

## Can & should psychology be a science?

**Psychological methods cannot provide the valid measurements of human behaviour that science requires. Either bias or participant reactivity will always contaminate the data.**

This is not a serious problem. Whilst it is true that there are practical difficulties with measuring human behaviour and thinking processes, it does not follow that we can't do psychology scientifically. After all, we are aware of how bias and reactivity may affect our data and therefore are in a position to do something about it. In all the sciences there are problems with measurement that scientists work to overcome. Researchers are continually developing better ways of measuring psychological processes and there are plenty of reasons to believe that more improvements will occur in future.

**The most important parts of psychology concern subjective experience, and this cannot be studied using the objective methods of science.**

This is a bit more serious. How serious depends on the position you take. Some branches of psychology (e.g. behaviourism) have tried to deal with the problem of subjective experience by pretending it doesn't exist. Since it self-evidently does (who is reading this?) this is unsatisfactory. Alternative approaches have suggested that subjective experiences do exist, but they don't matter because they do not influence our behaviour (a position called *epiphenomenalism*, held by some bio-psychologists). If you take this view, then the objection evaporates because it remains quite possible to model psychological/behavioural processes accurately without reference to subjective experience. Things become more difficult if you believe that subjective experiences have a causal influence on behaviour. If this is true and if it is impossible to study subjective experiences scientifically, then it is difficult to maintain that psychology can be scientific. However, it might be argued that by asking people about their experiences we can learn enough to include the role of experience in scientific models of psychological processes. Perhaps there is a role here for qualitative approaches to data gathering. It is sometimes objected at this point that theoretical accounts of subjective experience fail to 'capture the phenomenon' (i.e. they don't fully describe what it is like to be conscious). This is an ill-conceived objection. Scientific theories have to *model* processes; they don't have to *be* the processes they model. We don't expect a meteorological model of a hurricane to rip the roofs off houses, and we don't expect cosmological models of black holes to swallow matter. Consequently, we should not expect psychological models of subjective experience to be conscious.

**People's behaviour is determined by the information they process. Psychological knowledge is part of that information. Therefore, by doing psychology, we change the nature of the thing we are trying to study. This makes normal scientific activity impossible. In other sciences, the research process does not change the subject matter.**

This is a tricky one. Physicists and chemists would be in a real mess if the theories they constructed about the behaviour of atoms actually changed that behaviour but arguably this is precisely the problem that psychologists face. For example, if I asked you to name a vegetable there's a good chance (if you are from the UK) that you would say 'carrot'. However, now that you *know* that most people asked to name a vegetable say 'carrot', were I to make the same request there is a good chance you would say something different. This could make it impossible to develop a science of psychology, since every time we state a law there's a chance that simply by stating it we will have created the conditions under which it will no longer be true. However, this does not mean that it is impossible for psychology to be a science. Yes it is true that telling people about psychological processes can alter their behaviour but it seems likely that there is a limit to how far. When psychology students learn that the processing capacity of STM is  $7 \pm 2$  bits of information they don't suddenly change that capacity. It may be possible to have psychological laws that operate at the level of *populations* even if there are limits on how far the

behaviour of *individuals* can be predicted. Such a situation is entirely compatible with scientific theorising. For example, thermodynamics embodies a set of laws concerning the behaviour of populations of particles and cannot predict the behaviour of individual particles. Few people would claim, on this basis, that thermodynamics is not science.

**People have minds/souls that are of a fundamentally different nature from their material, physical bodies. Science can explain how the physical body works, but cannot explain the workings of the mind because it is only suitable for investigating the physical world.**

It is difficult to know how to respond to this argument because it is based on premises that are fundamentally incompatible with the assumptions of science. Science is based on the premise that we inhabit a knowable, law-governed, material universe in which physical effects must have physical causes. A scientific view of human behaviour would proceed from the assumption that mental processes are manifestations of physical processes and that these are knowable, at least in principal. The idea of an immaterial soul that influences our physical body is not coherent within this world view. Ultimately this makes this a weak objection, since it is liable only to convince those who already believe it.

**Science deals with predictable, deterministic systems, but people have free will. Consequently, people cannot be studied scientifically because freedom of choice is, by definition, not determined by antecedent factors.**

This objection is similar in many ways to the one above. The scientific world view is basically one in which effects have causes and these causes are themselves effects of earlier causes in a long chain of causal events that stretches back to the big bang. If you believe that people are material entities it follows that their behaviour has material causes and that, sooner or later, the causal sequence that results in a particular behaviour will extend outside the person whose behaviour it is. This implies that, ultimately, people do not have free will over their actions. Free will appears to require something that exempts people from the laws that govern the rest of the universe. This starts to sound like an immaterial soul and puts us back where we were above: the objection only works if you believe from the outset that people have free will. Science implies they do not. If you accept this then it is entirely appropriate to develop scientific theories of human behaviour.

**Our moral obligations as human beings place ethical restrictions on how research can be conducted. There are therefore aspects of human behaviour that cannot be scientifically investigated.**

This is true, and it places a limit on what can be known scientifically about human thinking and behaviour. However, it is important to note that whilst this objection does place a practical limit on what psychologists can investigate, it does not imply that it is impossible or inappropriate to study people scientifically as far as possible within ethically determined limits.

**The aims of science are to describe, explain, predict and control. A scientific psychology will lead to a technology of behaviour and thereby to the control of human beings.**

Yes it will. For example, commercial organisations like supermarket chains spend lots of money conducting research into how to manipulate consumer behaviour in an attempt to make people give them money, so they can make a profit. How much of a problem this is depends on your perspective. Clearly it isn't a problem for the supermarket owners. It may or may not be one for the consumers. We might argue that it is their choice to spend their money (although this would seem to be having it both ways). Alternately we could argue that *someone* has to control people as they aren't really capable of acting in their own best interests: look at the mess they're making of the planet. Scientific psychology is therefore a potential tool for much social good (B.F. Skinner certainly believed this). A different view would accept that a scientific psychology could be abused to exploit people but that this doesn't mean we shouldn't develop one, especially as it might also be used to help people lead happier and freer lives. After all, you can torture people with electricity; it doesn't follow that we should blow up all the power stations.