Chapter 1

Understanding Psychometric Tests

In This Chapter

- Looking at what tests measure
- Distinguishing the range of different tests available
- Understanding the differences between personality and intelligence tests
- Seeing how tests are used in practice

Psychometric tests are a series of standardised tasks, designed in such a way that everyone who takes them receives the same task to do and the same instructions for doing them. Two main types of test exist: tests that have right or wrong answers, and tests in which you say what's typical of you. The first group are called *intelligence* or *ability tests* and the second group include *personality* or *vocational interest questionnaires* or *tests*.

You can be forgiven for thinking that a test is just a list of questions that somebody decided to write one day. Well, there's a little more to testing than that, as you find out in this book!

In this chapter I explain how psychometric tests are designed to measure the two things about you that recruiters are most interested in – intelligence and personality – and how the tests are designed to be as fair as possible. I also explain the different types of test that recruiters use, how those tests are used in practice, and where they fit into the whole recruitment process. I also explode a few myths about testing, just to help put you at ease!

Where does testing come from?

People have always wanted to know what goes on inside other people's heads. The first scientific-*ish* attempts to work this out were made by Hippocrates in the fourth century BC. He thought that different bodily fluids, or *humours*, could explain human personality. According to Hippocrates, cheerful or sanguine people were characterised by *blood*, dominant and impatient people were characterised by yellow bile, creative people were characterised by *black bile*, and those characterised by *phlegm* tended to be placid and relaxed. The nineteenth century witnessed the first modern attempt to understand what human characteristics (specifically intelligence) were and how they could be measured when Francis Galton looked at reaction time as an indicator of intelligence. In the early 1900s Alfred Binet developed the idea that you can measure intelligence indirectly through *behaviour*. Binet began to measure things like numerical and verbal skills and introduced the idea of having different *difficulty levels* in a test. This idea meant that tests could be pitched at the appropriate level for the group of people whose abilities you were measuring.

Even today, the use of testing (particularly *intelligence* or *ability testing*) is not without controversy. Many psychologists acknowledge that differences that seem to exist in test scores across gender and race are more to do with cultural, social, and educational influences, and errors in the testing process, than anything else.

History provides several examples of how researchers prodded and poked the brains of live subjects (both human and animal) to explore the brain. A depressing thought is that much of what we know today about the brain and its relationship to thought and behaviour comes from studies like these. At least we can be thankful that we've moved on from the days of Hippocrates, and that you're unlikely to be asked for samples of bodily fluids prior to an interview!

Identifying What Tests Measure

The word *psychometric* comes from *psycho* meaning mental, and *metric* meaning measurement.

The problem with measuring *anything* that goes on inside your head is exactly that – it's *inside* your head – and recruiters are faced with the tricky problem of never being able to observe *directly* the very things they're interested in.

So, they tend to focus more on the outcome of what goes on inside your head (that is, your *behaviour*) or your performance in a test.

Understanding intelligence and ability tests

What you are *capable* of doing is determined by your intelligence, but what actually is *intelligence*? Many psychologists think of intelligence as being either *crystallised* (that is, acquired skills and knowledge) or *fluid* (flexible reasoning ability). General intelligence or *general ability* is also made up of a series of *aptitudes* or *specific abilities* – verbal ability, numerical ability, abstract ability (sometimes known as creative or strategic ability), and technical ability (which includes spatial and mechanical ability).

A numerical ability test that presented you with questions you'd never seen before would be measuring how you apply your specific crystallised numerical knowledge in a fluid way. In practical terms, almost all ability tests look at your level of *fluid intelligence*. Ability tests contain sets of questions organised around measuring specific individual abilities, such as verbal, numerical, technical, and abstract ability. If a recruiter is only interested in a single aspect of your intelligence such as your verbal ability, you may be asked only to complete a verbal ability test. If, on the other hand, she's interested in your overall level of intelligence or *ability*, you may be asked to complete a range of different ability tests to give an overall picture of your intellectual ability.

The key feature of ability tests is that they have right and wrong answers, and the score you obtain is a judgemental measure of your intellectual ability.

When you hear psychometric test boffins using terms such as ability, intellectual ability, aptitude, or intelligence, they are talking about the same thing.

Understanding personality tests

Your *personality* is crucial in determining how well you can apply your intellectual ability to the real world. Different

theories exist about what exactly personality is (you won't be surprised to hear that not everyone agrees on which theory is the correct one). These theories range from Freud's idea that personality is driven by unconscious motives, through to Maslow's notion that people are driven to satisfy needs. *Type* theories suggest that you can classify people according to a number of finite *personality types*. Type measurements are mostly used in training and development, because the way your type is calculated makes comparing candidates against each other in a recruitment setting rather difficult.

The idea that personality is made up of five main *traits* (the 'Big Five' theory) is perhaps the most widely accepted and useful theory for recruiters. This theory breaks down each main trait into a number of more specific traits. Table 1-1 shows you these main traits.

Table 1-1 The Five Main Personality Traits

Personality Trait	*Behaviours Associated with a High Trait Score*	*Behaviours Associated with a Low Trait Score*
Extraversion	Externally focused, outgoing	Internally focused, reflective
Stability	High self-esteem, calm, relaxed	Low self-esteem, anxious, worrying
Thinking style	Task focused, logical, mechanical	Sensitive, creative, strategic
Independence	Assertive, confident	Submissive, shy
Conscientiousness	Rule governed, structured, self-disciplined	Disorganised, unstructured

Personality tests measure how much a person has of these traits and then compare candidates against each other. Each trait represents a *continuum* with certain behaviours at one end, and 'opposite' behaviours at the other, so the idea of a 'good' score or 'pass mark' on a personality test makes no sense. Seeing how candidates with very different personalities can all bring something unique to a job is always a pleasure.

How your personality can hinder – or help – your ability

I once carried out an assessment for a customer service manager role. The candidate had a high level of numerical reasoning ability and easily dealt with the complexities of customer accounts. However, she wasn't very assertive, and found dealing with customers difficult. So although she was able to perform tasks to a high standard, her personality limited her ability to do the job in a live situation. Clearly, this person was better suited to a job where she could apply her talents, without having to challenge others.

This principle also works in the other direction – if a person is well organised and motivated, she can often apply a somewhat limited level of ability to great effect.

The key feature of personality tests is that they have no right or wrong answers, and the score you obtain is a description of, rather than a judgement about, your personality. Technically, a personality test is not a *test* at all – because you can't 'pass' or 'fail' – but more a descriptive questionnaire. For convenience most people still refer to them as tests, and I retain that convention here.

Working Fast, Working Hard: Speed Tests versus Power Tests

Two common styles of ability test are regularly used – speed and power tests. They both measure your ability, but do so in different ways. This distinction doesn't apply in personality tests.

Speed tests – smarties fast!

Speed tests are often used for lower-level jobs. Speed tests ask you to complete a large number of quite easy questions, are strictly timed, (commonly lasting around 25 minutes), and can comprise anything up to 60 or more questions.

The key with these tests is to hit the ground running and work fast!

Power tests – intellectual muscle

You're more likely to come across *power tests* for higher-level jobs. Power tests ask you a smaller number of much harder questions, each comprising some information followed by four or five related questions. These tests are more concerned with the *quality* of your performance.

Power tests often have generous time limits, because you're meant to take time arriving at the correct answer. Any time limit that does apply is often quite long (maybe an hour or more), and is based on the principle that if you haven't worked out the right answers by then, you never will! The key here is to fully digest the information presented first. Don't rush in and start answering questions straight away. Power tests are about quality rather than speed.

Make sure that you understand the nature of any time limit you're given for a test, and whether that limit is fixed or just given to you as a guide.

Seeing How Tests Are Used in Practice

These days you may easily think that everyone uses psychometric tests! Historically, tests tended to be the sole preserve of Human Resources (HR) staff, but nowadays you're just as likely to find testing being used by a non-HR manager within a company. Test results are often considered by a wider range of people than just the HR department to ensure that the company recruits the right person for the job.

Preparing to recruit

Before initiating any tests, a recruiting organisation needs to produce two documents:

- **Job description.** The recruiter prepares the job description by carrying out a systematic job analysis. This analysis identifies the key tasks required in the job in question.
- **Person specification.** This document stipulates what characteristics a candidate needs in order to do the tasks described in the job description. The whole recruitment process is geared towards assessing the characteristics listed in the person specification. Without it, the choice of any selection tool is little more than random. When a client asks me, 'Can you come and do some personality assessments for us?', I always ask to see the person specification first, so I can decide whether a personality test is the right way forward.

When the person specification is written, the recruiter can decide on the most appropriate test or other assessment method. Often, an interview, presentation, or other form of activity may be chosen in preference to a test. The key point is that tests aren't just used for the sake of it when a better alternative selection tool exists.

How tests are administered

Each test has a set of administration instructions that should cover some example questions, test-specific instructions on how to make your responses, and time limits.

Testing, testing . . .

Although you may think otherwise, test design is anything but arbitrary. Modern *psychometricians* (yes, that's the catchy title we go by!) are more statistician than psychologist. Test design involves a complex statistical process to ensure that a test is accurate, fair, and focuses only on the things that the test is designed to measure. Tests are constructed using an accepted set of rules and a good quality test can take many years and several thousand trial subjects to produce. Many tests never get published because they fail to meet the stringent standards required. Unfortunately, test publication and use is not legally regulated in the UK so not all tests live up to these high standards. Hundreds of tests are in use today in the UK, although a core of around 20–30 are used most often.

When the test starts you are under exam conditions, and aren't normally allowed to ask further questions. Make sure that you pay close attention to the instructions and make full use of the opportunity to ask questions before the test starts.

With an Internet-based test you may not be able to ask questions as you would during a face-to-face session. Online tests should have a help system for recording any problems that may have affected your performance. Otherwise, make a mental note of any issues and e-mail these to the recruiting organisation when the test is over.

Skip over to Chapter 2 for more information about test administration.

How tests are scored and interpreted

With most tests, your score is compared to the scores obtained by a reference or *norm* group, so the recruiter can put your score into a meaningful context and compare your performance to that of the other people of known ability. This is why no such thing as a 'pass mark' in tests exists.

Choosing the right norm group for an ability test is crucial. Choosing a norm group based on school leavers for a test of graduate-level ability would be pointless – all the candidates would seem to do brilliantly!

With personality tests, the recruiter uses the score to place you (the candidate) somewhere along a personality trait scale (for example, an *assertiveness scale*) so she can say whether you're more assertive than average, less assertive than average, or about the same as most people. Personality assessment is descriptive rather than judgemental, so personality test scores are often compared to a reference group based on the adult population.

Your score is most commonly described in terms of *A to E grades*, or *percentiles*. Other more technical scoring scales, such as *T-scores, Z-scores, stens*, or *stanines* are sometimes used. You don't need to understand the fine detail of these systems, but it is important to understand that they all do the same thing – allow the recruiter to know where your score falls in relation to the comparison group average. If the

recruiter knows what she's doing, she should take some time during feedback to explain the scoring system she has used. (See Chapter 4 for more on dealing with feedback.)

Predicting the future – did the test get it right?

The key thing that the recruiter is interested in afterwards is assessing how well the test predicted work performance. After all, that's the whole point of using a test!

Recruiters sometimes use a large-scale statistical study to quantitatively examine the relationship between test scores and work performance. Alternatively, a team of experts on the job in question may simply consider how well the test predicted work performance. This qualitative method tends to be used when smaller numbers of candidates apply for the job, or if the job is very specialist and conducting large-scale statistical analysis just isn't feasible.

Distinguishing Test Myth from Test Fact

A few myths have developed around psychometric tests. Table 1-2 shows a few of the more common ones, plus a few words on the reality.

Table 1-2 Testing Fiction and Fact

Testing Fiction	*Testing Fact*
Psychometric tests have a pass mark.	Wrong. The highest scoring candidates are usually viewed more favourably. Personality tests *never* have a pass mark.
A poor ability test score means you are stupid.	No. A poor ability test score just means you didn't score highly on that particular test. You may find dealing with complex problems relying on the type of ability the test measures more difficult.

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Table 1-2 *(continued)*

Testing Fiction	*Testing Fact*
Tests are unfair.	Wrong. If they're well designed and used properly, tests are one of the fairest selection methods.
Tests have trick questions to catch you out.	No, they don't. Good tests are fair and accurate measures.
In a personality test you need to tell the recruiters what they want to hear.	Wrong. You need to tell them the truth. If you get a job based on a less than honest description of yourself on a personality test, you probably won't be too happy. Your personality and the job may not match up that well.
You can 'trick' a test.	Wrong. You can't trick an ability test – if you don't know the correct answer you can't fool the test into thinking you do. Misrepresenting yourself in a personality test is possible, but you may get found out during the feedback session.
I'm just no good at tests.	You're probably better than you think. Your performance improves with practice.
Tests are designed to be impossible to complete.	No, but tests are designed to stretch you – recruiters want to see how *well* you can do, not how poorly.
Anyone can write a test.	Perhaps, but the test may not be much good. Good tests take considerable expertise and many years to develop.
You need to revise for a test.	No, you don't. Ability tests don't rely on knowledge. You can prepare yourself in other ways. Personality tests require no preparation at all.
Recruiters use tests because they like to see candidates suffer!	The opposite is true! Recruiters want to give candidates a favourable opinion of their company – after all, they want the candidate to work there.