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Sample Short Essay

----Original assignment-----

You are to write roughly one page (400-600 words) answering the following questions.

Popper says that a theory is scientific if and only if it is falsifiable. What does he mean by this? Do you think that falsifiability is a good way to distinguish scientific claims from religious one? In answering this question, you should say whether or not you think that scientific claims are always (or ever) falsifiable and whether you think that religious claims are always (or ever) falsifiable. Keep in mind that clear examples usually lead to a better paper.

----Sample Essay----

Popper claims that a theory is scientific if and only if it is falsifiable. By 'falsifiable' he means that the theory makes specific predictions about the way the world is which can be checked (in principle) by observation. A falsifiable theory is thus "incompatible with certain possible results of observation" (11).

As I will argue, falsifiability fails as a criterion of the scientific status of a theory. Scientific theories such as the General Theory of Relativity (GTR) do not entail any specific observations on their own. Eddington's famous observation of the bending of light rays around the sun during an eclipse only follows from GTR if we assume numerous background assumptions such as the masses and distances of various stars, theories of how light travels, how telescopes work, etc. No matter what Eddington observed on that particular day in 1919 it could not have possibly shown that GTR was false. This is especially clear when we reflect on the fact that other astronomical observers in Brazil made apparently contradictory observations. Clearly their observations did not falsify GTR so how could Eddington's have done so?

We could decide to allow auxiliary assumptions as 'background' when we claim that a theory makes observational predictions. Unfortunately, this would mean that every theory is now scientific. The claim that humans have a soul is clearly a religious claim, but on this view it would also be scientific because when combined with the claim that 'a soul weighs precisely 2 lbs and leaves the body upon death' it makes observational predictions – namely, that people weighed just before and after death would reliably weigh less. (In fact, people have used this method to try to weigh the soul.) This example also shows that falsifiability is not a good criterion for demarcating science from religion. If you do not allow background assumptions as part of a theory, then GTR as well as 'humans have a soul' will not be scientific. If you allow background assumptions, then both will be.

No doubt there is some much more complicated story of when it is appropriate to use auxiliary assumptions in scientific testing and when those assumptions are 'ad hoc' and unscientific. But Popper does not give us such a theory. It is reasonable to think that whether a theory is scientific might have something to do with the methodology of how we might test it. If this is true, then it is likely that many religious claims will end up counting as scientific. It is unclear exactly what counts as a 'religious claim' but it seems reasonable that the content of the claim matters. For example, in the right context, the claim that the earth is less than 10,000 years old, that a flood once covered the whole world, that Jesus was raised from the dead, and that prayer is efficacious are all clearly religious claims. However, they are all empirically testable as well. So if testability really is the criterion of scientific status, then many religious claims are scientific. So testability cannot be a good criterion for separating scientific from religious claims.