

Science vs Pseudo-Science

Most people seem to think that demarcating the pseudo-sciences from the sciences is somehow denigrating the respectability of the pseudo-sciences. I disagree. The pseudo-sciences don't get the respect it deserves because of a lack of operationalization (operationalizing is to turn general questions about a subject into measurable/testable propositions)—not because we refuse to call a spade a diamond. And this is a problem because there's a lot of pseudo-scientists doing important work and we can't discourage smart people from going into those fields because of a false presumption that it's not as worthy.

The term *pseudo-science* was coined by a 20th century philosopher, Karl Popper. Popper studied people like Einstein and Freud and recognized a difference in attitude between the two camps. The *Einsteins* looked for evidence that would disprove their theories, but the *Freuds* only looked for evidence that would support their theories.

A scientist's best hypotheses and theories are always tentative because some unthought-of experiment or a new piece of evidence could always prove them false. Yet a pseudo-scientist's theories are true as soon as *enough* people are convinced. In other words, all it takes is a single person to present some results from an experiment to disprove Einstein's Theory of Relativity and quash any credibility it had. But no one could conceivably devise an experiment to disprove Freud's theory of personality: the Id, Ego, and Superego. This is the operationalization problem.

Operationalizing lets scientists weed themselves out from the posers. Claims that've survived persistent attempts to disprove them automatically prompt credibility. Popper (a pseudo-scientist himself) distinguished pseudo-science from science to find better logical justifications for knowledge claims—not to dismiss one over the other. A pseudo-scientist might walk through life thinking they have a proven truth, all while being wrong. This is a real problem and one that pseudo-science needs to solve to earn the credibility—and by extension, respectability—of science.