Summary of: *Science: Conjectures and Refutations by Karl Popper*

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In the document, Mr. Popper discusses his experience studying methods or strategies for distinguishing between science and pseudoscience, primarily emphasizing two questions: when should a theory be classified as scientific? And is there any criterion to grant scientific status to a theory?

The author begins by critiquing the strategy used to differentiate science from pseudoscience, which involves identifying whether or not an empirical method is used. Science, by nature, employs an empirical inductive method; however, Mr. Popper highlights that it can be challenging to distinguish between empirical, non-empirical and pseudo-empirical methods. For the author, pseudo-empirical methods are those which, although based on observation and experimentation, do not meet the requirements to be considered scientific and are often biased by the opinion or experience of the person conducting them.

To illustrate his point, the author shares his experiences from 1919, when theories of relativity, Marxist history, psychoanalysis, and individual psychology were in vogue. He mainly discusses the differences in how the evidence, observations, and experiments are conducted in Einstein's theory (relativity) versus the others, the risks involved in the predictions they uphold, their refutability, and the way they are tested.

Essentially, he remarks on the issues that led him to believe that the theories in the social sciences that he analyzed might not be scientific ones, describing a crucial aspect, many of their proponents and exponents base their claims and diagnoses on anecdotal evidence, which is insufficient to prove and support a scientific theory. Additionally, the author exemplifies how the theory of relativity risked being discarded during Eddington's observations, which could have yielded findings contradictory to its predictions; however, the found evidence supported it. On the other hand, Freud's and Adler's theories apparently could explain any human behavior, thereby eliminating their refutability.

From this critical analysis, the author shares his conclusions as a series of observations to consider when attempting to determine whether a theory could be scientific or not:

1. It is easy to obtain confirmations, or verifications, for nearly every theory2. Confirmations should count only if they are the result of risky predictions
3. Every “good” scientific theory is a prohibition: it forbids certain things to happen.
4. A theory which is not refutable by any conceivable event is non-scientific. Irrefutability is not a virtue
of a theory (as people often think) but a vice.
5. Every genuine test of a theory is an attempt to falsify it, or to refute it. Testability is falsifiability
6. Confirming evidence should not count except when it is the result of a genuine test of the theory
7. Some genuinely testable theories, when found to be false, are still upheld by their admirers

Personally, I agree with the author's opinion that anecdotal evidence is insufficient to grant scientific status, as well as with the idea that experiments and tests conducted on theories must follow an objective and rigorous methodology that subjects them to the deepest possible scrutiny. Additionally, these seven conclusions are useful as a guide for identifying the likelihood that a study might be drifting into pseudoscience.

On the other hand, while the comparison between Einstein's theory and the others is revealing, it seems biased toward quantitative science concepts. It is essential to understand that in social sciences, like anthropology, there are theories or hypotheses that, due to the very nature of their studies, will not have the same characteristics as those in the exact sciences or STEM fields, and this does not make them any less scientific.