Francis Bacon on the New Scientific Method (1620)

Clearing away idols: Bacon was preceded by centuries of medieval thought. Science before his time was, according to Bacon, mostly founded on opinions, dogmas, and superstitions. For instance, in Bacon’s time, magnets were thought to be supernatural, bloodletting was practiced to reduce fever, and the public generally sought the use of amulets, astrology, and other superstitious and supernatural sources for healing, etc. Bacon argues that science had been, up to that point, mostly rubbish.

Skepticism: What is the cause of all of this superstition? Ultimately, the cause is the human itself. Bacon writes, “the human understanding is like a false mirror, which, receiving rays irregularly, distorts and discolors the nature of things by mingling its own nature with it.” (41)

It seems that our beliefs, opinions, etc. taint and distort the way we perceive reality. They are a poor foundation for knowledge, since they are likely to change or be persuaded by our own natures, by our education, conversations, readings, admirations of authoritative figures, by our cultural and religious dogmas, and even by our mood. (42-44)

Furthermore, the human mind seems to commonly make the following errors:

- It supposes that there is more regularity and simplicity in the world than there is. (45) For instance, it was thought that all the planets moved in perfect circles, when in fact they move in ellipses.
- Once we believe something, we tend to focus only on what supports this belief, and ignore whatever contradicts it. (46) For instance, people tend to focus only on ANSWERED prayers for spiritual confirmation and ignore UNanswered ones; or pick out the TRUE information in a horoscope while ignoring the FALSE, thus confirming to ourselves that astrology is accurate.

The human mind cannot be trusted: In conclusion, it seems almost as if the human spirit “is in fact a thing variable and full of perturbation, and governed as it were by chance.” (42)

Not Skepticism: Bacon proposes to be merely clearing the field so that we can begin anew—but this time, build up only TRUE beliefs. (31) In other words, though the “new science” and skepticism begin with the same worries, this new science is NOT supposed to be a form of skepticism. It does, in fact, come to the OPPOSITE conclusion: Skepticism is FALSE. He writes:
The doctrine of those who have denied certainty could be attained at all has some agreement with my way of proceeding at the first setting out, but they end in being infinitely separated and opposed. For the holders of that doctrine assert simply that nothing can be known. I also assert that not much can be known in nature by the way which is now in use. But then they go on to destroy the authority of the senses and understanding; whereas I proceed to devise and supply helps for the same. (37)

**Call to a new science:** So, the call is simply to make way for a complete change in the way science is done. He writes,

> The discoveries which have been made in the sciences up to now are such as lie close to vulgar notions, scarcely beneath the surface. In order to penetrate into the inner and further recesses of nature, it is necessary that ... a method of intellectual operation be introduced altogether better and more certain. (18)

**The Method:** So, the change is FROM falsehoods and superstition, but what is the change TO? What is “the new scientific method”?

The method that Bacon proposes is induction: “The formation of ideas and axioms by induction is without doubt the proper remedy to be applied for the keeping off and clearing away of idols.” (40)

Induction is the form of scientific method as we know it today. We begin with a question that we want to answer, and we form some hypothesis as to what the answer is. Then we set up careful, isolated experiments in order to test for that hypothesis, while at the same time ruling out any other variables, and any other hypotheses that might produce similar results. In this way, we can build up our knowledge from scratch.

**Note:** Well... Not quite from scratch. Notice that Bacon takes the senses and our understanding as a given. He ASSUMES that our senses are reliable, and builds up his scientific system from there.

Is this assumption justified? What do you think?