Self-report techniques

Psychologists aim to find out about behaviour. One way to do this is to conduct experiments; we have also looked at one non-experimental method – observations. Another non-experimental method or technique is to ask people questions about their experiences and/or beliefs. These are called self-report methods (because the person is reporting their own thoughts/feelings), and include questionnaires and interviews. A **questionnaire** can be given in a written form or it can be delivered in real-time (face-to-face or on the telephone) in which case it is called an **interview**.

*A questionnaire or interview can be a **research method** or a **research technique**.*

The aims of a study may be to find out about smoking habits in young people. The researcher would design a questionnaire to collect data about what people do and why. In this case the questionnaire is the research method.

The aims of a study might be to see if children who are exposed to an anti-smoking educational programme have different attitudes towards smoking than children not exposed to such a programme. The researcher would use a questionnaire to collect data about attitudes, but the analysis would involve a comparison between the two groups of children – an experimental study using a questionnaire as a research technique to assess the DV.

1 QUESTIONNAIRES

A questionnaire is a set of questions. It is designed to collect information about a topic or topics.

The two great strengths of questionnaires are:

1. You can collect the same information from a large number of people relatively easily (once you have designed the questionnaire, which is not so easy).
2. You can access what people think – observations and experiments rely on 'guessing' what people think and feel on the basis of how they behave. With a questionnaire you can ask people directly; whether they can, and do, give you truthful answers is another matter.

Designing questionnaires

Writing good questions

When writing questions there are three guiding principles:

- *Clarity*. Questions need to be written so that the reader (respondent) understands what is being asked. One way to do this is to operationalise certain terms. There should be no ambiguity.
- *Bias*. Any bias in a question might lead the respondent to be more likely to give a particular answer (as in a leading question). The greatest problem is probably social desirability bias. Respondents prefer to select answers that portray them in a positive light rather than reflect the truth.
- *Analysis*. Questions need to be written so that the answers are easy to analyse. If you ask, 'What do you like most about your job?' or, 'What makes you feel stressed at work?' you may get 50 different answers from 50 people. These are called **open questions**. Alternatively one can ask **closed questions** where a limited range of answers is provided, such as listing 10 things people usually like about their work, or 10 sources of stress. Such closed questions are easier to analyse but respondents may be forced to select answers which don't represent their real thoughts or behaviour.

Writing good questionnaires

A good questionnaire should contain good questions. Some other things to consider when designing a good questionnaire are:

- *Filler questions*. It may help to include some irrelevant questions to distract the respondent from the main purpose of the survey. This may reduce demand characteristics.
- *Sequence for the questions*. It is best to start with easy ones, saving questions that might make someone feel anxious or defensive until the respondent has relaxed.
- *Sampling technique*, i.e. how to select respondents. Questionnaire studies often use stratified or quota sampling (see page 108).
- *Pilot study*. The questions can be tested on a small group of people. This means the questions can later be refined in response to any difficulties encountered.

KEY TERMS

Closed questions Questions that have a range of answers from which respondents select one; produces quantitative data. Answers are easier to analyse than those for open questions.

Interview A research method or technique that involves a face-to-face, 'real-time' interaction with another individual and results in the collection of data.

Open questions Questions that invite the respondents to provide their own answers rather than select one of those provided. Tend to produce qualitative data.

Questionnaire Data are collected through the use of written questions.

Structured interview Any interview in which the questions are decided in advance.

Unstructured interview The interview starts out with some general aims and possibly some questions, and lets the interviewee's answers guide subsequent questions.

Examples of open questions

1 What factors contribute to making work stressful?
2 How do you feel when stressed?

Examples of closed questions

1 Which of the following makes you feel stressed? (You may tick as many answers as you like.)

☐ Noise at work ☐ Lack of control
☐ Too much to do ☐ Workmates
☐ No job satisfaction

2 How many hours a week do you work?

☐ 0 hours ☐ Between 11 and 20 hours
☐ Between 1 and 10 hours
☐ More than 20 hours

3 *Likert scale*

Work is stressful:
☐ Strongly agree ☐ Agree ☐ Not sure
☐ Disagree ☐ Strongly disagree

4 How much stress do you feel? (Circle the number that best describes how you feel.)

At work:
A lot of stress 5 4 3 2 1 No stress at all
At home:
A lot of stress 5 4 3 2 1 No stress at all
Travelling to work:
A lot of stress 5 4 3 2 1 No stress at all

5 Forced choice question

A The worst social sin is to be rude
B The worst social sin is to be a bore

11. DESIGNING QUESTIONNAIRES

DO NOT make the questionnaire too long, a few relevant questions will give a better response rate.

DO NOT use vague terms that will result in imprecise answers.

DO NOT use technical terms that may not be understood.

DO NOT ask personal or embarrassing questions that may cause offence or lead to untruthful responses.

DO NOT ask leading questions, they will merely produce the answer you expect.

DO NOT use ambiguous terms that have different meanings for different people.

DO NOT make assumptions about behaviour.

DO NOT have insufficient categories that do not provide realistic options.

DO NOT have overlapping categories.

DO NOT ask double questions that require more than one answer.

NEWSPAPER READERSHIP SURVEY

I am an A level Sociology student researching newspaper readership for my coursework project. Please would you help me by answering the following questions by ticking in the appropriate box.

Questions	Answers
1. Do you read a daily paper regularly?	☐ Y ☐ N
2. Have you bought a newspaper today? If 'no' go to question 4	☐ Y ☐ N
3. Was it a broadsheet or tabloid?	☐ B ☐ T
If tabloid Did you buy it for the page 3 pictures?	☐ Y ☐ N
4. Do you think tabloids are easier to read because of the size of the pages?	☐ Y ☐ N
5. Which sections of the paper do you read?	☐ domestic news ☐ foreign news ☐ entertainment ☐ sport
6. What quality Sunday paper do you read? (e.g. *Times, Telegraph, Observer, Independent*)	Write in ———
7. Do you read the paper at breakfast or in the evening?	☐ B ☐ E
Now some questions about yourself	
8. Which age group do you come in?	☐ 15–30 ☐ 30–45 ☐ 45–60 ☐ 60+
9. Are you married or living with a partner?	

DO have an introduction to explain who is carrying out the study and why.

DO give instructions on how to complete the questionnaire.

DO use funnelling to avoid asking irrelevant questions.

DO have a clear layout for ease of recording and data analysis.

DO use multiple choice answers where more than one answer is possible.

DO use open-ended questions, particularly if you cannot anticipate the answer.

DO use prompts if appropriate.

DO lead the respondent through the questions and ask personal questions last.

DO phrase the questions in the least threatening way.

DO keep all the questions short and simple.

Ethics and interviews

Openness and honesty are key ethical guidelines. The interviewer should state who they are, what the research is about and what they intend to do with the data. This is essential for informed consent (Allmark *et al.*, 2009).

Even when informed consent is given, participants cannot be sure where the interview is going. This is especially true of unstructured interviews which sometimes go into unanticipated areas. Participants should be told that they can end the interview at any time. This is particularly important when the interview covers sensitive areas such as bereavement or domestic violence. Ethical guidelines state that participants should be protected from emotional harm. At signs of stress and discomfort, the interviewer should ask if they wish to continue.

Ethical guidelines state that privacy and confidentiality are essential. It must be made clear to participants that their privacy will be protected, that they will remain anonymous, and that all information they provide will be confidential. This can raise problems. If, for example, the interviewee states that they intend to commit a crime, should this be reported to the police? This is a difficult decision for the interviewer.

As part of their training, interviewers are advised not to take sides. However, some feminist interviewers reject the idea of a 'neutral interviewer'. They argue that women should be interviewed by women, that the interviewer should express sympathy and understanding based on shared experience and, where possible, be on the same side as the interviewee.

Focus groups raise particular ethical problems. The moderator should make sure that all participants have a chance to be heard. They should, if possible, make sure that all questions are suitable for a group setting and won't be embarrassing or hurtful. Focus groups raise particular problems for confidentiality and privacy. Everything that is said is shared. The moderator can request, but not ensure, that identities and what is said remain within the group.

Applying the standard ethical guidelines to online interviews has particular problems. For example, privacy and confidentiality cannot be guaranteed in cyberspace. Alan Bryman (2012) reaches the following conclusion. The 'venues' he refers to include personal email sites, online chat rooms, message boards, blogs and discussion groups where the public and the private are sometimes blurred. 'The more the venue is acknowledged to be public, the less obligation there is on the researcher to protect anonymity of individuals using the venue, or to seek their informed consent.'

Advantages and disadvantages of interviews

Structured interviews – All pps asked the exactly same questions + timings. NO FOLLOW UP OR PROMPTS

Advantages

- Quantifiable data.
- Comparable data.
- Usually faster and less costly than other types of interviews.
- Less chance of interviewer bias and social desirability effects.
- More reliable.

Disadvantages

- Allow only limited responses.
- Impose researcher's concerns and priorities on participants.

Semi-structured interviews – All pps have Standardised questions, can ask follow up q.

Advantages

- Some of the same advantages as structured interviews.
- In addition, allows interviewer to clarify and probe and the participant to develop their responses.
- Compared to structured interviews, can add depth and detail.

Disadvantages

- Non-standard interviews.
- As a result the data are not directly comparable.

Unstructured interviews – No set questions, about a topic.

Advantages

- Greater involvement of participants.
- Allows them more freedom to express themselves and to direct the interview into areas they see as important.
- More likely to reveal meanings and to produce valid data.
- Can be more suitable for sensitive individuals and sensitive topics.

3

Disadvantages

- Interviewer bias and social desirability effects more likely.
- Comparable data less likely.

Focus group interviews – In a small group, can reply to each other

Advantages

- Shows how people make sense of things and develop a shared viewpoint in a group context.
- When focus group members have experiences in common this can encourage discussion.
- In particular, sensitive experiences in common can sometimes lead to rich and valid data.

Disadvantages

- Social desirability effects may be strong in a group context.
- Not clear whether agreement between the participants reflects shared beliefs or group pressure.

Email interviews – via email, can be over months

Advantages

- Relaxed setting at home.
- Time to provide considered answers.
- Suitable for people with speech difficulties.
- Can be suitable for sensitive issues.
- Inexpensive and efficient.

Disadvantages

- Lack of immediacy.
- Representative samples unlikely.
- No body language or verbal emotional expression.

Key terms

Structured interview A questionnaire which is read out and filled in by the interviewer.

Semi-structured interview Similar to a structured interview, but the interviewer is allowed to probe with additional questions.

Unstructured interview Few, if any, pre-set questions, though researchers usually have certain topics they wish to cover.

Focus groups A group discussion guided by a moderator.

Moderator An interviewer who guides focus group discussions.

Interviewer bias The effect that the interviewer has on the participant's answers.

Social desirability effect The desire of the interview participant to reflect in their responses what is generally considered to be the right way to behave.

Non-directive interviewing An interviewing technique which seeks to avoid leading participants to answer in particular ways.

Rapport A friendly, trusting and understanding relationship.

Summary

1. There are various types of interviews, each with their advantages and disadvantages.
2. To a greater or lesser extent, all interviews are influenced by interviewer bias and social desirability effects.
3. Positivists prefer the quantitative data produced by structured interviews
4. Interpretivists prefer the qualitative data produced by unstructured interviews
5. The standard advice to interviewers is to avoid direction and develop rapport. However, on occasion, more active approaches may produce better results. Interviewers are advised that listening is a 'crucial skill'.
6. As with other research methods, ethical guidelines for interview participants include informed consent, confidentiality, privacy and protection from harm.

4

Evaluating self-report techniques

Self-report techniques can be evaluated as always, with reference to the key issues of validity, ethics and reliability.

VALIDITY

External validity

The external validity of questionnaires and interviews concerns the extent to which the findings can be generalised to other situations and other people. A major factor will be the representativeness of the sample used to collect data. For example, if a questionnaire collected data only from shoppers on a weekday morning in London it is not reasonable to generalise this to all people in the UK.

Internal validity

The internal validity of self-report techniques is related to the issue of whether the questionnaire or interview (or psychological test) really measures what it intended to measure.

There are several ways to assess this, the most common being:

- *Face validity*: Does the test *look* as if it is measuring what the researcher intended to measure. For example, are the questions obviously related to the topic?
- *Concurrent validity*: This can be established by comparing the current questionnaire or test with a previously established test on the same topic. Participants take both tests and then the two test scores are compared.

Improving validity

Validity is improved firstly by assessing the validity of a questionnaire or interview. If such measures of validity are low then:

External validity: Use a more appropriate sampling method to improve population validity because then the findings could be generalised to a wider population.

Internal validity: If one or more measures of internal validity are low, then the items on the questionnaire/interview/test need to be revised in order to produce a better match between scores on the new test and an established one.

ETHICAL ISSUES

- *Deception* about true research aims may sometimes be necessary in order to collect truthful data.
- *Psychological harm* Respondents may feel distressed by certain questions or having to think about certain sensitive topics.
- *Privacy* questions may be related to sensitive and personal issues, invading an individual's privacy.
- *Confidentiality* must be respected; names and personal details should not be revealed without permission. No personal data may be stored.

RELIABILITY

Internal reliability is a measure of the extent to which something is consistent within itself. For example, all the questions on an IQ test (which is a kind of questionnaire) should be measuring the same thing. This may not be relevant to all questionnaires, because sometimes internal consistency is not important, e.g. a questionnaire about day-care experiences might look at many different aspects of day care and its effects.

External reliability is a measure of consistency over several different occasions. For example, if an interviewer conducted an interview, and then conducted the same interview with the same interviewee a week later, the outcome should be the same – otherwise the interview is not reliable.

Reliability also concerns whether two interviewers produce the same outcome. This is called **inter-interviewer reliability**.

Assessing reliability

Internal reliability	*Split-half method:* A single group of participants all take a test once. Their answers to the test questions are divided in half. This is done by, for example, comparing all answers to odd number answers with all answers to even number answers. The individual's scores on both halves of the test should be very similar. The two scores can be compared by calculating a correlation coefficient (see page 114).
External reliability	*Test-retest method:* A group of participants is given a test or questionnaire or interview once and then again sometime later (when they have had the chance to forget it). The answers can be compared and should be the same. If the tests produce scores, these can be compared by calculating a correlation coefficient.

Improving reliability

It is possible to improve internal reliability by removing those items which are most inconsistent. The only way to do this is by trial and error – remove one test item and see if the split-half correlation coefficient improves. If it does, then the removed item should be permanently left out.

RESEARCH METHODS Qs No.3.19

1 *A group of students wishes to study mobile phone use in people aged 14–18. Why might it be preferable to:*
   a Conduct an interview rather than a questionnaire?
   b Conduct a questionnaire rather than an interview?
   c Collect quantitative data?
   d Collect qualitative data?

2 *Imagine instead that the students wished to find out about drug taking.* Answer the same questions a–d as in question 1.

3 For each of the studies described in 1 and 2, suggest **two** ethical issues that should concern the students and suggest how they might deal with these.

4 *In a study on self-esteem (a person's feeling about their own worth), the researcher constructs a scale to measure it. The scale consists of 30 questions.*
   a How could the researcher assess the reliability of the self-esteem scale?
   b *Why* would it matter if the reliability of the scale was poor?
   c How could the researcher improve the reliability of the scale?
   d How could the researcher assess the validity of the self-esteem scale?
   e Why would it matter if the validity of the scale was poor?

5

Comparing questionnaires and interviews

	Advantages	Weaknesses
Questionnaires *Respondents record their own answers.*	• Can be easily repeated so that data can be collected from large numbers of people relatively cheaply and quickly. • Respondents may feel more willing to reveal personal/confidential information than in an interview.	• Answers may not be truthful, for example because of leading questions and social desirability bias. • The sample may be biased because only certain kinds of people fill in questionnaires – literate individuals who are also willing to spend time filling in a questionnaire and returning it.
Structured interview *Questions predetermined.*	• Can be easily repeated because the questions are standardised. • Requires less interviewing skill than an unstructured interview. • More easy to analyse than an unstructured interview because answers are more predictable.	• The interviewer's expectations may influence the answers the interviewee gives (a form of investigator bias called **interviewer bias**). • Reliability may be affected by the same interviewer behaving differently on different occasions or different interviewers asking different questions (low inter-interviewer reliability).
Unstructured interviews *Interviewer develops questions in response to respondent's answers*	• More detailed information can generally be obtained from each respondent than in a structured interview. • Can access information that may not be revealed by predetermined questions.	• More affected by interviewer bias than structured interviews because in an unstructured interview the interviewer is developing new questions on the spot which might be less objective. • Requires well-trained interviewers, which makes it more expensive to produce reliable interviews compared with structured interviews which don't require specialist interviewers.

EXAM TIP

Often students write something like, 'The advantage of a questionnaire is that you can collect lots of data'. The problem with this is that it is not clear what 'lots of data' means. Compared to what? In fact you can also collect lots of data in an experiment or an interview.

- *You need to provide clear detail. (What is 'lots of data'? Why is there 'lots of data'?)*
- *You need to offer a comparison. (Compared to what? E.g. compared to an interview.)*

A good answer would say 'The advantage of a questionnaire is that you can collect data from more people than you would if using the interview method.'

DO IT YOURSELF

No.**3.13**

How daring are you?

Answer YES or NO to the questions below.

1 Do you get scared on fast roller coasters?
2 Are you scared of flying?
3 Would you rather read a good book than play a computer game?
4 Do you prefer staying in rather than going out?
5 Have you ever lied to your parents?
6 Do you use the internet every day?
7 Do you arrange your CDs in alphabetical order?
8 Have you ever played truth or dare?
9 Are you too shy to tell people what you really think?
10 Do you dislike answering questions in class?

If you answered yes to more than five questions above you're a bit of a pussycat.

- Have you got any criticisms of the questionnaire?
- Try assessing the internal and external reliability of the questionnaire, as well as its face validity.
- To assess concurrent validity you can compare the outcome with an established psychological test. For example, psychologists measure sensation-seeking using Zuckerman's (1994) Sensation Seeking Scale (you can take the test and get your score at: www.bbc.co.uk/science/humanbody/mind/surveys/sensation/).
- Rewrite the quiz to deal with your criticisms and try to improve reliability and validity.

RESEARCH METHODS Qs

No.**3.20**

1 Explain the difference between a structured and an unstructured interview.
2 Explain the difference between a questionnaire and an interview.
3 How can 'leading questions' be a problem in interviews or questionnaires?
4 Explain the difference between qualitative and quantitative data.
5 You have been asked to construct a questionnaire about peoples' attitudes towards smoking
   a Write **one** closed question that would collect quantitative data.
   b Write **one** open question that would collect qualitative data.
   c Write an example of a leading question for this questionnaire.
   d Explain how social desirability bias might affect the validity of the responses to your questionnaire.
   e Describe **one** advantage of using questionnaires to collect data in this study.
   f Describe **one** weakness of using questionnaires to collect data in this study.

KEY TERMS

Inter-interviewer reliability The extent to which two interviewers produce the same outcome from an interview.

Interviewer bias The effect of an interviewer's expectations, communicated unconsciously, on a respondent's behaviour.

WWW **Look at some other online questionnaires and psychological tests at www.queendom.com/ (claims to be the world's largest testing centre, tests and questionnaires on everything) and www.atkinson.yorku.ca/~psyctest/ (site providing access to psychological tests that can be downloaded and used by student researchers including dieting beliefs scale and self esteem scales).**

Quantitative data analysis

The information collected in any study is called 'data' or, more precisely a 'data set' (a set of items). Data are not necessarily numbers; they could be words used to describe how someone feels. Numerical data are described as **quantitative**, whereas data which are non-numerical are called **qualitative**. Once a researcher has collected data, it needs to be analysed in order to identify trends or to see the bigger picture. On this spread we will look at methods of **quantitative data analysis**. Qualitative data analysis is discussed on page 119.

These methods are sometimes referred to as 'descriptive statistics' because they are methods of describing quantitative data.

MEASURES OF CENTRAL TENDENCY

Measures of central tendency inform us about central (or middle) values for a set of data. They are 'averages' – ways of calculating a typical value for a set of data. An average can be calculated in different ways:

The **mean** is calculated by adding up all the numbers and dividing by the number of numbers.

- It makes use of the values of all the data in the final calculation.
- It can be misrepresentative of the data as a whole if there are extreme values.
- It cannot be used with nominal data (see below).

The **median** is the *middle* value in an *ordered* list.

- Not affected by extreme scores.
- Not as 'sensitive' as the mean because not all values are reflected in the median.

The **mode** is the value that is *most* common.

- Useful when the data are in categories, i.e. nominal data.
- Not a useful way of describing data when there are several modes.

EXAM TIP Many candidates find it hard to remember the link between 'measures of central tendency' and 'mean, median, mode'. One way to help you remember connections is to produce memorable pictures – the more outrageous the better!

***Nominal** – The data are in separate categories, such as grouping people according to their favourite football team (e.g. Liverpool, Inverness, Caledonian Thistle, etc.).*

***Ordinal** – Data are ordered in some way, for example asking people to put a list of football teams in order of liking. Liverpool might be first, followed by Inverness and so on. The 'difference' between each item is not the same, i.e. the individual may like the first item a lot more than the second, but there might only be a small difference between the items ranked second and third.*

***Interval** – Data are measured using units of equal intervals, such as when counting correct answers or using any 'public' unit of measurement. Many psychological studies use plastic interval scales where the intervals are arbitrarily determined, and we can't therefore know for certain that there are equal intervals between the numbers. However, for the purposes of analysis, such data may be accepted as interval.*

***Ratio** – There is a true zero point as in most measures of physical quantities.*

***NOIR** – an acronym to help remember the four levels of measurement of data:* nominal, ordinal, interval *and* ratio.

MEASURES OF DISPERSION

A set of data can also be described in terms of how dispersed or spread out the numbers are.

The easiest **measure of dispersion** to use is the **range**. Consider the data sets below:

3, 5, 8, 8, 9, 10, 12, 12, 13, 15 mean = 9.5 range = 12 (3 to 15)

1, 5, 8, 8, 9, 10, 12, 12, 13, 17 mean = 9.5 range = 16 (1 to 17)

The two sets of numbers have the same mean but a different range, so the range is helpful as a further method of describing the data. If we just used the mean, the data would appear to be the same. The range is the difference between the highest and lowest number.

There is a more precise method of expressing dispersion, called the **standard deviation**. This is a measure of the spread of the data around the mean. The standard deviations for the two sets of numbers above are 3.69 and 4.45 respectively. These can be calculated using a mathematical calculator.

	Advantages	Weaknesses
Range	Provides you with direct information. Easy to calculate.	Affected by extreme values. Doesn't take into account the number of observations in the data set.
Standard deviation	More precise measure of dispersion because all values taken into account.	May hide some of the characteristics of the data set (e.g. extreme values).

RESEARCH METHODS Qs No.3.8

1 For each of the following sets of data (data sets)
- a calculate the mean,
- b calculate the median,
- c calculate the mode,
- d state which of the three measures of central tendency would be most suitable to use and why.

Data set 1: **2, 3, 5, 6, 6, 8, 9, 12, 15, 21, 22**
Data set 2: **2, 3, 8, 10, 11, 13, 13, 14, 14, 29**
Data set 3: **2, 2, 4, 5, 5, 5, 7, 7, 8, 8, 8, 10**
Data set 4: **cat, cat, dog, budgie, snake, gerbil**

2 Why is it better to know about the mean and range of a data set rather than just the mean?

3 Explain why it might be better to know the standard deviation of a data set rather than the range.

4 Look at the following data sets. Which one do you think would have the *smaller* standard deviation?

Data set A: **2 2 3 4 5 9 11 14 18 20 21 22 25**
Data set B: **2 5 8 9 9 10 11 12 14 15 16 20 25**

5 There are three graphs on the right.
- a What can you conclude from Graph C?
- b Write a title that would be suitable for all three graphs.
- c Describe the *y* axis of all three graphs.

7

VISUAL DISPLAY

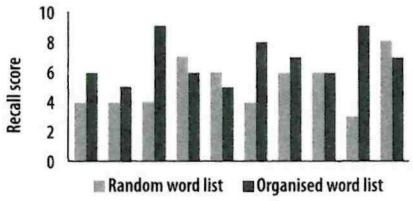
A picture is worth 1000 words! Graphs provide a means of 'eyeballing' your data and seeing the findings at a glance.

- **Tables** The numbers you collect are referred to as 'raw data' – numbers that haven't been treated in any way. These data can be set out in a table or summarised using measures of central tendency and range.
- **Bar chart** The height of the bar represents frequency. Shows data in categories but also suitable for numbers.
- **Line graph** As with a bar chart, the *y* axis represents frequency but, in this case, the values along the *x* axis must be continuous, i.e. data that have some implicit order such as numerical data but not categories of things such as favourite football teams.
- **Scattergram** A kind of graph used when doing a correlational analysis (see page 114).

Each of the graphs below presents the data collected in an experiment on memory and organisation (see 'DIY' on right). Only one of these graphs is useful, two of them are a waste of time – which is the useful one?

Graph A

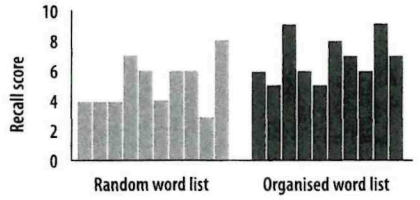
Participant number 1 in the random word group is placed next to participant number 1 in the organised word group. Students like to draw 'participant charts', *but they are totally meaningless*.



Graph B

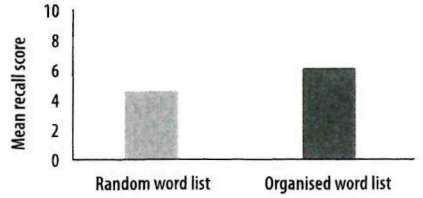
The findings from each participant are shown in this graph. They are grouped together so that you can see all the scores from participants in the random word group and all the scores from the participants in the organised word group.

This is *slightly better* than Graph A because we can just about tell that the random word list led to better recall – but a glance at the means (as in Graph C) shows this effortlessly.



Graph C

This graph shows the mean scores for each group. The findings are immediately obvious, which is the point of using a graph.



DO IT YOURSELF

No.**3.6**

Memory and organisation

In the days when psychology students had to do coursework, this was a top choice. On page 39 we described a study by Bower *et al.* (1969); this is an adaptation of that study. You can use the word lists below. The column of words on the left is organised in categories, whereas the column on the right shows the same words in random order.

Dogs	Hail	Squash
Labrador	Flowers	Coke
Beagle	Daffodil	Body
Boxer	Rose	Nose
Spaniel	Pansy	Foot
Fruit	Tulip	Toe
Apple	Instruments	Hand
Pear	Harp	Metal
Plum	Piano	Brass
Orange	Flute	Gold
Weather	Clarinet	Copper
Snow	Drinks	Iron
Rain	Water	
Sleet	Milk	

Pear	Piano	Brass
Beagle	Metal	Foot
Clarinet	Apple	Tulip
Hail	Body	Pansy
Rain	Fruit	Dogs
Drinks	Instruments	Sleet
Rose	Daffodil	Milk
Squash	Plum	Orange
Hand	Nose	Toe
Boxer	Weather	Snow
Iron	Copper	Flute
Coke	Labrador	Spaniel
Gold	Water	
Harp	Flowers	

Your task is to design a study using these words.

1. Write your own list of design decisions that need to be made, based on your experience of designing other studies. Ensure that you consider ethical issues carefully.
2. Write a fully operationalised hypothesis.
3. Conduct a pilot study to check your design and make any alterations to the design that are necessary.
4. Now collect your data (or, if this is not possible, invent a set of data).
5. Present the data you have collected in a
   - Table – show raw data, and *appropriate* measures of central tendency and dispersion.
   - Graph – draw an *appropriate* bar chart.
6. What conclusions would you draw from your study?

A graph should be simple. It should clearly show the findings from a study.

There should be a short but informative title.

The x axis must be labelled (x axis goes across the page, it's usually the IV).

The y axis is usually the DV or 'frequency' (y axis goes up vertically).

Always use squared paper if you are hand-drawing graphs.

KEY TERMS

Mean The arithmetic average of a group of scores. Takes the values of all the data into account.

Measure of central tendency A descriptive statistic that provides information about a 'typical' response for a data set.

Measure of dispersion A descriptive statistic that provides information about how spread-out a set of scores is.

Median The middle value in a set of scores when the scores are placed in rank order.

Mode The most frequently occurring score in a data set.

Qualitative Data that expresses the 'quality' of things – descriptions, words, meanings, pictures, texts and so on. Qualitative data cannot be counted or quantified but they can be turned into quantitative data by placing them in categories.

Quantitative Data that represent how much or how long, or how many, etc. there are of something; i.e. a behaviour is measured in numbers or quantities.

Quantitative data analysis Any means of representing trends from numerical data, such as measures of central tendency.

Range The difference between the highest and lowest score in a data set.

Standard deviation shows the amount of variation in a data set. It assesses the spread of data around the mean.

5. ANALYSING DOCUMENTS

	CONTENT ANALYSIS	THEMATIC ANALYSIS/SEMIOLOGY
Description	A **quantitative**, objective and systematic method for analysing the **frequency of**, or the amount of time and space devoted to certain themes, words or events. It involves creating a list of categories and counting how many times they occur in a given document.	A **qualitative** method which studies the **signs and symbols** in a document to find out the **implicit meanings**, e.g. a dove means more than a white bird, it also symbolises peace. Semiology seeks to discover the motives and meanings underlying the content of a document which have significance beyond its physical existence.
Uses	• **Measures** simple objective aspects of content, e.g. number of swear words on television after 9 p.m. • **Reliable** data • **Unobtrusive** and so does not influence people • **Easy** to find sources of data • Used to **test an hypothesis** • Findings have credibility • **Identifies** issues for further research • Makes **comparisons**	• The **hidden** becomes more apparent • **Uncovers** the ideologies and bias of the producers of the document • Aids a deeper **understanding** of the text • Analyses **advertisements** • Shows the formative **influence** on young people's lives of media sources • Focuses attention on the **symbolic nature** of language and signs
Problems	• **Subjectivity** when defining the categories and allocating the content to the appropriate category • **Time-consuming** (but computers can speed the process) • **Significance** of the document not explained • **Biased** interpretation of the results • **Snapshot** picture only • **Atheoretical** as it merely describes rather than attempts to explain the findings	• Makes **assumptions** about the meaning of the text • **Unreliable** as different researchers may produce very different accounts • **Impossible to falsify** an interpretation • **Worth** of competing interpretations impossible to judge • Assumes the reader is a **passive receiver** of messages • Representations can change, analysis can quickly become **out of date**
Examples of research	• **Glasgow University Media Group** (1976) – television news coverage of industrial relations issues by counting the verbs used to describe the actions of both sides • **Lobban** (1974) – portrayal of gender roles in children's reading schemes • **Tuchman** (1977) – on US television men outnumbered women by 3 to 1	• **McRobbie** (1978) – looked behind the content to identify the ideology of femininity communicated by '*Jackie*' magazine for teenage girls • **Hebdidge** (1979) – examined the music and dress of youth groups and interpreted them as a form of resistance to society • **Williamson** (1978) – Decoding Advertisements