Science vs Pseudo-Science

There's a lot of people that think that pointing out the differences between pseudo-sciences from the sciences is somehow denigrating the respectability of the pseudo-sciences. I disagree.

The pseudo-sciences have a lack of operationalization problem (operationalizing is to turn general questions about a subject into measurable/testable propositions). It's a problem because there's a lot of smart people doing important work in the pseudo-sciences and we don't want to discourage them.

The term *pseudo-science* was coined by a 20th century philosopher, Karl Popper.

Popper studied people like Einstein and Freud and realized there's a difference in attitude. 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. A pseudo-scientist's theories is true as soon as *enough* people are convinced.

In other words, Einstein's Theory of Relativity is disproved as soon as one person present some evidence from an experiment no one tested before. How do you 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 the pseudo-sciences.

Falsifiability is important. For good work earn its credibility, we need ways to objectively weed out bad work.