AS Revision 101

How to Evaluate a Psychological Study

How to use the GRAVE and SOSC techniques to evaluate a psychological experiment

The GRAVE Pneumonic

GENERALISABILITY
RELIABILITY
APPLICATION
VALIDITY
ETHICS

The term **generalisability** refers to the target population as a whole, and the sampling method used. You have to ask yourself, can the results be applied beyond the sample studied? Is the sample size decent enough? Factors to consider when evaluating the choice in sample include asking whether or not the subjects used were a "representative sample" and if the findings they produced from the experiment could be extended to the entire target population. The sampling method also requires evaluation, was it the right one to choose?

A study cannot be **reliable** if it is too difficult, or indeed impossible, to *replicate* (redo under the same conditions and using the same variables), because a reliable experiment is one which will constantly produce similar or identical results each time it is carried out. This should also be the case if someone else is to carry out the same study.

Studies are more useful if its findings can be used to help society in an everyday real-life **application**. A great example of this is the BBC One show Crimewatch, which reconstructs crime scenes, based on numerous studies which have shown the positive effect of a reconstruction in terms of memory and forgetfulness. Since using this method of reminding potential witnesses of what they have seen and how they can help, by allowing them to relive the experience, many crimes have been solved by people contacting the show and offering the police help with certain cases.

Validity refers to how well something measures what it is supposed to be measuring; how far it reflects reality. For example, in a survey, if someone is asked "Would you steal a ten pound note from your mother's purse?" you would most certainly expect people to answer "No" because this is what they believe the experiment wants to hear, and that is not necessarily their truthful answer. Therefore, their answers are not valid and shouldn't be included in findings, as they are hard to apply to the real world.

- ✓ **experimental validity** is the measure of how valid data is in the above situation, a study which is experimentally valid will have genuine data which has not been effected by subject's own perception of his or her actions/answers
- ✓ **ecological validity** is the measure of how valid the environment is in which a psychological study has taken place, for example, an experiment with ecological (or natural) validity have been done in a place where the subjects are in a natural environment of where the experiment should be for genuine data – often the best way to do this is to observe the subjects without them knowing, in order for their normal behaviour to occur, however, this may have ethical issues which prevent it from taking place

A good way of evaluating a study is to look at how **ethical** or unethical it is. This involves judging how moral or immoral the experiment was, and there are a number of criteria, called ethical guidelines for dealing with participants, that all psychological experimenters must conform to, as set by the British Psychological Society (BPS).

Practice

Read the description of the following study and evaluate it using GRAVE:

"A recent study was conducted to research the effects of alcohol on concentration. A group of 30 university students were used, and they were split into two groups, one with 15 boys, one with 15 girls. All the boys were given two units of alcohol and then both groups were given a problem-solving activity to complete. The findings showed that the boys who had drunk the alcohol found it easier to concentrate for the first fifteen minutes, but afterwards, they became distracted and the girls managed to solve more of the problems in a quicker time overall. All of the students were volunteers found from advertising in a poster around the university halls, and they were each paid £10 for turning up to the experiment."

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The SOSC Acronym

To be **scientific**, a study needs to involve objective, systematic procedures. Scientific findings can add to knowledge and be used more confidently to suggest conclusions and possible explanations as to why something may have happened during an experiment. They also try to analyse any mathematical patterns or correlations in data, so that they can be related to initial knowledge, and form the basis of an explanation as to why something happened.

SCIENTIFIC
OBJECTIVITY
SUBJECTIVITY
CREDIBILITY

Objectivity is part of scientific method. It occurs when the findings of a study are externally verifiable. This means when the results are observable by others who can agree that the findings are correct and share the conclusions of the experimenters in charge of the study. On the other hand, findings are said to be **subjective** when they cannot be directly verified by someone outside of the study team (i.e. findings are subjective is they rely in the inference or interpretation of the researcher). This type of data is often considered less reliable than objective.

Findings and theories must be **credible** (that is, believable). If they defy common sense, they may be wrong and will require further investigation. For example, Stanley Milgram's study on obedience (1963) appears credible because other research by other psychologists, and real life has backed it up.

PRACTICE Decide whether each of the following statements are objective or subjective:

1. 8 out of 10 cat owners say their cats prefer Whiskas
2. Attendance levels at matches show that football is the most popular sport in the UK
3. Science research shows that heart attacks are one of the major causes of death in this country
4. 75% of workers earn less than the average wage in the UK
5. The colour red provokes anger when on any item of clothing by other people

Evaluating Research Methods

Evaluation - weighing up different points of view

Generally speaking, you evaluate studies using the advantage and disadvantage system. It is of course highly recommended that for longer questions with higher marks in the exam that you use several pros and cons for the method of research and always end with a conclusion, detailing your reasons.

Psychological studies tend to lean towards having *strengths* and *weaknesses* more than advantages and disadvantages, but it is essentially the same system. If something goes against common sense, then it is unlikely to be true. However, you will need **evidence** to show why what you are saying is true or untrue.

A good example of this is Milgram's study of obedience (1963). Originally, you would argue that "No one would administer a series of increasingly painful and seemingly-harmful electric shocks to another human being simply because a man in a white lab coat tells you to do so" but Milgram wanted to take this further. Of course, that statement makes sense in your mind at first – but Milgram's study showed that everyone who was tested did do it and in face 64% of the subjects tested went through to the full 450V shock, marked lethal – even though they thought what they were doing was unacceptable.

PRACTICE Find a psychological study which you believe is based on an idea which defies common sense, but was researched using a study where the findings proved the hypothesis to be correct after all. Evaluate the method of research, outlining its strengths and weaknesses (this can be done using the GRAVE and SOSC methods of analysis).