

# The six principles of scientific thinking

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THE SIX PRINCIPLES OF SCIENTIFIC THINKING Saleh Aldokhi Dr. Andy PSY 1000 - Section 3-02 Various concepts in psychology have greatly impacted on our lives particularly by changing how we approach the daily challenges that confront us. One of such concepts is the " 6 Principles of Scientific Thinking" which has helped scientists to eliminate the possibilities of a fabricated claim and differentiate a solid argument from mild hypothesis. Keeping an open mind when approaching an experiment or issue can be fundamentally important when evaluating the challenges that are deemed as emergent issues in the contemporary world.

The first principle is Ruling out rival hypothesis. It has been scientifically proven that most issues or questions have more than one definite answer (Lilienfeld, 2013). It is only through questioning of contradicting opinions or ideas that one can distinguish between educated and uneducated assertions, valid and invalid claims, and determine if significant alternate explanations were omitted in formulating the findings.

The second principle is that of correlation vs. causation. In many occasions, one can find two totally distinct variables with matching decreases and can simply confuse the variables to be positively correlated. The conclusion made will potentially be flawed. It is, therefore, important to have internal validity and be able to be certain that the causation relationship exists.

Falsifiability is another important principle which holds that for any assertion to be meaningful, it must be capable of being disapproved. If no evidence exists to plausibly disapprove the assertion, it can, therefore, not be meaningful and is termed as unfalsifiable.

Moreover, there is the principle of Replicability which forces psychologists to ask themselves whether the findings supporting a certain claim have been

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duplicated by other researchers or whether other researchers can replicate the findings (Lilienfeld, 2013). A researcher should be skeptical of any findings that cannot be duplicated.

Similarly, the principle of extraordinary claims is quite common and holds that strong claims require extraordinary evidence. If the claims are strong and no evidence exists to support them, then they are flawed.

Finally, there is the principle of Occams Razor which advocates that if there happen to be two equally good explanations for an occurrence, the simpler explanation should be selected. The hard explanation is deliberately left out.

These principles are imperative in our daily lives as they give us distinct ways of evading the daily traps and understanding social psychology which involves individuals with varying behaviors. Understanding behaviors is relatively difficult considering the many elements and procedures involved. The principle of correlation vs. causation is one that is often confused as many people end up concluding that ' X causes Y' simply because of their conjoint occurrence.

In an article by Michael, he indicates that 75% of catholic currently consider abortion to be immoral and claims that pro-life movement has contributed to making more American moral thus seeing abortion as immoral (Michael, 2013). In formulating the claim, the author failed to apply the principle of ruling out rival hypothesis. The increase in number of Catholics who perceive abortion as immoral can be explained by other factors such as the dangers involved in the abortion process and not automatically the work of pro-life movement.

Similarly, Dan Frosch asserts that legalization of marijuana will lead to economic growth due to the tax contribution that will be realized (Dan, <https://assignbuster.com/the-six-principles-of-scientific-thinking/>

2013). The hypothesis might be true for the states involved but cannot be replicated in other parts of the world. For instance, it cannot be replicated in weak economies where marijuana legalization will lead to moral decadence and more expenditure on health while hampering the population's aptitude and capability to work.

#### References

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