



Effective Use of Psychological Terminology in Exams #3: Operationalisation, Triangulation, Generalisation and Methodology

This Factsheet has been written in response to examiner comments about the use of psychological terminology in exams. You might find it beneficial to refer to *Psychology Factsheet 200* and *Psychology Factsheet 212*, which will also help you to use psychological terminology effectively, as well as a range of Psychology Factsheets that focus on research methods. This Factsheet provides guidance on how to demonstrate your knowledge and understanding of specific terminology related to psychological research. Words in bold are explained in the glossary and the worksheet gives you the opportunity to apply what you have learned to exam style questions.

The examiner will expect you to be able to:

- Select psychological terms appropriately in relation to psychological research.
- Use psychological terminology effectively in relation to psychological research.
- Respond to psychological terms correctly in relation to psychological research.

Exam Hint: Top band candidates demonstrate an appropriate use of psychological terminology when discussing psychological research.

A. Introduction

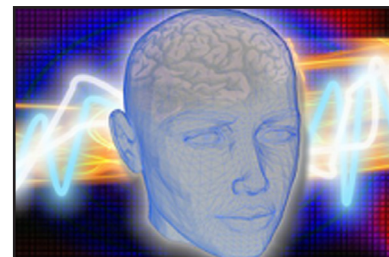
In order to achieve higher band marks in psychology exams you need to demonstrate an effective use of psychological terminology in relation to research studies. It is not enough to simply learn, retain and regurgitate details of research studies; you need to be able to discuss psychological research using appropriate psychological terminology.



Examiners Comment: Top-level exam answers demonstrate accurate and detailed knowledge of research studies as well as an effective use of specialist terminology.

B. Methodology

Psychologists carry out research studies in order to test **hypotheses** and develop theories. They use different types of **methodology** to collect data that can then be analysed in order to draw conclusions about some particular aspect of behaviour.



The main methodologies employed by psychologists are:

- Experiment
- Observation
- Correlation
- Case study
- Interview and questionnaire

Each of these methodologies has its own particular strengths and limitations that make it more or less appropriate for different types of research. For example, an experiment is a controlled research method that investigates cause and effect, often in an artificial setting. A well-known example of research using the experimental method to measure memory is Loftus & Palmer's (1974) study of eyewitness testimony using leading questions. The researchers manipulated the **independent variable (IV)** – the verb used in the leading question, to measure its effect on the **dependent variable (DV)** – the estimated speed of the car.

A case study, on the other hand, may combine observation and interview methodology in order to provide a rich source of **qualitative** data about an individual or group of individuals over a period of time.

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There are a number of well-known case studies in memory research such as [Milner's \(1966\)](#) study of HM and [Shallice and Warrington's \(1974\)](#) study of KF, both of which examine the effects of brain injury on memory. It would not be ethical to set up an artificial experiment to injury a person's brain in order to measure the effects on memory, so a case study is the most appropriate methodology to study this phenomena.

Examiner Comment: Stronger candidates demonstrate an understanding of why researchers have selected a particular methodology.

Examiner Comment: Weaker candidates use 'experiment' and 'methodology' interchangeably, which demonstrates a misunderstanding about terminology. An experiment is one type of methodology rather than a generic term to describe research more generally.

Milner found evidence of memory loss in his experiment with a brain-damaged patient; This demonstrates an incorrect use of terminology.

Milner found evidence of memory loss in his research with a brain-damaged patient; This demonstrates an appropriate use of terminology.

C. Operationalisation

It is important for researchers to be absolutely clear about what it is they are studying as well as how they intend to study it. For example, a psychologist might be interested in the effects of stress on health. They might



have an idea that high levels of stress will be detrimental to health and predict a negative correlation, meaning that as one variable goes up (stress levels) the other will go down (health).

However, the concepts of both stress and health are vague, so in order to be absolutely clear what it is they are studying, the psychologist will need to **operationalize** the two variables so that each one is defined explicitly.

Researchers have used various ways to measure the effects of stress on health. [Holmes and Rahe \(1970\)](#) devised a stress scale by assigning a numerical score to 43 life events. The higher an individual's score, the higher their stress levels. The health of the individuals was assessed by looking at their health records over a period of 12 months. So, Holmes and Rahe operationalized stress by quantifying life events to produce a stress score and they operationalized health by referencing each individual's medical records.

Later research measured stress according to hassles and uplifts. [Kanner \(1981\)](#) produced a list of 117 daily hassles and 135 uplifts. Individuals were asked which events they had experienced every month for ten consecutive months. They also took psychometric tests to measure psychological well-being. Kanner therefore operationalized the concepts of stress and health by making each variable **quantifiable** so that the numerical data could be analysed.

Other research has looked at the effect of a specific stressful event on health. For example, [Kiecolt-Glaser et al \(1984\)](#) investigated the effect of exam stress on immune functioning. Data from a low stress condition (one month prior to the exams) was compared with

data from a high stress condition (during the exams) using immune function blood tests. Stress was operationalized by time (prior to or during exams) and immune function was operationalized by measuring the number of T-cells in the student's blood.

So, let's imagine that a year 11 psychology student is interested in the effects of stress on the health of their peers. They firstly need to operationalize stress. This could be done by using a questionnaire to measure daily hassles, or life events, or by picking different dates in the academic year that are more or less stressful, for example the first week of term, mock exam week, final week of exams. They would then need to consider how to measure the health of their fellow students. This could be done by looking at school attendance records or by using interviews to ask students about their physical well-being. Once the variables have been fully operationalized, the student can decide on an appropriate methodology and design a hypothesis such as: 'Academic stress has an effect on student health'.

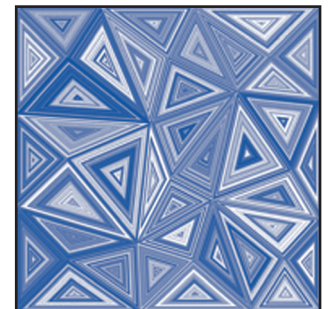
Exam Hint: No attempts at operationalisation are without their flaws. Top band students will both define and evaluate operationalisation.

D. Triangulation

The term **triangulation** has multiple meanings in psychology. It is used to describe a scenario where a third person is introduced to enhance communication between two individuals, creating a communication triangle, which facilitates greater understanding. Developmental psychologists suggest that triangulations are necessary to facilitate communication and other forms of cognitive and emotional development. An example of this would be a second parent supporting a first in terms of their child's development.

Triangulation in psychological research has a similar function in that it improves understanding. This has particular relevance in **qualitative** studies. Triangulation involves researchers incorporating two or more methods to explore the same concept. The aim is to facilitate a greater understanding than is possible with any one single method. Triangulation does not compensate for weaknesses in one method by introducing another, but instead adds a richness that can provide a more robust and comprehensive set of data than any single method alone. There are four main types of triangulation as first identified by [Denzin \(1978\)](#):

- Data triangulation.
- Researcher triangulation.
- Theoretical triangulation.
- Methodological triangulation.



Data triangulation is a method of examining different qualitative data from within the same method in order to explore its consistency. For example, this could involve measuring data at different points in time, or comparing data collected from different participants, or data from the same participants in both public and private settings. In this way, a richness of data collection is achieved.

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Researcher bias triangulation can involve using more than one researcher to conduct the study in the first place, for example using multiple observers, or it can mean that more than one researcher examines the findings of the study after it has been conducted. Each of these methods of researcher triangulation can help to eliminate **researcher bias** and/or highlight individual researchers' **blind spots**. This is particularly relevant in qualitative research, which is more open to interpretation than quantitative data.

The aim is not to seek agreement between researchers but to bring together multiple ways of perceiving and interpreting the data in order to add to the richness of the findings.



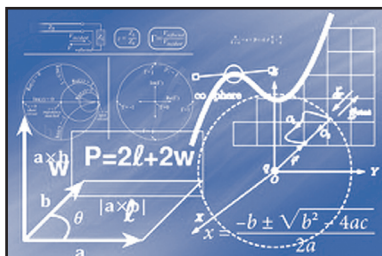
Methodological triangulation is a means of examining the consistency of findings generated by different data collection methods. For example, researchers may have collected both qualitative and quantitative data that reveal complementary aspects of the same phenomenon. Often the points where these data appear to differ are of the greatest interest to qualitative researchers as they raise questions that invite further examination, which in turn provide new insights.



Theoretical triangulation involves using two or more theoretical approaches to examine and interpret the data. While quantitative data can only be read in a limited number of ways, qualitative data is open to wide interpretation. The purpose of theoretical triangulation is to share interpretations from different perspectives, so adding to the richness of the data.

E. Generalisation

The population of the UK at the time of going to print in 2017 is over 65 million. The population of the USA is 323 million. The population of the world is estimated to be around 6 billion, a figure that has doubled since 1970. Relatively speaking, the number of participants involved in research studies is infinitesimal, and this has implications for the **generalisability** of research findings. Case studies such as **Milner's (1966)** study of HM and **Shallice and Warrington's (1974)** study of KF had only one participant each which raises the issue of generalisation. These participants suffered memory loss as a result of brain injury, but what about the millions of other people who weren't studied? How can we assume that they would be affected in the same way? One way is to gather additional data from other case studies. In this way, the result of **Shallice and Warrington's (1974)** study lends support to **Milner's earlier (1966)** study, as does every subsequent study of brain injury. This is an important elaboration of the evaluative point that examiners will be pleased to read.



Holmes and Rahe (1970) used a relatively large sample of 2,500 participants in their life events study, which suggests their findings could be more widely generalised than a study using less participants. However, the study was **androcentric** as all the participants were male making the results less generalizable to females. In addition, they were all American sailors meaning that the results might be less generalizable to males from other cultures or occupations. In effect, the results only tell us about male, American, sailors.



Exam Hint: You should be able to demonstrate your understanding of different types of triangulation and how they relate to particular research studies.

Kanner's (1981) longitudinal study into the effects of daily hassles had a participant sample of 100 white Californians, roughly half male and half female. This is a reasonable sample size for a psychological study with no **gender bias** suggesting that the results can be generalised more widely. However, there is a **culture bias** in the sample as they were white Californians as well as an **age bias** as all the participants were aged between 45 and 64.



Therefore, the findings cannot be generalised to individuals younger than 45 or older than 64, or to those from other cultures.

Kielcot-Glaser (1984) had a volunteer sample of 75 first year medical students. 49 were male and 26 were female. The results therefore tell us about first year medical students and there is a gender bias as the sample was two-thirds male and one-third female. The participants were also volunteers, a further bias that makes the findings less generalizable to the wider population of non-volunteers and non-medical students.

Exam Hint: The results of a case study can be said to lack generalisability due to low participant numbers. However, generalisability is improved when the results of similar studies are taken into consideration.

F. Conclusion

You will be expected to understand the concepts of operationalisation, triangulation and generalisation in relation to different types of methodology. Your understanding will be demonstrated through the correct use of psychological terminology. You may be expected to explicitly demonstrate your understanding of triangulation, for example, in an exam question that asks you to outline the different types. You might also be asked to define and exemplify the concept of operationalisation. Alternatively you may demonstrate your implicit understanding of specialist psychological terminology by using it appropriately, for example by elaborating issues relating to generalisability or methodology.

Examiner Comment: Stronger candidates discuss various elements of generalisability within research studies such as age, gender, culture and participant numbers.

Examiner Comment: Stronger candidates demonstrate their understanding of psychological terminology, both explicitly and implicitly.

Glossary

Age bias: research that leans towards a particular age range by using participants of that age which raises the issue of generalisability.

Androcentric: a bias towards males, for example by using an all male participant sample, which raises the issue of generalisability.

Blind spots: unconscious expectations or perceptions in the researcher which can lead to bias in qualitative research.

Correlation: a relationship or association between two variables.

Culture bias: a bias towards one culture, for example by using participants from one culture only, which raises the issue of generalisability.

Dependent variable: the thing that is measured by the researcher e.g. a numerical score.

Gender bias: research that leans towards a particular gender by using participants solely or mostly from one gender, which raises the issue of generalisability.

Generalisability: extent to which the findings can be applied to the wider population.

Hypotheses: prediction about the results of a study.

Independent variable: the thing that the researcher is interested in and that is manipulated in the research to measure its effects.

Methodology: approach to research such as observation, experiment etc.

Operationalize: a way of clearly defining the variables that are being examined in the research.

Qualitative: research data or methodology using non-quantifiable measures.

Quantifiable: turning information into numerical data that can be measured, analysed and compared.

Researcher bias: tendency of one individual researcher to conduct research or perceive findings a particular way, based on past experience, expectations or blind spots.

Triangulation: involves the use of two or more methods to explore qualitative research data in order to facilitate understanding.

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Worksheet: Operationalisation, Triangulation, Generalisation and Methodology

Name: _____

1. Describe the methodology used in one piece of memory research and the reasons that this was appropriate.

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2. Explain how stress and health were operationalized in one psychological study.

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3. Identify potential strengths and limitations in the way stress and health were operationalized in the study you have referenced.

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4. Outline the four types of triangulation with reference to qualitative research studies you are familiar with.

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5. Outline 2 or more issues affecting generalisability in a research study of your choice.

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