Old and new selection methods

We’ve always done it this way

Why selection matters

Clark Hull is better known, to psychologists at least, as an animal learning theorist, but very early in his career he wrote a book on aptitude testing (Hull, 1928) and described ratios of output of best to worst performers in a variety of occupations. Hull was the first psychologist to ask how much workers differ in productivity, and he discovered the principle that should be written in letters of fire on every manager’s office wall: the best is twice as good as the worst.

Human resource (HR) managers sometimes find that they have difficulty convincing colleagues that HR departments also make a major contribution to the organization’s success. Because HR departments are neither making things, nor selling things, some colleagues think they are not adding any value to the organization. This represents a very narrow approach to how organizations work, which overlooks the fact that an organization’s most important asset is its staff. Psychologists have devised techniques for showing how finding and keeping the right staff adds value to the organization. The rational estimate technique (described in detail in Chapter 14) estimates how much workers who are doing the same job vary with regard to the value of their contribution. For computer programmers, Schmidt, Gassert-Rosenberg and Hunter (1980) estimated that a good programmer is worth over $10,000 a year more than an average programmer. This implies that HR can add a great deal of value to the organization by finding good managers in the first place (the subject of this book), making managers good through training and development, and keeping managers good by avoiding poor morale, high levels of stress, and so on. Differences in value in the order of £16–28,000 per employee mount up across an organization. Hunter and Hunter (1984) generated a couple of examples for the public sector in the USA:

- A small employer, the Philadelphia police force (5,000 employees), could save $18 million a year by using psychological tests to select the best.
- A large employer, the US Federal Government (4 million employees), could save $16 billion a year. Or, to reverse the perspective, the US Federal Government is losing $16 billion a year by not using tests.
Some critics see a flaw in Schmidt and Hunter’s calculations. Every company in the country cannot employ the best computer programmers or budget analysts; someone has to employ the rest. Good selection cannot increase national productivity, only the productivity of employers that use good selection methods to grab more than their fair share of talent. At present, employers are free to do precisely that. The rest of this book explains how.

Recruitment

Traditional methods

Figure 1.1 summarizes the successive stages of recruiting and selecting an academic for a British university. The advertisement attracts applicants (As) who complete and return an application form (AF). Some As’ references are taken up, while the rest are excluded from further consideration. Applicants with satisfactory references are shortlisted and invited for interview, after which the post is filled. The employer tries to attract as many As as possible, then passes them through a series of filters, until the number of surviving As equals the number of vacancies.

Figure 1.1 Successive stages in selecting academic staff in a British university.
Recruitment sources

There are many ways in which employers can try to attract As, for example through advertisements, agencies (public or private), word of mouth, ‘walk-ins’ (people who come in and ask if there are any vacancies) or job fairs. Employers should analyse recruiting sources carefully to determine which find good employees who stay with them. Employers also need to check whether their recruitment methods are finding a representative applicant pool in terms of gender, ethnicity and disability. Sometimes, employers or their agents seek out likely candidates for a vacancy and invite them to apply (‘headhunting’).

Realistic job previews (RJPs)

Many organizations paint a rosy picture of what is really a boring and unpleasant job because they fear no one would apply otherwise. In the USA, RJPs are widely used to tell As what being, for example, a call-centre worker is really like – fast-paced, closely supervised, routine to the point of being boring and solitary. The more carefully worded the advertisement and the job description, the fewer unsuitable As will apply. RJPs tend to reduce turnover, preventing people from leaving as soon as they find what the job is really like.

Informal recruitment

Applicants are sometimes recruited by word of mouth, usually through existing employees. Besides being cheaper, the grapevine finds employees who stay longer (low turnover), possibly because they have a clearer idea what the job really involves. Zottoli and Wanous (2000) report that informal recruits, on average, do slightly better work; the difference is small (d = 0.08) but is achieved very cheaply. However, fair employment agencies, for example the (British) Commission for Racial Equality (CRE), generally dislike informal recruitment. They argue that recruiting their white workers’ friends is unfair because it tends to perpetuate an all-white workforce.

New technology and recruitment

Advertising, making applications, sifting applications and even assessment can now be carried out electronically, which can make the whole process far quicker. People talk of making ‘same-day offers’, whereas traditional approaches took weeks or even months to fill vacancies. On the downsize, Internet recruitment can greatly increase the number of As, which is good for the employer if it broadens the field of high-calibre As, but it does also create work sorting through a mountain of applications.

• More and more jobs are advertised on the Internet through the employer’s own website or through numerous recruitment sites.
People seeking jobs can post their details on websites for potential employers to evaluate. This gives the job seeker an opportunity that did not exist before. People could make speculative applications to possible employers, but could not advertise themselves on a global scale.

Many employers now use electronic application systems, eliminating the conventional paper AF.

Interactive Voice Recognition (IVR) can be used by As to make their application, and by the employer to screen them. The A presses keys to indicate his/her responses, or – in more sophisticated systems – speech recognition software allows A to speak his/her answers.

‘Headhunting’ can be done electronically by systems that scan databases, newsletters and ‘blogs’ for any information about people who are outstanding in the field of, for example, chemical engineering.

**Application sifting**

The role of the AF, or its new technology equivalent, is to act as first filter, choosing a relatively small number of applications to process further, which is called *sifting*. Sifting can take up a lot of time in HR departments so any way of speeding it up will be very valuable, so long as it is fair and accurate. Research suggests that sifting is not always done very effectively. Machwirth, Schuler and Moser (1996) used policy-capturing analyses to reconstruct how HR sifted applications. Policy capturing works back from the decisions that HR makes about a set of applications, to infer how HR decides. Machwirth et al. showed what HR does, according to the policy-capturing analysis, often differ from what they say, when asked to describe how they sift. Managers say they sift on the basis of proven ability and previously achieved position, but in practice reject As because the application looks untidy or badly written. McKinney et al. (2003) analysed how US campus recruiters use grade point average (GPA; course marks) to select for interview. Some choose students with high marks, which is the logical use of the information, given that GPA does predict work performance to some extent, and that it is linked to mental ability, which also predicts work performance. A second large group ignore GPA altogether. A third group select for lower GPA, screening out any As with high grades. This does not seem a good way to sift, given the link between work performance and mental ability. The choice of strategy seems essentially idiosyncratic and cannot be linked to type of job or employer.

**Accuracy and honesty**

Numerous surveys report that alarming percentages of AFs, résumés and CVs contain information that is inaccurate, or even false. These surveys often seem to have a ‘self-serving’ element, being reported by organizations that offer to
verify information supplied by As. Not much independent research regarding this has been reported. Goldstein (1971) found that many As for nursing vacancies exaggerated both their previous experience and salary. More seriously, a quarter gave a reason for leaving that their previous employer did not agree with, and 17% listed as their last employer someone who denied ever having employed them. McDaniel, Douglas and Snell (1997) surveyed marketing, accounting, management and computing professionals, and found that 25 to 33% admitted misrepresenting their experience or skills, inflating their salary, or suppressing damaging information, such as being sacked. Keenan (1997) asked British graduates which answers on their AFs they had ‘made up … to please the recruiter’. Hardly any admitted to giving false information about their degree, but most (73%) admitted they were not honest about their reasons for choosing that employer, and 40% felt no obligation to be honest about their hobbies and interests. Electronic media, such as the Internet, do not bypass these problems. It is just as easy to lie through a keyboard as it is on paper or in person, and just as easy to give the answer you think the employer wants to hear.

RESEARCH AGENDA

• The accuracy of CV and AF information
• What sort of information is wrongly reported
• What sort of people report false information
• Why do people report wrong information
• Whether the rate of incorrect information is increasing
• The role of careers advice, coaching, self-help books and websites.

Fairness and sifting

Equal opportunities (EO) agencies in the USA have produced long lists of questions that AFs should not ask for one reason or another. Some are obvious: ethnicity, gender and disability (because the law forbids discrimination in all three). Others are less obvious: for example, AFs should not ask about driving offences, arrests or military discharge, because some minorities have higher rates of these, so the question may create indirect discrimination. Questions about availability over holidays or weekends may discourage, for instance, some religious minorities. A succession of surveys (reviewed by Kethley & Terpstra, 2005) have consistently shown that most US employers seem unaware of, or unconcerned by, this guidance and continue to ask questions that the agencies say they should not. Kethley and Terpstra reviewed 312 US Federal cases involving AFs and found complaints centred on sex (28%), age (25%) and race (12%). Some questions listed as ‘inadvisable’ – military discharge, marital status, arrest – have never been the subject of a court case.
Internet recruitment and selection could raise another set of ‘fairness’ issues. Not everyone has access to the Internet. Any gender, ethnicity or age differences in access to the Internet might have possible legal implications.

**Bias in sifting**

Many studies have used the paper applicant method, which prepares sets of equally suitable As who differ in one key feature – for example gender, age or having a beard – then has HR staff rate their suitability. This is an easy type of research to do and one that usually ‘gets results’ by finding evidence of bias:

- Davison and Burke (2000) reviewed 49 studies of gender bias and found both male and female sifters biased against female As. The less information about the job was given, the greater the bias.
- In The Netherlands, As with Arabic-sounding names are four times as likely to be rejected at sifting (Derous, Nguyen & Ryan, 2008).
- Gordon and Arvey (2004) summarized 25 studies of age bias and found that older As rated less favourably, especially their ‘potential for development’. However, bias was not large and seemed to be decreasing.
- Ding and Stillman (2005) report New Zealand data showing that overweight female As tend to be sifted out.
- Correll, Benard and Paik (2007) found women with children tend to be sifted out, but men with children are not, and may even be favoured.

Paper applicant research has a flaw, however. The sifters know they are being scrutinized by psychologists, so may be on their best behaviour. Also, they are not really hiring As and will not have to work with the people they ‘select’. Research on sifting in the USA had reached the reassuring conclusion that it seemed free of racial bias, but a recent study by Bertrand and Mullainathan (2004) suggested there may be a serious problem after all. They used a different technique. They sent their ‘paper applicants’ to real employers, applying for real jobs, and counted how many were shortlisted for interview. Choice of first name identified A as white or African American. (Americans will assume ‘Brad’ and ‘Carrie’ are white, while ‘Aisha’ and ‘Leroy’ are African American.) For every 10 ‘white’ As called for interview, there were only 6.7 ‘African Americans’; African Americans were being sifted out, by ethnicity. Bertrand and Mullainathan could argue that their data show what is really happening in the real US job market, which justifies the slightly unethical practice of sending employers fake job applications. Some research, described in Chapter 4, takes this method a step further, by accepting invitations to interview. There is one partly similar study in Britain, where Hoque and Noon (1999) wrote to employers enquiring about possible vacancies, not applying for a specific job, calling themselves ‘Evans’ implying a white person, or ‘Patel’ implying a South Asian person. ‘Evans’ got, on average, slightly longer and more helpful replies.
Improving application sifting

**Behavioural competences**

Applicants are asked to describe things they have done which relate to key competences for the job. *Ability to influence others* is assessed by A describing an occasion when A had to persuade others to accept an unpopular course of action. This method might improve the AF as a selection assessment, but there is no research on whether it does.

**Weighted application blanks (WABs) and biodata**

AFs can be converted into WABs by analysing past and present employees for predictors of success (Chapter 9). One study found that American female bank clerks who did not stay long tended, for instance, to be under 25, single, to live at home or to have had several jobs (Robinson, 1972), so banks could reduce turnover by screening out As with these characteristics. (Robinson’s list probably would not be legal today however because it specifies female bank clerks.) Most WABs are conventional paper format, but the technique would work equally well for electronic applications. Biodata also uses biographical items to select, but collects them through a separate questionnaire, not from the AF.

**Training and experience (T&E) ratings**

In the USA, application sifting has been assisted by T&E ratings, which seek to quantify As’ T&E by various rating systems, instead of relying on arbitrary judgements. T&E ratings seem to have been overtaken in the USA by application coding systems such as Resumix. Note, however, that T&E ratings had extensive research (McDaniel, Schmidt & Hunter, 1988), showing they do actually predict work performance – information not provided for Resumix or any other system.

**Minimum qualifications (MQs)**

The advertisement says that As need a civil engineering qualification plus minimum five years’ experience; the intended implication being that people who lack these will not be considered, so should not apply. MQs are generally based on education and experience. However, educational MQs may exclude some minorities, while length of experience may exclude women who tend to take more career breaks. Hence, in the USA, MQs may be challenged legally and so need careful justification. Buster, Roth and Bobko (2005) described elaborate systems of panels of experts, discussions and rating schedules for setting MQs. (As opposed to setting an arbitrary MQ, or using the ‘one we’ve always used’, or the ‘one everyone uses’.) For example, the experts might be asked to ‘bracket’ the MQ; if it is suggested that three years’ experience is
needed, then ask the experts to consider two and four years as well, just to make sure three years really is the right amount. Buster et al. noted that MQs should define the ‘barely acceptable’ applicant, so as to weed out ‘no hopers’. They suggest that MQs have tended to be set unnecessarily high, making recruitment difficult, and possibly excluding too many minority persons.

**Background investigation aka positive vetting**

AFs contain the information As choose to provide about themselves. Some employers make their own checks on As, covering criminal history, driving record, financial and credit history, education and employment history, possibly even reputation and lifestyle. Background checking is rapidly growing in popularity in the USA, from 51% employers in 1996 to 85% in 2007 (Isaacson et al. 2008), possibly driven by several high-profile cases where CEOs have been caught falsifying their CVs. In Britain, background investigations are recommended for childcare workers and used for government employees with access to confidential information (known as positive vetting). The Criminal Records Bureau was set up to supply information on criminal records of people applying for work which gives access to children. Presently, there is little or no research on whether background checks succeed in selecting ‘good’ employees and rejecting unsuitable ones. Isaacson et al. compared As who failed a background check with those who passed and found those who failed scored slightly higher on tests of risk taking. The closest they could get to work performance was a realistic computer simulation of manufacturing work, where the failed group worked slightly faster, but slightly less well. Roberts et al. (2007) report a long-term follow-up of a New Zealand cohort of 930 26-year-olds, which found no link between criminal convictions before age 18, and self-reported counterproductive behaviour at work. (Counterproductive behaviour is discussed in detail in Chapters 7 and 12.)

**Structured questioning**

Internet application systems can be structured to include qualifying (or disqualifying) questions at the beginning. People who lack necessary expertise or experience, or who are not eligible to work in the USA, or who have criminal records, are speedily eliminated. This saves time for both applicant and employer. (Politer employers tell As they have little chance of success and ask if they wish to proceed.) These systems can also screen out As who, for instance, are unwilling to work shifts, wear uniform or smile all the time.

**Internet tests**

Some employers are replacing their conventional paper AFs with short tests completed over the Internet. Some assess job knowledge; it is useful to screen out people who know little or nothing about subjects (e.g. Microsoft Excel) they claim expertise in. Testing can improve the whole selection process by
screening out, early on, As who lack the mental ability necessary for the job. (Chapter 6 will show that mental ability is generally a good predictor of work performance.) In conventional selection systems, tests are not normally used until the shortlist stage, by which time many able As may have been screened out. It is theoretically preferable to put the most accurate selection tests early in the selection process, but the cost of conventional paper-and-pencil testing tends to prevent this. Some Internet tests assess personality or fit. Formerly, HR inferred, for example, leadership potential from what As said they did at school or university. Some new systems assess it more directly by a set of standard questions. No research has been published on how well such systems work.

**Application scanning software**

Numerous software systems can scan applications and CVs to check whether they match the job’s requirements. This is much quicker than conventional sifting of paper applications by HR. The Restrac system is said to be able to search 300,000 CVs in 10 seconds. One of the best-known systems is Resumix, subsequently called Hiring Gateway, which started operations as long ago as 1988 and boasts many major employers as customers, including the American armed services. Resumix does more than just scan and file applications; it is also a job analysis system (Chapter 3). Resumix has a list of 25,000 KSAs (Knowledge Skill Ability). Employers use this list to specify the essential and desirable skills for their particular vacancy, and Resumix searches applications for the best match. MacFarland (2000) listed some of the competences Resumix uses, including leadership, budget planning and forecasting, performance assessment, staff education, performance management, performance evaluation and others. Resumix may save employers time and money, but may not make life all that easy for job As, judging from the number of consultancies and websites in the USA offering help on how to make Resumix applications. Automated sifting systems can eliminate bias directly based on ethnicity, age, disability or gender because they are programmed to ignore these factors. They will not necessarily ignore factors linked to ethnicity, disability, age or gender, such as sports and pastimes. Sifting software will do the job consistently and thoroughly, whereas the human sifter may get tired or bored and not read every application carefully.

Sifting electronically is not necessarily any more accurate. Accuracy depends on the decision rules used in sifting, which in turn depend on the quality of the research the employer has done. Reports (Bartram, 2000) suggested that some scanning systems do nothing more sophisticated than search for keywords. Once As realize this, they will try to include as many as possible. Resumix say their software does not use simple word counting, nor is there a list of ‘buzzwords’ that As can include to improve their chances of being selected. The system is described as ‘intelligent’ and as able to recognize the contextual meaning of words. The software is copyrighted and no details are released. There is an urgent need to know what application-sifting programs
actually do. Psychologists tend to be rather sceptical for one fairly simple reason. If these systems are doing something tremendously subtle and complex, where did the people who wrote them acquire this wisdom? There is no evidence that human application sifters are doing anything highly complex that software can model, nor is there any body of research on application sifting that has described any complex subtle relationships to put into software.

**RESEARCH AGENDA**

- The link between various application sifting systems and later work performance, for competence-based applications, background investigations, internet testing, application scanning and sorting software systems.
- Policy-capturing research on application scanning and sorting software systems.
- Investigation of how application sifting software operates, and what it can achieve

**Overview of selection methods**

The first column in Table 1.1 lists the main techniques used to select staff in North America, Europe and other industrialized countries. The list is divided into traditional and ‘new’, although most ‘new’ methods have been in use for some time. Table 1.1 also indicates which chapter contains the main coverage of each method.

**What is assessed in personnel selection?**

The short answer to this question is: ability to do the job. A much more detailed answer is provided by job analysis, which lists the main attributes successful employees need (see Chapter 3). Table 1.2 lists the main headings for assessing staff.

**Mental ability**

*Mental ability* divides into general mental ability (GMA or ‘intelligence’), and more specific applied mental skills, for example problem solving, practical judgement, clerical ability or mechanical comprehension. Some jobs also need sensory abilities: keen hearing, good balance, or good eye–hand co-ordination.

**Physical characteristics**

Some jobs need specific physical abilities: strength, endurance, dexterity. Others have more implicit requirements for height or appearance.
Table 1.1  Traditional and new(er) selection assessment methods.

<table>
<thead>
<tr>
<th>Traditional methods</th>
<th>Chapter</th>
<th>Alternative names</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application form / CV / résumé</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Traditional interview</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>References</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>New(er) methods</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronic application</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Structured interview</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Peer rating</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Mental ability test</td>
<td>6</td>
<td>Aptitude test</td>
</tr>
<tr>
<td>Job knowledge test</td>
<td>6</td>
<td>Achievement test, trade test</td>
</tr>
<tr>
<td>Personality questionnaire</td>
<td>7</td>
<td>Personality inventory</td>
</tr>
<tr>
<td>Honesty test</td>
<td>7</td>
<td>Integrity test</td>
</tr>
<tr>
<td>Projective test</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Graphology</td>
<td>8</td>
<td>Handwriting analysis</td>
</tr>
<tr>
<td>Biodata</td>
<td>9</td>
<td>Weighted Application Blank</td>
</tr>
<tr>
<td>Assessment centre</td>
<td>10</td>
<td>Extended interview</td>
</tr>
<tr>
<td>Group exercise</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Simulation</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Emotional intelligence</td>
<td>11</td>
<td>Situational judgement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Social intelligence</td>
</tr>
<tr>
<td>Work sample test</td>
<td>11</td>
<td>Trainability test, in tray / basket</td>
</tr>
<tr>
<td>Physical ability test</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Drug use testing</td>
<td>11</td>
<td></td>
</tr>
</tbody>
</table>

Table 1.2  Seven main aspects of applicants assessed in selection.

Mental ability
Personality
Physical characteristics
Interests and values
Knowledge
Work skills
Social skills

Personality

Psychologists list from 5 to 30 underlying dispositions, or personality traits, to think, feel and behave in particular ways. An extravert person, for instance, likes meeting people and feels at ease meeting strangers. The employer may
find it easier to select someone who is very outgoing to sell insurance, rather than trying to train someone who is presently rather shy.

**Interests, values and fit**

Someone who wants to help others may find charity work more rewarding than selling doughnuts; someone who believes that people should obey all the rules all the time may enjoy being a traffic warden. People cannot always find work that matches their ideals and values, but work that does may prove more rewarding. ‘Fit’ means the A’s outlook or behaviour matches the organization’s requirements. These can be explicit: soldiers expect to obey orders instantly and without question. ‘Fit’ may be implicit: the applicant does not sound or look ‘right for us’, but there is not a written list of requirements, or even a list that selectors can explain to you.

**Knowledge**

Every job requires some knowledge: current employment law, statistical analysis, or something much simpler, such as how to use telephones or how to give change. Knowledge can be acquired by training, so it need not necessarily be a selection requirement. Mastery of higher-level knowledge may require higher levels of mental ability. Several types of knowledge are distinguished:

- **Declarative** – knowing that: London is the capital of Britain.
- **Procedural** – knowing how: to get from Heathrow to Piccadilly.
- **Tacit** – knowing how things really happen: when and where it is not safe to walk in London.

**Work skills**

The ability to do something quickly and efficiently: bricklaying, driving a bus, valuing a property, diagnosing an illness. Employers sometimes select for skills and sometimes train for them. Mastery of some skills may require levels of mental or physical ability not everyone has.

*Social skills* are important for many jobs and essential for some. They include, for instance, communication, persuasion, negotiation, influence and leadership and teamwork.

**Nature of the information collected**

Discussions of selection methods usually focus on the merits of personality questionnaires (PQs) or structured interviews, or work samples. They do not usually address the issue of what sort of information the method generates. Table 1.3 sorts selection methods by five qualitatively different types of information.
Self-report evidence

Self-report evidence is information that is provided by the applicant, in written or spoken form, on the AF, in the interview, and when answering PQs, attitude measures and biographical inventories. Some self-reports are free form or unstructured, for example, some interviews or AFs. Others are more structured, such as PQs, biodata or structured interviews. Some self-reports are fairly transparent, notably interviews and PQs. (Transparent in the sense that As will have little difficulty working out what inference will be drawn from what they say.) Other assessments may be less transparent, such as biodata or projective tests; As may find it less easy to decide what answer will be seen as ‘good’ or ‘poor’.

Self-report data have some compelling advantages in selection. It is generally very cheap and very convenient; As are present, and eager to please, so collecting information is easy. Self-report can also be justified as showing respect and trust for As. However, self-report also has a fundamental disadvantage in selection; As provide the information and the employer generally has no way of verifying it. Self-report has two other limitations: coaching and lack of insight. There are many books on how to complete job applications; career counselling services advise students what to say at interviews. The second problem is lack of self-insight. Some As may genuinely think they are good leaders or popular or creative, and incorporate this view of themselves into their application, PQ or interview. However, by any other criterion – for example, test, others’ opinion and achievement – they lack the quality in question. This issue has not been researched much, if at all, in the selection context. These problems make it important to confirm what As say about themselves by information from other sources.

### Table 1.3 Five categories of qualitatively different information obtained by selection tests.

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self</td>
<td>Information provided by the applicant. Application form, including online application, T&amp;E rating, biodata, personality questionnaire, honesty test, projective test, interest questionnaire, interview.</td>
</tr>
<tr>
<td>Reported</td>
<td>Information provided by other people about the applicant. References, peer rating.</td>
</tr>
<tr>
<td>Demonstrated a) Test</td>
<td>The applicant performs a task or demonstrates a skill. Work sample, mental ability test, job knowledge test, physical ability test.</td>
</tr>
<tr>
<td>b) Behavioural</td>
<td>The applicant has obtained a qualification, or made a recorded achievement. Group exercise, behavioural test.</td>
</tr>
<tr>
<td>Recorded</td>
<td>The applicant has obtained a qualification, or made a recorded achievement. Graphology, drug use testing, polygraph, psychophysiology, voice stress analysis.</td>
</tr>
<tr>
<td>Involuntary</td>
<td>Graphology, drug use testing, polygraph, psychophysiology, voice stress analysis.</td>
</tr>
</tbody>
</table>
Other report evidence

Information about the applicant is provided by other people, through references or ratings. Other reports vary in the degree of expertise involved. Some require no special expertise, such as peer ratings and the letter of reference. Others use experts, generally psychologists.

Demonstrated evidence

The applicant performs a task or demonstrates a skill. Tests include GMA / intelligence tests, as well as tests of aptitudes, and specific knowledge (trade or job knowledge or achievement tests). These are real tests, with right and wrong answers. Demonstrated evidence also includes work samples, group exercises, simulations and other behavioural exercises typically included in assessment centres. Demonstration evidence has fewer limitations than self-reports or other reports. Ability tests cannot generally be faked. On the downside, demonstrated evidence tends to be more difficult and expensive to collect.

Recorded evidence

Some information used in selection can be characterized as recorded fact. The applicant has a good degree in psychology from a good university. The information is recorded and is verifiable. (Although some employers make the mistake of relying on self-report data, and fail to check As’ qualifications at source.) Work history can also provide a record of achievement, for example the applicant was CEO/MD of organization XYZ during a period when XYZ’s profits increased. Published work, grants obtained, inventions patented, prizes and medals, for instance, also constitute recorded evidence.

Demonstrated and recorded information tends to have an asymmetric relationship with self- or other reported information. Evidence that someone cannot do something disproves the statement by the applicant or others that he/she can. However, the converse is not true: being told that someone cannot do something does not disprove demonstrated or recorded evidence that he/she can. To this extent, demonstrated and recorded evidence is superior to self and other reported evidence, which implies that selectors should prefer demonstrated and recorded evidence.

Involuntary evidence

Some evidence is provided by As, but not from what they tell the assessors, nor from things they do intentionally. The classic example is the polygraph, which is intended to assess A’s truthfulness from respiration, heart rate and electrodermal activity, not from the answers that A gives. In fact, the polygraph is used to decide which of A’s self-reports to believe, and which to classify as untrue. Two other involuntary assessments are graphology
and drug-use testing. The former seeks to infer As’ characteristics from the form of their handwriting, not from its content. Drug-use testing assumes that drug use can be more accurately detected by chemical analysis than by self-report.

**Work performance**

Selection research compares a *predictor*, meaning a selection test, with a *criterion*, meaning an index of the worker’s work performance. The criterion side of selection research presents greater problems than the predictor side because it requires researchers to define good work performance. The criterion problem can be very simple when work generates something that can be counted: widgets manufactured per day or sales per week. The criterion problem can be made very simple if the organization has an appraisal system whose ratings can be used. The supervisor rating criterion is widely used because it is almost always available (in the USA), because it is unitary and because it is hard to argue with.

On the other hand, the criterion problem can soon get very complex, if one wants to dig a bit deeper into what constitutes effective performance. Questions about the real nature of work or the true purpose of organizations soon arise. Is success better measured objectively by counting units produced, or better measured subjectively by informed opinion? Is success at work unidimensional or multidimensional? Who decides whether work is successful? Different supervisors may not agree. Management and workers may not agree. The organization and its customers may not agree.

Objective criteria are many and various. Some are more objective than others; *training grades* often involve some subjective judgement in rating written work. *Personnel criteria* – advancement / promotion, length of service, turnover, punctuality, absence, disciplinary action, accidents, sickness – are easy to collect. Analyses of selection research (Lent, Aurbach & Levin, 1971) have shown that a subjective criterion – the global supervisor rating – was clearly the favourite, which was used in 60% of studies. Criteria of work performance are discussed in greater detail in Chapter 12.

**Fair employment law**

Most people know it is against the law to discriminate against certain classes of people when filling vacancies. These protected classes include women, ethnic minorities and disabled people. Most people think discrimination means deciding not to employ Mr Jones because he is black or Ms Smith because she is female. Direct discrimination is illegal, but is not the main concern in personnel selection. The key issue is indirect discrimination or *adverse impact*. Adverse impact means the selection system results in more majority persons getting through than minority persons. For example, some UK employers sift out As who have been unemployed for more than six months on the argument that they will have lost the habit of working. The
CRE argued that this creates adverse impact on some ethnic minorities because their unemployment rates are higher. Adverse impact assesses the effect of the selection method, not the intentions of the people who devised it. Adverse impact means an employer can be proved guilty of discrimination, by setting standards that make no reference to ethnicity or gender. Adverse impact is a very serious matter for employers. It creates a presumption of discrimination, which the employer must disprove, possibly in court. This will cost a lot of time and money, and may create damaging publicity. Selection methods that do not create adverse impact are therefore highly desirable, but unfortunately not always easy to find. Fair employment issues are discussed in detail in Chapter 13.

Current selection practice

Surveys of employers’ selection methods appear quite frequently, but should be viewed with some caution. Return rates are often very low: Piotrowski and Armstrong (2006) say 20% is normal. There is also the grey (and black) side of selection. Some methods are not entirely legal or ethical, so employers are unlikely to admit to using them. Rumours suggest that some employers gain unauthorized access to criminal records by employing former police officers or use credit information to assess As. There are even rumours of secret databases of people to avoid employing because they are union activists or troublemakers. Many organizations forbid the use of telephone references, but Andler and Herbst (2002) suggest many managers nevertheless both ask for them and provide them.

Selection in Britain

Table 1.4 presents two recent UK surveys, by IRS (Murphy, 2006) and the Chartered Institute of Personnel and Development (CIPD, 2006), covering the service, manufacturing and production, and public sectors. Table 1.4 confirms earlier UK surveys, showing that most UK employers are still using interviews of various types, that most still use references, that most use tests at least some of the time, but less frequently online. Only half use assessment centres or group exercises, while biodata are very rarely used. Neither survey gives any information about return rate.

Graduate recruitment

Keenan (1995) reported a survey of UK graduate recruitment. At the screening stage, employers use AFs, interview and reference; for the final decision, all employers use the interview again, and nearly half use assessment centres. Clark (1992) surveyed British executive recruitment agencies, used by many employers to fill managerial positions. They all used interviews; most (81%) used references; nearly a half (45%) used psychological tests; they rarely used biodata or graphology.
University staff

Foster, Wilkie and Moss (1996) confirmed that staff in British universities are still selected by AF, reference and interview, and that psychological tests and assessment centres are virtually never used. Nearly half of Foster et al.’s sample said they used biodata, but had probably confused it with the conventional AF. Most universities, however, do use a form of work sample test – they ask the applicant to make a presentation about their research.

Small business

Most surveys look at large employers, who have specialized HR departments who know something about selection. One-third of the British workforce
however work for small employers, with fewer than 10 staff, where HR expertise may be lacking. Bartram et al. (1995) found that small employers rely on interview at which they try to assess As’ honesty, integrity and interest in the job, rather than their ability. One in five use work samples or tests of literacy and numeracy; a surprising one in six use tests of ability or aptitude. Bartram characterized small employers’ approach to selection as ‘casual’.

Selection in the USA

Piotrowski and Armstrong (2006) report the most recent US survey of 151 companies in the Fortune 1000 (Table 1.5). US employers use AF, résumé and reference check virtually without exception. Half used ‘skills testing’ and a substantial minority used personality tests and biodata. A few employ drug-use testing. Pietrowski and Armstrong did not enquire about use of interviews.

Chapman and Webster (2003) reported a survey of present and intended use of new technologies in selection. Presently, employers sift paper application, use phone interviews (but not for low-level jobs), face-to-face interviews in the preliminary or sifting phase. In future, they expect to use keyword searching, computerized scoring of AFs, IVR, online mental ability tests and videoconferencing. But, when it comes to the final decision, most employers do not envisage much change, except more use of video conferencing.

Reasons for choice

One survey (Harris, Dworkin & Park, 1990) delved a little deeper and asked why personnel managers choose or do not choose different selection methods. Factors of middling importance were fakability, offensiveness to applicant

<table>
<thead>
<tr>
<th>Table 1.5 Survey of selection methods used by 151 companies in the Fortune 1000 in the USA.</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Yes</td>
</tr>
<tr>
<td>Résumé</td>
</tr>
<tr>
<td>Application form</td>
</tr>
<tr>
<td>Reference</td>
</tr>
<tr>
<td>Skills testing</td>
</tr>
<tr>
<td>Biodata</td>
</tr>
<tr>
<td>Personality</td>
</tr>
<tr>
<td>Honesty</td>
</tr>
<tr>
<td>Violence potential</td>
</tr>
<tr>
<td>Background</td>
</tr>
<tr>
<td>Online pre-employment check</td>
</tr>
<tr>
<td>Drug-use testing</td>
</tr>
</tbody>
</table>

Data from Piotrowski & Armstrong (2006).
and how many other companies use the method. Interviews, although very widely used, were recognized not to be very accurate, as well as easy to fake. Harris et al. suggest that personnel managers are aware of the interview’s shortcomings, but continue using it because it serves other purposes besides assessment. Terpstra and Rozell (1997), by contrast, asked personnel managers why they did not use particular methods. Some they did not think useful: structured interviews and mental ability tests. Some they had not heard of: biodata. They did not use mental ability tests because of legal worries. Wilk and Cappelli (2003) tried to discover why employers put more or less effort into selection. They showed that employers use more selection tests when the job pays more, when it has longer training and when skill levels are rising. These data suggest that employers are behaving rationally; the more workers cost in pay and training, the more carefully they are selected, and the more skill levels are rising, the more carefully workers are selected. Muchinsky (2004) notes that the most common question managers ask about selection tests are ‘How long will this take?’ and ‘How much will it cost?’ not ‘How accurate is it?’.

In Europe

European countries favour a social negotiation perspective on selection, which emphasizes employee rights, applicant privacy and expectation of fair and equitable treatment. Salgado and Anderson (2002) conclude that MA tests are now more widely used in Europe than in the USA. The most recent comprehensive survey of European practice remains the Price Waterhouse Cranfield survey from the early 1990s (Dany & Torchy, 1994), which covers 12 Western European countries and nine methods. Table 1.6 reveals a number of interesting national differences:

• The French favour graphology but no other country does.
• AFs are widely used everywhere except in The Netherlands.
• References are widely used everywhere but less popular in Spain, Portugal and The Netherlands.
• Psychometric testing is most popular in Spain and Portugal and least popular in West Germany and Turkey.
• Aptitude testing is most popular in Spain and The Netherlands and least popular in West Germany and Turkey.
• Assessment centres are not used much but are most popular in Spain and The Netherlands.
• Group selection methods are not used much but are most popular in Spain and Portugal.

Further afield

Less is known about selection in other parts of the world. Recent surveys of New Zealand (Taylor, Keelty & McDonnell, 2002) and Australia (Di Milia,
2004) find a very similar picture to Britain; interview, references and application are virtually universal, with personality tests, ability tests and assessment centres used by a minority, but gaining in popularity. Arthur et al. (1995) describe selection in Nigeria and Ghana; interviews were nearly universal (90%), references widely used (46%); paper-and-pencil tests are less frequently used, as were work samples (19%) and work simulations (11%). Ryan et al.’s (1999) survey covered no less than 20 countries, although some samples are rather small. Mental ability tests are used most in Belgium, The Netherlands and Spain, and least used in Italy and the USA. Personality tests are used most in Spain, and least used in Germany and the USA. Projective tests are used most in Portugal, Spain and South Africa, and least used in Germany, Greece, Hong Kong, Ireland, Italy and Singapore. Drug tests are used most in Portugal, Sweden and the USA, and least used in Italy, Singapore and Spain. Ryan suggested that the data confirmed a prediction from Hofstede’s (2001) discussion of national differences in attitudes to work: countries high in uncertainty avoidance (Box 1.1) use more selection methods, use them more extensively and use more interviews. Huo, Huang and Napier (2002) surveyed 13 countries including Australia, Canada, China, Indonesia, Taiwan, Japan, South Korea, Mexico, the USA and Latin America. They found that interviews are very widely used, but less so in China and South Korea. Some countries including Mexico, Taiwan and China base selection partly on connections (school, family, friends, region or government). Selection in Japan emphasizes ability to get on with others, possibly because Japanese employers traditionally offered people lifelong employment.

Table 1.6 The Price Waterhouse Cranfield survey of selection methods in 12 countries (Dany & Torchy, 1994). Percentage of employers using method.

<table>
<thead>
<tr>
<th></th>
<th>AF</th>
<th>IV</th>
<th>Psy</th>
<th>Gph</th>
<th>Ref</th>
<th>Apt</th>
<th>AC</th>
<th>Grp</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>97</td>
<td>71</td>
<td>46</td>
<td>1</td>
<td>92</td>
<td>45</td>
<td>18</td>
<td>13</td>
</tr>
<tr>
<td>Ireland</td>
<td>91</td>
<td>87</td>
<td>28</td>
<td>1</td>
<td>91</td>
<td>41</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>France</td>
<td>95</td>
<td>92</td>
<td>22</td>
<td>57</td>
<td>73</td>
<td>28</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Portugal</td>
<td>83</td>
<td>97</td>
<td>58</td>
<td>2</td>
<td>55</td>
<td>17</td>
<td>2</td>
<td>18</td>
</tr>
<tr>
<td>Spain</td>
<td>87</td>
<td>85</td>
<td>60</td>
<td>8</td>
<td>54</td>
<td>72</td>
<td>18</td>
<td>22</td>
</tr>
<tr>
<td>Germany</td>
<td>96</td>
<td>86</td>
<td>6</td>
<td>6</td>
<td>66</td>
<td>8</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>Netherlands</td>
<td>94</td>
<td>69</td>
<td>31</td>
<td>2</td>
<td>47</td>
<td>53</td>
<td>27</td>
<td>2</td>
</tr>
<tr>
<td>Denmark</td>
<td>48</td>
<td>99</td>
<td>38</td>
<td>2</td>
<td>79</td>
<td>17</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Finland</td>
<td>82</td>
<td>99</td>
<td>74</td>
<td>2</td>
<td>63</td>
<td>42</td>
<td>16</td>
<td>8</td>
</tr>
<tr>
<td>Norway</td>
<td>59</td>
<td>78</td>
<td>11</td>
<td>0</td>
<td>92</td>
<td>19</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Sweden</td>
<td>n.a.</td>
<td>69</td>
<td>24</td>
<td>0</td>
<td>96</td>
<td>14</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Turkey</td>
<td>95</td>
<td>64</td>
<td>8</td>
<td>0</td>
<td>69</td>
<td>33</td>
<td>4</td>
<td>23</td>
</tr>
</tbody>
</table>

Methods: AF = application form; IV = interview panel; Psy = psychometric testing; Gph = graphology; Ref = reference; Apt = aptitude test; AC = assessment centre; Grp = group selection methods.
Asking applicants

All the surveys discussed so far ask HR how they select. Billsberry (2007) presented 52 UK accounts of selection procedures by those on the receiving end. The accounts amply confirm the hypothesis that some of the 80% of the employers who do not reply to surveys have something to hide. Applicants describe rudeness, unprofessional behaviour, blatant lying, obvious bias and sexual harassment. The most generally favoured form of assessment seems to be the interview, often conducted very incompetently. Billsberry’s data suggested that a large survey of job As is an urgent necessity to find how many employers are behaving badly towards As. Surveys of As might also offer a second set of data on the use of selection methods or at least those visible to As.

Box 1.1 Uncertainty avoidance

Uncertainty avoidance means organizations do not like unpredictable situations, and maintain predictability by adhering to formal procedures and rules. Countries that tend to be high in uncertainty avoidance include Greece and Portugal, while countries low in uncertainty avoidance include Singapore.

RESEARCH AGENDA

- Employers’ reasons for choosing selection methods
- Information from applicants about use of selection methods

Key points

In Chapter 1 you have learned the following.

- Employees vary greatly in value, so selection matters.
- How employees are recruited may be linked to turnover.
- Deciding which application to proceed with and which to reject is called sifting and is often done inefficiently or unfairly.
- Sifting can be improved by T&E ratings and careful setting of MQs.
- Conventional paper application methods can be improved.
- The Internet may greatly change the application process.
- Sifting software is something of an unknown quantity.
- Selection uses a range of tests to assess a range of attributes.
- Information used in selection divides into five main types.
- Selection methods must conform with fair employment legislation.
- The problem with fair employment is not deliberate or direct discrimination, but adverse impact, meaning the method results in fewer women or
minority persons being successful. Adverse impact will create problems for the employer, so should be avoided if possible.

- Selection in developed countries follows broadly similar patterns with some local variations.

**Key references**

Bartram (2000) discusses the role of the Internet in recruitment and selection.

Bertrand and Mullainathan (2004) describe discrimination in selection in the USA.

Billsberry (2007) presents 52 accounts of how applicants experienced selection.

Buster et al. (2005) describe a system for setting minimum qualifications.

Chapman and Webster (2003) review the likely impact of ‘new technology’ on selection.

Dany and Torchy (1994) describe the Cranfield Price Waterhouse study, which describes selection methods in 12 European countries.

Davison and Burke (2000) review research on gender bias in application sifting.


McKinney et al. (2003) describe how information on college grades is used in sifting.

Ryan et al. (1999) describe selection methods in 20 countries, including the USA and the UK.

**Useful websites**

- checkpast.com, A (US) background checking agency.
- factsfinder.com, Another (US) background checking agency.
- hrzone.com, offers advice on range of HR issues in USA
- incomesdata.co.uk, Income Data Services, UK company that reports interesting research on HR issues, including surveys of selection tests.
- siop.org, (US) Society for Industrial and Organisational Psychology includes details of conferences and The Industrial/Organisational Psychologist.