Reliability and validity of studies

HOW DO PSYCHOLOGISTS TEST THE QUALITY OF STUDIES?

RELIABILITY

The reliability of a method of measurement (whether it be an experimental test, questionnaire or observational procedure) refers to how **consistently** it measures.

INTERNAL RELIABILITY

Internal reliability refers to **how consistently a method measures within itself.** If methods of measurement were not **standardised** they would give distorted final scores.

For example, internal reliability would be lacking if

- a ruler consisted of variable centimetres,
- an I.Q. test was made up of half ridiculously easy questions and half ridiculously difficult questions (virtually everyone would score half marks and be equally intelligent!) or
- different observers using the same observational definitions simultaneously scored the same individual differently.

Internal reliability could be checked for test items by the **split half method** – correlating the results of half the items with the other half (e.g. the odd numbers with the even numbers of the test) and gaining a high positive correlation coefficient.

EXTERNAL RELIABILITY

External reliability refers to **how consistently a method measures over time when repeated.** Methods of measurement should give similar scores when repeated on the same people under similar conditions.

For example external reliability would be lacking if

- a ruler measured an unchanging object different lengths each time it was used,
- an I.Q. test scored the same person a genius one day but just average a week later.

External reliability could be checked for test items by the **test-, re-test method** – correlating the results of the test conducted on one occasion with the results of the test conducted on a later occasion (with the same subjects) and gaining a high positive correlation coefficient.

VALIDITY

The validity of a method of measurement (whether it be an experimental test, questionnaire or observational procedure) refers to whether it **measures what it is supposed to measure** - how realistically or truly variables have been operationalised.

INTERNAL VALIDITY – refers to whether the results of a study were really due to the variables the researchers suggest were tested by their methodology.

EXTERNAL VALIDITY – refers to whether the results can be generalised if conducted in different environments or using different participants.

FACE/CONTENT VALIDITY

Face or content validity involves **examining** the content of the test to see if it **looks** like it measures what it is supposed to measure.

For example, examining the test items of an intelligence test to see if they seem to measure general intelligence, not just general knowledge or linguistic comprehension.

CONCURRENT VALIDITY

Concurrent validity involves **comparing** a **new** method or test **with** an already well **established** one that claims to measure the same variable(s). A high positive correlation should be gained between the results of the two tests.

For example, correlating the results from the same people tested by a new intelligence test and an older established one.

CONSTRUCT VALIDITY

Construct validity refers to whether the test or method can be used to **support** the **underlying theoretical constructs** concerning the variable that it is supposed to be measuring.

For example, if theory suggests the offspring of two highly intelligent parents raised in a stimulating environment should be intelligent, an IQ test should confirm this.

PREDICTIVE VALIDITY

Predictive validity refers to whether the test will **predict future performance** indicated by its results.

For example, high scorers on an I.Q. test at a young age should be predicted to later perform better in studies or jobs requiring intelligence.

ECOLOGICAL VALIDITY

Ecological validity refers to whether a test or method measures behaviour that is representative of naturally occurring behaviour. Too specifically operationalised tests or those conducted under contrived conditions may not reflect spontaneously occurring, natural behaviour. For example, do the items on an intelligence test represent all the types of behaviour we would describe as intelligent in everyday life?

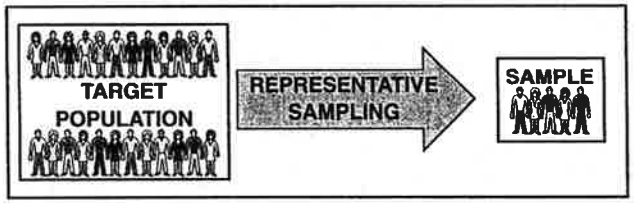
However, since there is difficulty in saying what conditions are 'natural' or 'normal' (laboratories are human social situations too, while some field studies may be conducted under very unusual circumstances) ecological validity is perhaps best measured by the extent to which research findings can be generalised to other research settings.

Sampling

HOW DO PSYCHOLOGISTS SELECT THEIR SUBJECTS?

SAMPLING

- Sampling is the process of selecting subjects to study from the **target population** (a specified section of humankind).
- Since the results of the study on the sample will be generalised back to the target population (through inference), samples should be as **representative** (typical) of the target population as possible.
- Samples should be of a sufficient size (e.g. 30) to represent the variety of individuals in a target population, but not so large as to make the study uneconomical in terms of time and resources.



TYPES OF SAMPLING

RANDOM
Truly random sampling only occurs when **every member** of a target population has an **equal chance** of being selected.
For example:
Putting the names of every member of the target population into a hat and pulling a sample out (without looking!).

STRATIFIED
Involves **dividing** the target population into important **subcategories** (or strata) and then selecting members of these subcategories in the **proportion** that they occur in the target population.
For example:
If a target population consisted of 75% women and 25% men, a sample of 20 should include 15 women and 5 men.

OPPORTUNITY
Opportunity sampling simply involves selecting those subjects that are around and **available at the time**. An effort may be made to not be biased in selecting particular types of subject.
For example:
University psychologists may sample from their students.

SELF-SELECTING
Self-selecting samples consist of those individuals who have consciously or unconsciously **determined their own involvement** in a study.
For example:
Volunteers for studies or passers by who become involved in field studies, i.e. in bystander intervention studies.

STRENGTHS

Random sampling (in large numbers) provides the **best chance of an unbiased representative sample** of a target population.

A **deliberate effort** is made to identify the characteristics of a sample most important for it **to be representative** of the target population.

It is **quick**, **convenient** and often the most economical method of sampling.
It has, therefore, been the most common type of sampling.

Self-selecting samples are relatively convenient and, if volunteering is made on the basis of informed consent, ethical. The choice is not biased by the researcher.

WEAKNESSES

The larger the target population, the more difficult it is to sample randomly, since compiling a selection list of everyone becomes more impractical. True random sampling is, therefore, very rare.

Stratified sampling can be very **time consuming,** since the subcategories have to be identified and their proportions in the target population calculated.

Opportunity sampling gives very unrepresentative samples and is often **biased** on the part of the **researcher** who may choose subjects who will be 'helpful'.

Self-selecting samples are often unrepresentative – being **biased** on the part of the **subject**. Volunteers are unlike non-volunteers in many ways.

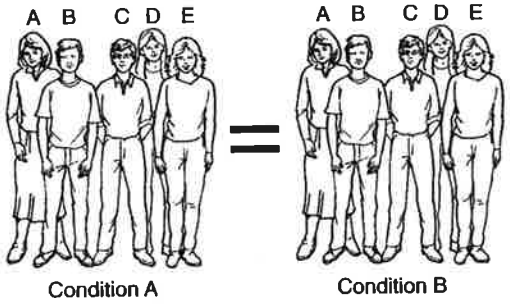
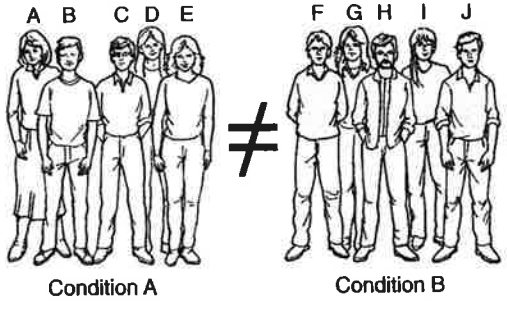
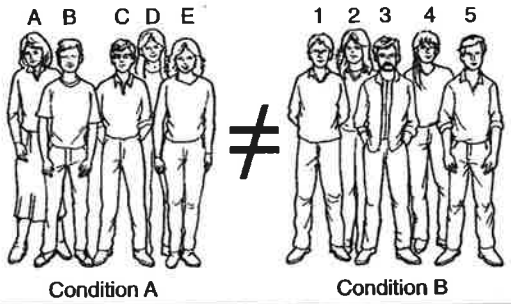
Controlling extraneous variables and bias

HOW DO PSYCHOLOGISTS CONTROL EXTRANEOUS VARIABLES AND BIAS IN THEIR STUDIES?

TYPE OF PROBLEM	PROBLEM	METHOD OF CONTROL
SUBJECTS	**INDIVIDUAL DIFFERENCES** Subject variables can become a problem especially in an independent measures design, creating random or even constant confounding effects.	**Sample large** and **randomly** to gain a representative sample. Use a repeated measures or matched pairs design. **Allocate** subjects **randomly** to each condition of an independent measures experiment to balance out subject variables.
METHOD	**ARTIFICIALITY** Laboratory environments and operationalised variables may lack ecological validity.	Use a **non**-laboratory environment instead, e.g. field study. Broaden or increase the number of definitions for the operationalised variable.
DESIGN	**ORDER EFFECTS** Where learning, boredom or fatigue can influence the second condition of an experiment using a repeated measures design.	Use independent measures design instead. Delay or change the second test. **Counterbalance** the conditions, by getting half the subjects to perform condition A before condition B, and the other half to perform condition B before condition A, thereby balancing the order effects equally between conditions.
	DEMAND CHARACTERISTICS Working out the aim of the study and behaving differently (e.g. trying to please the researcher or spoil the study).	Use independent measures design to stop exposure to both conditions of the experiment, therefore reducing chances of guessing the aim of the study. Use **deception** to hide research aim. However, there are ethical problems with this. Use **single blind method** – the subject does not know which condition of the experiment they are in, e.g. whether they have been given placebo or real pills.
	EXPERIMENTER EXPECTANCY Where the expectations of the researcher influence the results either by consciously or unconsciously revealing the desired outcome or through unconscious procedural or recording bias.	Use **double blind method** – neither the subject nor the researcher carrying out the procedure and recording the results knows the hypothesis or which condition the subjects are in. Use **inter-observer reliability** measures to overcome biased observation. An observer with no vested interest in the result, simultaneously, but separately, rates the same piece of behaviour with the researcher. When results are compared, a high positive correlation should be expected.
PROCEDURE	**DISTRACTION AND CONFUSION** Both sources of extraneous variables which could confound studies unless controlled for.	Standardised instructions should be given in a clear and simple form and the subject should be asked if they have questions, so each participant receives equal information. Standardised procedures should be employed so each subject is tested under equal conditions with no distractions.

Experimental design

HOW DO PSYCHOLOGISTS USE THEIR SUBJECTS IN EXPERIMENTS?

	REPEATED MEASURES	INDEPENDENT MEASURES	MATCHED PAIRS
DESIGN	A repeated measures design involves using the **same subjects** in each condition of an experiment, e.g. giving a group of subjects a driving test with no alcohol, followed at a later time by the same test after a pint of lager 	An independent measures design involves using **different subjects** in each condition of the experiment, e.g. giving one group of subjects a driving test with no alcohol, and a different group of subjects the same test after a pint of lager. 	A matched pairs design involves using **different but similar subjects** in each condition of an experiment. An effort is made to match the subjects in each condition in any important characteristics that might affect performance, e.g. in driving ability, alcohol tolerance, etc. 
STRENGTHS	• **Subject variables** (individual differences shown by every subject, e.g. intelligence, motivation, past experience, etc.) which could become extraneous variables are **kept constant** between conditions. • **Better statistical tests** can be used because of less variation between conditions. • **Fewer subjects** are required (because each is used more than once) therefore more economical.	• **Order effects** such as learning, fatigue or boredom do not influence a second condition, since the subject only participates in one condition. • **Demand characteristics** are less of a problem as the subject only participates in one condition so is naive to the test, and is less likely to guess the aim of the study and act differently. • The **same test** can be used.	• **Subject variables** are kept **more constant** between conditions. • **Better statistical tests** can be used because of less variation between conditions. • **Order effects** do not occur since the subject only participates in one condition. • **Demand characteristics** are less of a problem as the subject only participates in one condition. • The **same test** can be used.
WEAKNESSES	• **Order effects** such as learning, fatigue or boredom may become constant errors when one condition is done after another, e.g. a subject given the same test may do better due to practice. • **Demand characteristics** may become a problem - as the subject does both conditions of the experiment, they may guess the aim of the study and act differently. • **Different tests** may be needed.	• **Subject variables differ,** which could become confounding variables unless controlled for. • **Worse statistical tests** can be used because of more variation between conditions. • **More subjects** are required (because each is used only once) and is, therefore, less economical.	• **Subject variables** can never be perfectly matched in every respect. • Matching subjects is very **time consuming** and **difficult.** • **More subjects** are required (because each is used only once) and is, therefore, less economical.

Math
5

Experimental methods

HOW DO PSYCHOLOGISTS INVESTIGATE THEIR HYPOTHESES?

EXPERIMENTS

An experiment involves the **manipulation of the independent variable** to see what effect it has on the dependent variable, while attempting to **control** the influence of all other **extraneous variables**.

	LABORATORY	FIELD	NATURAL/QUASI
TYPES	The researcher **deliberately manipulates** the independent variable while maintaining **strict control** over extraneous variables through standardised procedures in a controlled environment.	The researcher **deliberately manipulates** the independent variable, but does so in the subject's own **natural environment**.	The independent variable is **changed by natural occurrence**; the researcher just records the effect on the dependent variable. Quasi experiments are any where control is lacking over the IV.
EXAMPLES	**BANDURA ET AL (1961)** Bandura manipulated the independent variable of 'exposure to aggression' to see what effect it had on the dependent variable of 'imitation of aggression in children' under controlled laboratory conditions by randomly allocating children to either a condition where they saw • an adult being violent towards a Bobo doll, or • an adult showing no violence. The number of aggressive acts shown by each child was later also measured in the laboratory.	**FESHBACH AND SINGER (1971)** Feshbach and Singer manipulated the independent variable of 'exposure to aggression' to see what effect it had on the dependent variable of 'imitation of aggression in children' by showing boys in a residential school either • aggressive television or • non-aggressive television. This field study was conducted over 6 weeks, during which the boys' aggression was rated.	**JOY ET AL (1977)** Joy et al investigated the independent variable of 'exposure to aggression' to see what effect it had on the dependent variable of 'imitation of aggression in children' by measuring levels of aggression in children of a small Canadian town • before television was introduced to the town, and • after television was introduced to the town.
STRENGTHS	The most scientific method because the • manipulation of the independent variable indicates **cause** and **effect**. • laboratory **increases control** and accurate measurement of variables thus more **objectivity**. • laboratory standardisation means greater ability to replicate (repeat again) the study.	• Has **greater ecological validity** than laboratory experiments, since behaviour occurs in its own natural environment. • **Less bias** from sampling (subjects do not have to be brought into the laboratory) and demand characteristics (if subjects are unaware of being tested).	• Has **great ecological validity**, since a 'natural' change (not induced directly by the experimenter) occurs in a natural environment. • **Very little bias** from sampling or demand characteristics (if subjects are unaware of being observed by experimenters).
WEAKNESSES	• **Total control** over all variables is **not possible.** • **Artificial** laboratory conditions may produce unnatural behaviour that **lacks ecological validity** (results do not generalise to real life). • Results more likely to be **biased** by sampling, demand characteristics, experimenter expectancy. • May raise ethical problems of deception, etc.	• **More bias** likely from extraneous variables, due to **greater difficulty of controlling** all aspects of experiment outside the laboratory. • More **difficult to replicate** exactly. • More **difficult to record data** accurately. • **Ethical problems** of consent, deception, invasion of privacy, etc.	• **Hard to infer cause and effect** due to **little control** over extraneous variables and no direct manipulation of the independent variable. • **Virtually impossible to replicate** exactly. • Bias if subjects are aware of being studied. • **Ethical problems** of consent, deception, invasion of privacy, etc.

Non-experimental methods 1. Observation

HOW DO PSYCHOLOGISTS INVESTIGATE THEIR HYPOTHESES?

OBSERVATIONS

Observations involve the precise measurement of naturally occurring behaviour in an objective way.

TYPES	NATURALISTIC	CONTROLLED	PARTICIPANT
	Naturalistic observations involve the recording of spontaneously occurring behaviour in the subject's own natural environment.	Controlled observation involves the recording of spontaneously occurring behaviour, but under conditions contrived by the researcher (e.g. in the laboratory).	Participant observations involve the researcher becoming involved in the everyday life of the subjects, either with or without their knowledge.
EXAMPLES	• Fagot's (1973) naturalistic observation of parent-child interaction in gender socialisation in the home. • Sylva et al's (1980) naturalistic observation of types of play in children's playgroups. • Ethological observations of animal behaviour in the animal's natural habitat.	• Sleep studies – laboratory equipment is needed to record eye movements and changes in brain activity as subjects naturally fall to sleep. • Parent-child interaction - observed through one way mirrors. • Human sexual response, e.g. Masters and Johnson's work.	• Rosenhan (1973) used eight 'normal' undisclosed participant observers to gain admittance to psychiatric hospitals through faking symptoms and then record their experiences of being a psychiatric inpatient. • Whyte's (1955) participant observation of Italian gang behaviour in the USA.
STRENGTHS	• **High ecological validity** (realism) of observed behaviour if observer is hidden. • Can be used to **generate ideas** for or **validate findings** from experimental studies. • Sometimes the only ethical or practical method.	• **More control** over environment which leads to **more accurate** observations. • Greater control leads to **easier replication**. • Usually avoids ethical problems of consent, unless research purpose and observer are hidden.	• Very **high ecological validity** if participant undisclosed, less if disclosed depending upon level of integration with subjects. • Extremely **detailed** and **in depth knowledge** available, not gained from any other method.
WEAKNESSES	• **Cannot legitimately infer cause and effect** relationships between variables that are only observed but not manipulated. • **Lack of control** over conditions makes **replication more difficult**. • **Ethical problems** of invasion of privacy.	• **Participant reactivity** may distort the data if subject is aware of being observed, e.g. abnormal sleep patterns in unnatural laboratory conditions. • **Lower ecological validity** than naturalistic observations, can cause demand characteristics. • Cause and effect can not be inferred.	• **Difficult** to **record data promptly** and **objectively,** and impossible to **replicate** exactly. • Participant's behaviour may **influence subjects**. • **Ethical problems** of deception with undisclosed participants. • Cause and effect can not be inferred.

Non-experimental methods 2. Questioning

HOW DO PSYCHOLOGISTS INVESTIGATE THEIR HYPOTHESES?

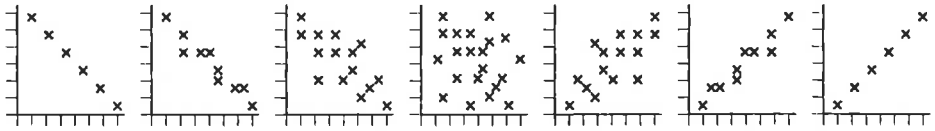
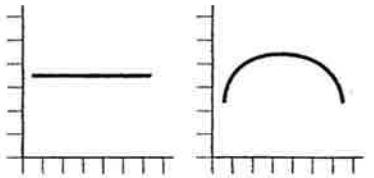
QUESTIONING PEOPLE

There are many techniques for gathering **self report** data, which can be employed in varying detail - from the superficial survey of many people to the in-depth assessment of individuals.

TECHNIQUES	EXAMPLES	STRENGTHS	WEAKNESSES
INTERVIEWS All interviews involve direct verbal questioning of the subject by the researcher, but differ in how structured the questions are:		Generally, interviews generate a large amount of detailed data, especially about internal mental states/beliefs.	Generally interviews rely on self report data which may be untrue. Cause and effect can not be inferred.
• **Structured interviews** – contain fixed predetermined questions and ways of replying (e.g. yes/no).	Usually used in large scale interview-based surveys, e.g. market research.	Easy to quantify and analyse. Reliable, replicable and generalisable.	Less validity – distorts/ignores data due to restricted answers or insensitivity.
• **Semi-structured interviews** – contain guidelines for questions to be asked, but phrasing and timing are left up to the interviewer and answers may be open-ended.	Schedule for affective disorders and schizophrenia – a diagnostic interview. Most employment interviews.	Fairly flexible and sensitive. Fairly reliable and easy to analyse.	Flexibility of phrasing and timing could lead to lower reliability. Open-ended answers are more tricky to analyse.
• **Clinical interview** – semi-structured guidelines but further questioning to elaborate upon answers.	Piaget's interviewing of his children. Freud's interviewing of his patients.	Very flexible, sensitive and valid. Fairly reliable and easy to analyse.	Flexibility leads to more difficulty in replication and bias from interviewer.
• **Unstructured interview** – may contain a topic area for discussion but no fixed questions or ways of answering. Interviewer helps and clarifies interview.	Often used in humanistic based therapy interviews.	Highly detailed and valid data. Extremely flexible, natural and un-constrained.	Very unstandardised, therefore, not very replicable, reliable or generalisable. Difficult to quantify and analyse.
QUESTIONNAIRES Questionnaires are written methods of gaining data from subjects that do not necessarily require the presence of a researcher. They include:		Generally questionnaires collect large amounts of standardised data relatively quickly and conveniently.	Generally questionnaires lack flexibility, are based on self report data and are biased by motivation levels.
• **Opinion surveys**, e.g. attitude scales and opinion polls. Questions can be closed or open-ended and should be precise, understandable and easy to answer.	Likert attitude scales.	Highly replicable and easy to score (unless open-ended answers).	Biased by socially desirable answers, acquiescence (agreeing with items) and response set (replying in the same way).
• **Psychological tests**, e.g. personality and I.Q. tests. Items need to be standardised for a population and tested to show reliability, validity and discriminatory power.	Eysenck's personality inventory (to measure extroversion for example) or Bem's sex role inventory (to assess gender role identity).	Highly replicable and standardised between individuals. Easy to score.	Difficult to construct highly reliable and valid tests.

Non-experimental methods 3. Case study and correlation

HOW DO PSYCHOLOGISTS INVESTIGATE THEIR HYPOTHESES?

TECHNIQUES AND EXAMPLES	STRENGTHS	WEAKNESSES
CASE STUDY An idiographic method involving the **in-depth** and **detailed** study of an **individual** or particular group. The case study method is often applied to unusual or valuable examples of behaviour which may provide important insights into psychological function or refutation of psychological theory. Examples of case studies include: Freud's studies of his patients and Piaget's studies of his children.	Highly detailed and in depth data is provided which superficial methods might miss or ignore. High ecological validity of data obtained. Often the only method suitable for studying some forms of behaviour, e.g. investigating the acquisition of human language in primates. Often the only method possible due to rarity of behaviour, e.g. natural cases of human environmental deprivation, such as the case of Genie.	No cause and effect can legitimately be inferred. Lack of generalisability to the population due to single cases being too small and unrepresentative a sample. Low reliability due to • many case studies involving recall of past events, which may be open to memory distortion. • subject reactivity • lack of observer objectivity Difficult or impossible to replicate. Time consuming and expensive.
CORRELATIONS A method of data analysis which measures the relationship between two or more variables to see if a trend or systematic pattern exists between them. Inferential statistics can be used to arrive at a correlation coefficient which indicates the strength and type of correlation, ranging from: **−1** −.9 −.8 −.7 −.6 −.5 −.4 −.3 −.2 −.1 0 +.1 +.2 +.3 +.4 +.5 +.6 +.7 +.8 +.9 **+1** perfect negative correlation / strong negative correlation / weak negative correlation / NO correlation / weak positive correlation / strong positive correlation / perfect positive correlation 	Precise information on the degree of relationship between variables is available in the form of the correlation coefficient. It can readily quantify observational data. No manipulation of behaviour is required. Strong significant correlations can suggest ideas for experimental studies to determine cause and effect relationships.	No cause and effect can be inferred. Correlations should be plotted out on scattergrams to properly illustrate the relationship between variables – a zero correlation coefficient may not form a random pattern. For example, both of these patterns would not yield a significant correlational result. 

Ethical guidelines for conducting research

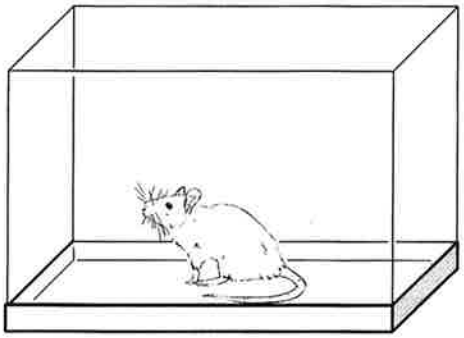
ETHICAL GUIDELINES FOR THE USE OF ANIMALS IN RESEARCH

The Experimental Psychology Society (1986) has issued guidelines to control animal experimentation based on the legislation of the 'Animals (Scientific Procedures) Act' (1986). In general all researchers should:

1 Avoid or minimise stress and suffering for all living animals.
2 Always consider the possibility of other options to animal research.
3 Be as economical as possible in the numbers of animals tested.

However, before any animal is tested a Home Office Licence to conduct animal research has to be acquired. The Home Office provides legislation for and monitors:

- **The conditions under which animals are kept** – cage sizes, food, lighting, temperature, care routine etc. all have to be suitable for the species and its habits.
- **The researchers conducting the research** – all involved have to demonstrate they have the necessary skills and experience to work with the particular species they wish to study in order to acquire their personal licences.
- **The research projects allowed** – applications must be submitted outlining the project's aims and possible benefits as well as the procedures involved (including the number of animals and the degree of distress they might experience). Projects are only approved if the three requirements above are met and the levels of distress caused to the animals are justified by the benefits of the research. The conditions of the licence have to be strictly adhered to regarding the numbers, species and procedures (e.g. limits on the maximum level of electric shock) allowed. Research on endangered species is prohibited unless the research has direct benefits for the species itself, e.g. conservation.



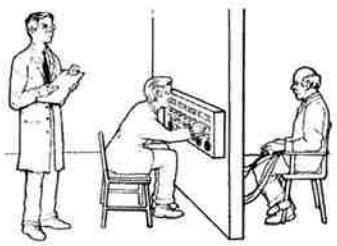
Bateson (1986) has specified some of the factors involved in deciding on the viability of animal research. Often the decision will involve a trade off between
a. The certainty of benefit from the research.
b. The quality of the research.
c. The amount of suffering involved for the animals.
Home Office licences are most likely to be awarded if factors 'a' and 'b' are high, and factor 'c' is low.

ETHICAL ISSUES IN HUMAN RESEARCH

The aim of Psychology is to provide us with a greater understanding of ourselves and, if required, to enable us to use that understanding to predict and control our behaviour for **human betterment**. To achieve this understanding psychologists often have no other choice but to investigate human subjects for valid results to be obtained. Humans, however, not only experience physical ***pain*** and ***anxiety*** but can also be affected mentally – in terms of ***embarrassment*** or ***loss of self-esteem*** for example. Humans also have **rights** of ***protection*** and ***privacy*** above the levels granted to other animals, and so this leads us to ethical dilemmas:

- How far should psychologists be allowed to go in pursuing their knowledge?
- Should humankind aim to improve itself by allowing people to be dehumanised in the process?
- Do the **ends** of psychological research **justify** the **means**?
- Can we ever know whether a piece of research will justify abusing the rights of individuals before we conduct it?

The existence of ethical constraints is clearly a serious but necessary limitation on the advancement of Psychology as a science and the major professional psychological bodies of many countries have published ethical guidelines for conducting research. In Britain, the British Psychological Society (1993) has published the "***Ethical Principles for Conducting Research with Human Participants***", which guides psychologists to consider the implications of their research (e.g. by asking members of the target population if they would take offence to the research) and deals with a number of methodological ethical issues such as:



CONSENT – Researchers are obliged, whenever possible, to obtain the participants' ***informed*** consent – *all* aspects of the research that might affect their willingness to give consent should be revealed. Consent is especially an issue when testing involves children or those unable to give it themselves, e.g. people with serious brain damage. Authority or payment must not be used to pressure participants into consent.

DECEPTION – The BPS Ethical Principles (1993) states that "Participants should never be deliberately misled without extremely strong scientific or medical justification. Even then there should be strict controls and the disinterested approval of independent advisors". Many psychology studies would not achieve valid results due to demand characteristics if deception was not employed, and so a cost-benefit analysis of the gains vs. the discomfort of the participant must be considered.

DEBRIEFING – Involves clarifying the participants' understanding of the research afterwards and discussing or rectifying any consequences of the study to ensure that they leave the study in as similar a state as possible to when they entered it. This is especially important if deception has been employed and the procedures could cause long term upset.

WITHDRAWAL FROM THE INVESTIGATION – Any participant in a psychological study should be informed of their right to withdraw from testing whenever they wish.

CONFIDENTIALITY – Under the Data Protection Act (1984) participants and the data they provide should be kept anonymous unless they have given their full consent to make their data public. If participants are dissatisfied after debriefing they can demand their data is destroyed.

PROTECTION OF PARTICIPANTS – Participants should leave psychological studies in roughly the same condition in which they arrived, without suffering physical or psychological harm. The risk of harm should not be greater than that found in everyday life.

OBSERVATIONAL RESEARCH – Hidden observational studies produce the most ecologically valid data but inevitably raise the ethical issue of invasion of privacy.