

How can we distinguish between science and pseudo- science



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Pseudo-sciences, in discerning from proper sciences, are beliefs that appear and are claimed to be ??? scientific??™, but they do not adhere to be ad rem to real scientific methodologies and therefore are not accredited with this status, whereas real sciences are that they can be scientifically testable.

Fields that are classified as real sciences include biology, physics, and chemistry, while pseudo-sciences often encompass New Age practices, such as extra-sensory perceptions (ESP), astrology, channeling with ghosts and spirits, palmistry, tarot card reading, and crystal healing. In the modern era that we live in today, the instillation of scientific-thinking among people has led us to not recognize pseudo-sciences as real sciences because their hypothesises are commonly thought to be vague in credibility. Consider the difference between astronomy and astrology. Scientists can expound the processes on how stars are formed by the fusion of hydrogen and helium to create a sphere of plasma, and how these stars can shine together to form patterns that we see in the night sky as constellations. However, it seems scientifically implausible on the other hand in explaining how constellations can give people certain characteristics when they are born under a certain star sign. Astrology as a pseudo-science, compared to astronomy, which is a real science, is indeterminate since scientists have no means to verify or falsify on how it is possible that the movements and positions of celestial bodies are able to influence an individual??™s personality and fate.

The reason why most of these practices aren??™t attested as genuine sciences because they aren??™t proven to be scientific by inductivism. One component of this is observation. The advancement of technology has allowed scientists to proclaim new scientific discoveries, like discovering

microbes by using a microscope or faraway exoplanets by using a radar telescope. We learn best through perception, and it is often by through empiricism that it broadens our knowledge about the world around us.

It is because we rely so much on our senses that it is hard to substantiate the existence of something if we can't understand it fully by using them, such as the existence of ghosts. People may claim to have seen them on encounter, but how do they know that they're just seeing illusions projected by their own minds? The comprehension of pseudo-sciences is difficult to explicate since most of them are beyond what we could study through perception, and if it is something that we can't come to perceive, we declare that it doesn't exist, and this often leads pseudo-scientific hypotheses to lack substance when they are affirmed to be real. Another decisive component in stating whether something is scientific by inductivism is experiment. Since the hypotheses of pseudo-sciences are vague (or even fraudulent) and can't be assessed by perception compared to real sciences, experiments conducted on it can sometimes lead to anomalous results than expected. For instance, when a person investigates whether crystals can purify water by placing one in a jug and cure a sick person by giving the patient the water to drink, it is either that the treated water will have no effect on the patient, or the crystal may appear to really do have healing properties when the patient's health is eventually restored by it, but the curing could happen by other factors which has nothing to do with the crystal. The measurability and repeatability of pseudo-scientific experiments are indefinite that results can vary each time

it is done, which this hinders the validation of pseudo-sciences, as they are also hard to conclude as real from explicit demonstration.

Summing up, the main thing that distinguishes science from pseudo-science is that the laws of real sciences can be proved by both observation and experiment while pseudo-sciences cannot, and the vague nature of pseudo-sciences leads us to question whether if it is even real or not.