

Discovery and reason: science's pathway to truth essays examples

[Sociology](#), [Ethics](#)



Science is not the only way to discover truth. In this paper, I will explain how science attempts to uncover truth that is guided by reason and is based on knowledge that can be substantiated by empirical means. There are other ways to discover truth, but science is not concerned with these kind of truths.

Science attempts to figure things out by discovery. Discovering truth by empirical means is the cornerstone of scientific discovery. Even though no one saw the dark side of the moon until the Apollo missions of the 1960s, it is true that the moon had a side that observers on earth could not see.

Scientists based this truth on what they know about the moon, composition, its shape and so forth. This is what is meant by empirical means. For example, physicists say that it is true that atoms are made up of subatomic particles, namely protons and electrons. It is impossible to see an electron with the naked eye, but we can observe its effects.

When J. J. Thomson in 1897 hypothesized that the electron was a smaller particle inside atoms, no one believed him because they believed atoms to be small, “ fundamental units of matter” (American Institute of Physics 1997). Thomson discovered the electron by observing the behavior of cathode rays. These observations led him to the discovery of electrons. We may not think of it as important, but Thomson's discovery paved the way for the invention of television, and other electronics that people use everyday. The above example of the electron is a good example to show how science discovers truth. Thomson discovered the electron by trial and error and after many experiments because he was guided by reason and the perseverance to follow through with his hypothesis. One thing about science is that if the

conclusions do not measure up to the hypothesis then the scientist has to abandon his hypothesis and establish a new one. This is because modern science “embodies a logic fundamentally different” from how previously truth was thought to be (Chang 27). Science follows the reason of induction, which stems from Francis Bacon’s praise of “the method of careful observation and experimentation.”

For example, when I say “The moon is made out of green cheese” what do I really mean? Do I mean it literally? Even if I could not go to the moon and test its surface, this assertion could not be true from a scientific point of view unless it was shown to be true by exhaustive testing and careful observation. I can prop up a telescope and look at the moon magnified through the telescope’s lens. I can make careful notes about what I see and compare what I see to a block of green cheese. I will quickly come to the conclusion that the surface of cheese, whether it’s green or not, does not resemble the surface of the moon. The moon appears to be gray, and it has rocks and circular depressions most likely caused by objects that have struck its surface. The surface of cheese is soft and smooth and striated. They are not similar at all.

In a fairy tale, the moon is made up of green cheese. In Greek mythology, the gods and goddesses sit on top of Mount Olympus. Science is not interested in these stories. Although the stories of myth tell us indissoluble truths about human nature, science is founded on a different kind of truth-discovery.

I give this silly example only to show that there is a certain kind of truth in the assertion “The moon is made up of green cheese” that is not the same

kind of truth that science purports to discover. Scientific discovery is very important and the use of reason that science uses in the spirit of Francis Bacon has helped humanity to discover everything from electrons to the force of gravity. However, these are not the only truths and so it cannot be supported that science is the only way to discover truth.

In conclusion, science is not the only way to discover truth. Scientific truth is based on the scientific method that privileges empirical observation and inductive reasoning. Other forms of truth, including aesthetic, religious and mythological points of view are also justifiable means to discover truth.

Science has come a long way in its evolution from the time of early human history to the modern age, and to the current information age. A scientist can tell you the escape velocity needed to exit earth's atmosphere (or any planetary body), but a science cannot tell you the truth to be found in love, or in the awe one has when seeing a beautiful sunset. The truth of science has a different goal. While, admirable a goal it is, and indispensable, it is not the only pathway to truth.

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