RESEARCH DESIGNS

There are there basic types of research designs – experiments, correlational studies, and descriptive studies.

Experiment

An experiment is the most direct and conclusive approach to testing a hypothesis about a cause-effect relation between two variables. A variable is simply anything that can vary. It might be a condition of the environment, such as temperature or amount of noise; or it might be a measure of behaviour, such as score on a test. In describing an experiment, the variable that is hypothesized to cause some effect on another variable that is hypothesized to be affected is called the dependent variable. The aim of any experiment is to learn how the dependent variable is affected by (depends on) the independent variable. In psychology, dependent variables are usually measures of behaviour, and independent variables are factors that are hypothesized to influence those measures.

More specifically, an experiment can be defined as a procedure in which a researcher systematically manipulates (varies) one or more independent variables, while keeping all other variables constant. If all other variables are kept constant, and only the independent

variable is changed, then the experimenter can reasonably conclude that any change observed in the dependent variable is caused by the change in the independent variable, and not by some other factor(s) that happened to vary.

In any research study, the people(s) or animal(s) that are studied are referred to as the subject(s) of the study. In some experiments, called within-subject experiments, the different conditions of the independent variables are applied to each subject. In other experiments, called between-groups experiments, the different conditions are applied across the different groups of subjects.

Correlational Studies

For many of the most interesting questions that psychologists ask, it is not possible to assign subjects to particular experimental conditions and control their experiences. Suppose, for example, that you are interested in the relation between the disciplinary styles of parents and the psychological development of their children. Perhaps you entertain the theory that strict punishment is harmful, that it promotes aggressiveness or other unwanted characteristics. To test that theory with an experiment, you would have to manipulate the discipline variable and then measure some aspects of the children's

behaviour. You might consider randomly assigning some families to a strict punishment condition and others to other conditions. The parents would then have to raise their children in the manners you prescribe. But you know that you cannot control families that way; it's not practical, not legal and not ethical. So instead, you conduct a correlational study.

A correlational study can be defined as a study in which the researcher does not manipulate any variable but observes or measures two or more variables to find relationships between them. Correlational studies can identify lawful relationships between variables, and thereby help us make predictions about one variable based on knowledge of another, but they do not tell us in any direct way whether change in one variable is the cause of change in another. Since the researcher did not control either variable so we cannot be sure what was the cause and what was the effect.

Descriptive Studies

Sometimes the aim of research is to describe the behaviour of an individual or set of individuals without systematically investigating relationships between specific variables. A study of this sort is called a descriptive study. Descriptive studies may or may not make use of numbers.

As an example of one involving numbers, researchers might survey the members of a given community to determine the percentage who suffer from various mental disorders. This is a descriptive study if its aim is simply to describe the prevalence of each disorder without correlating the disorders to other characteristics of the community's members. As an example of a descriptive study not involving numbers, an animal behaviourist might observe the courtship behaviours of mallard ducks to describe in detail the sequence of movements that are involved. Some descriptive studies are narrow in focus, concentrating on one specific aspect of behaviour, and others are very broad, aiming to learn as much as possible about the habits of a particular group of people or species of animal. One of the most extensive and heroic descriptive studies ever conducted is Jane's Goddall's research on wild chimpanzees in Africa. She observed the ape's behaviours over a period of 30 years and provided a wealth of information about every aspect of their lives.