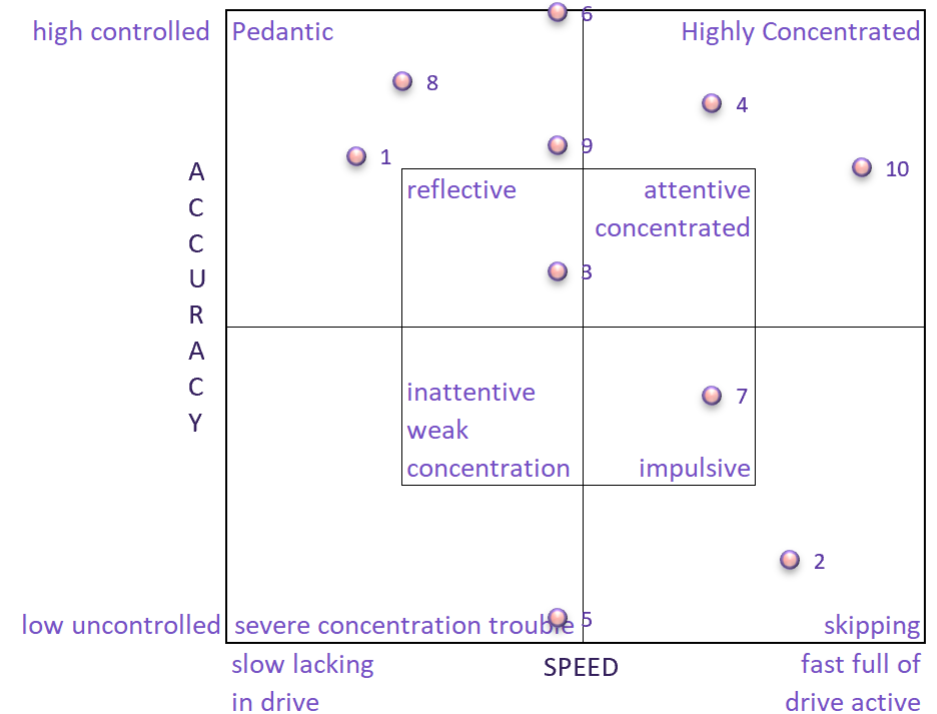


## Group comparison - AD2 report

- Comparison of results: groups of 10 drivers
- Assessments rated against ten test takers
- Results show the individuals aptitude against a group for each of the key behaviours required of a safe and professional driver
- Creation of a company 'norm' group of 100+ driver allows for detailed comparison of driver aptitude against existing information on each driver e.g.: accident log, telematics, driving

### Accuracy v Speed (test group is normative)

Accuracy v Speed, as above, is plotted on the graph below for each employee. This shows individual performance within the group, (the norm is changed from a large population to just the group.)







### How it's delivered and processed:

- ⦿ First understand the specific Issues and decide which test(s)
- ⦿ Train your staff to invigilate tests and become profilers
- ⦿ Tests can then be delivered anytime by exiting staff, on-site or in-field
- ⦿ Completed tests are scanned & emailed for computation and analysis
- ⦿ Results within 48 hours, or less with prior agreement
  - ⦿ Electronic test available in certain circumstances
- ⦿ Individual results for each driver assessment
- ⦿ Driver assessments are compared against each other in batches of 10
- ⦿ > 100 tests, unique corporate profile for specific job roles / other specific criteria



## Services

- ⦿ Psychometrics; British Psychological Society Assessments in:
  - ⦿ Ability, Aptitude, Personality
- ⦿ Consultancy and advice on health and mental wellbeing at work
- ⦿ Training –Invigilation of psychometric tests for staff
- ⦿ Training – Work based health and wellbeing for drivers – CPC module
- ⦿ Consultancy – Policy and strategy for managers and leadership team
- ⦿ Consultancy – ISO H&S standards, ISO45001, PAS1010 etc..
- ⦿ Specialist work based health products
- ⦿ Strategic relationships with trusted third parties; other products and services

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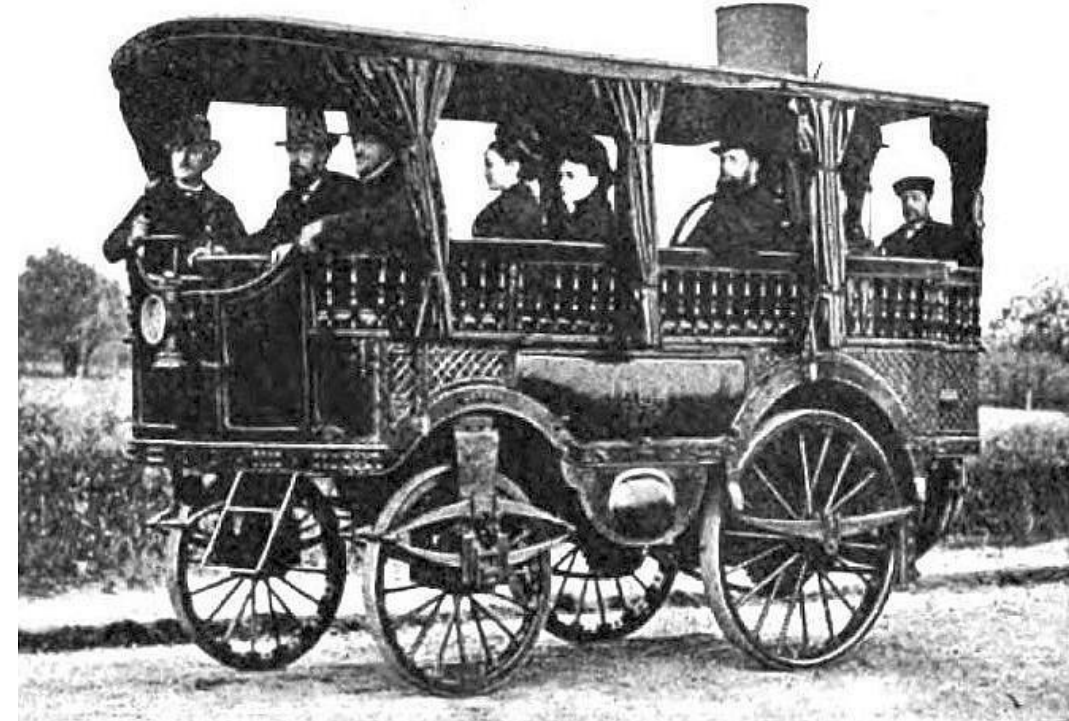


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## Background to Driver Assessment

- ⦿ Circa 1955, driver psychology research started
- ⦿ 1965, new forms of test discovered
- ⦿ Large 'norm' Groups added
- ⦿ Continuous improvement
- ⦿ 2018 - Hundreds of thousands of tests taken
- ⦿ Advances in mathematics: Statistics, Percentiles, Normal Distribution Curves, Standard Deviation etc. used to validate results



The first road death from a motor vehicle was Mary Ward, 31 August 1869



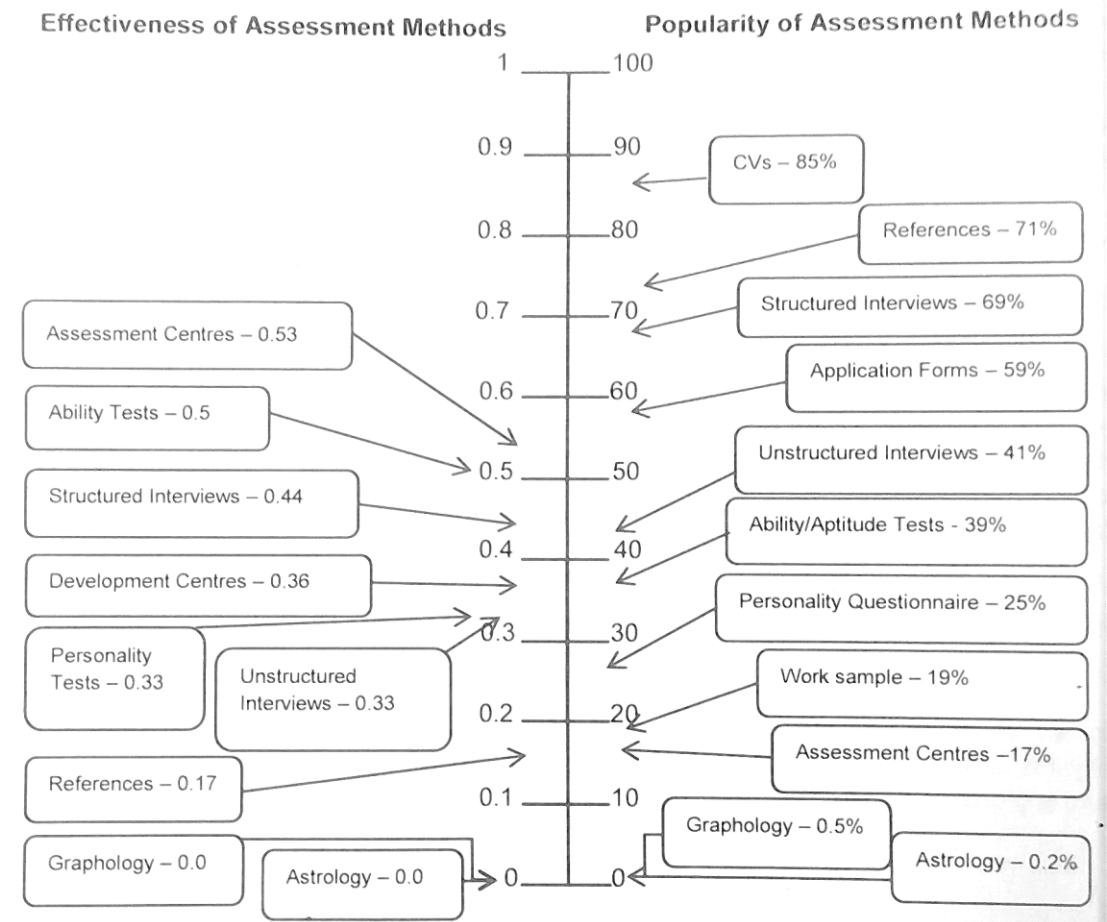


## Uses of Psychometrics

- ⦿ Improve **Candidate Selection**, reduce time to recruit and costs
- ⦿ Reduce staff turnover
- ⦿ Create personalized training and development programs for individuals
- ⦿ Reduce road, on-site and workplace accidents

Ability Tests are three times more effective than references but are used less than 10% of the time

References are the second most common form of interview technique but less than 17% effective



CV's are the most common form of assessment but have no method underpinning them