

**Discuss the extent to which psychology is a science**

The question – ‘Is psychology a science’ has always been debatable, however, before jumping to conclusions it is important to consider the definition of science. Science originates from the Latin, meaning ‘knowledge’, therefore it can have reference to something that we know to be true rather than what we believe to be true. Science as a modern term is described as the fountain of knowledge, which we accept as trustworthy. We obtain this knowledge from empirical methods by the use of investigation and observation through sensory experience. All scientific ideas must undergo these methods in order for them to be tested and constructed through theories and refined through further empirical observations.

Silfe and Williams (1995) identified phases of science that can be distinguished in the cycle of scientific enquiry. They proposed that scientific observations are made under objective conditions; this avoids bias in any observations as well as any other influences such as expectations or particular cultural values of the scientists.

However, in psychology, when investigating subject matter use the majority of studies are generalised and involve their bias interpretations.

Scientific observations should be taken place under controlled conditions this facilitates the variables to be operationalise in the experiments. This would oppose with the view that psychology is a science as some of the experiments are conducted in labs; therefore they are lacking in ecological validity and can create demand characteristics. However this proves that psychologists may use scientific methods but the result of them are relatively meaningless. Another attribute that characterises science suggests that it involves making predictions about what is expected to happen under specified conditions. Therefore the scientists can either validate or falsify their theory or hypothesis. As the ability to control and predict behaviour in the experiment makes it probably that we will also be able to control and predict the behaviour in realistic settings. Also scientific investigations are also open to public scrutiny therefore the investigations can be replicated as well as the results this increasing confidence and reliability. However with psychology experiments it is hard to establish cause and effect in particular; when investigating case studies. Hence why they conduct some studies in the lab to maintain the controlled conditions however again the issues arise with cause and effect. For example, if they

are looking at stress, they may find indirect variables, such as sweat, but they cannot firmly say that this is a direct variable linked to stressful situations.

Scientific knowledge enables to explain the nature of the world which provides a foundation of knowledge for us. Scientific knowledge had two main characteristics as it can reject other explanations of naturally occurring phenomena for instance – supernatural explanations. They are often stated as laws or principles about the relationship between different events, also because it becomes even more possible to control and predict them. Secondly, by characterising science as a method of studying phenomena it involves empirical observation which leads to further theories being developed.

There can be many forms of science, for example ‘hard’ sciences such as physics and chemistry are more towards a reductionist approach and experiments. Whereas psychology and sociology attempt to use the deterministic and reductionist approach of the hard science however the way in which the research is conducted differs; as it cannot be tested as firmly like hard sciences. In juxtaposition one could make a lesser claim that at least some levels of psychology are scientific such as neurobiology and mental illness.

It is important for these ‘hard’ sciences to consist of paradigms, which are general theories that encompass many smaller theories, such as the theory of relativity or the laws of gravity. However, psychology doesn’t have any of these. Instead, it has levels of explanations that are used to explain phenomena. Thomas Kuhn (1962) said, because of this psychology is a ‘pre-science’. He meant that psychology had not quite reached the stage of being science but may do one day. However it is hard to rely on these paradigms as they may change. Therefore it may not be as relevant for psychology to have them.

In science empirical testing involves the process of deduction and theory construction (induction). Induction is the reasoning from the particular to the general. Philosophers in the 19<sup>th</sup> century use these inductive techniques and made observations of the world around them and produced them into general statements (about the world) obtained by observations or facts – these are known as ‘natural laws’.

Karl Popper (1951) suggested that this form of gaining knowledge could never be used to demonstrate the truth of knowledge; as knowledge can be

verified, but never falsified. For example no amount of observing red roses can ever demonstrate that there are only red roses, whereas one observation of any other colour rose leads to certainty that the natural law is false. Therefore Popper's principles of falsification effectively lead to the process of deductive science. However the consequence of the reductionist effectively lead to the process of deductive science. However the consequence of the reductionist approach are that the operational definitions are not necessarily measurements of the thing that they are originally interested in this often leads to psychologists to explore the relationship between two things without ever being able to measure them directly. Therefore in psychology the observations made are always one step away from the phenomenon that they are interested in studying which results in false conclusions.

Both arguments for and against whether 'psychology is a science' are valid. However the type of experiment which is used to investigate the phenomena establishes to what extent psychology is a science. By summarising the definition of science it concludes that it objectively obtains data and organises it into theories which are tested empirically psychology can easily establish this with the exception of some experimental methods.

### **References**

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