

WHAT PHILOSOPHY ADDRESSES

Let us refresh our recollection on the way in which philosophy differs from *experimental* science and from *mathematical* science. The concern of—

- science is *the phenomena* of things ;
- mathematics is *the number, dimensions, proportions and shapes* (such as triangles, cubes, cones etc.) of things ;
- philosophy is *the being* of things.

Experimental Science

Of a single instance of silver, for example, science abstracts various phenomena in order to arrive at an understanding of the natural reality *silver* in itself. It can identify a great number of them including—
it's sonorous

melts at 960.5°	SILVER	it's malleable
it boils at 2000°		it's polishable
a supreme conductor of heat		a supreme conductor of electro-magnetic energy

These are properties, that is, phenomena proper to silver. And science defines silver by these observable characteristics. Its ability to define silver is limited to what is observable.

Or take light. Science notes these marks—

it renders things visible	LIGHT	it is critical to living things
it's a species of electro-magnetic energy		with a limited wave frequency
it's a conveyor of vitamin D		its speed of propagation is 299, 792, 458 mps
it seems to consist of a wave, or of particles, or both (!)		

Science can tell us a great deal about phenomena, appearances, of things. But its expertise is limited to what is observable. It cannot tell us *what silver is*, or *what light is*.

There is something else about science. It proceeds from effects to cause. That is, it proceeds *inductively*. To be absolutely certain about the reality it is investigating it must make many observations and investigate carefully its effects. And there is often the peril that it has not made sufficient observations to be sure of its conclusions. A good instance is that substance called 'heavy water', or deuterium oxide, which occurs naturally in water—according to science in a ratio of 1 : 6,000. It is formed from deuterium, an isotope of hydrogen comprising, according to scientific theory, a nucleus which contains a neutron as well as a proton. Deuterium Oxide has characteristics slightly,

and significantly, different from those of water.

Science is not alone in facing the perils of induction. Every police officer investigating a crime, every judge considering the evidence put before him, is engaged in an inductive proceeding. And police officers and judges can err in their determinations, as history shows.

Induction
proceeds like this

Cause
↑
↑
↑
Effects

Mathematics

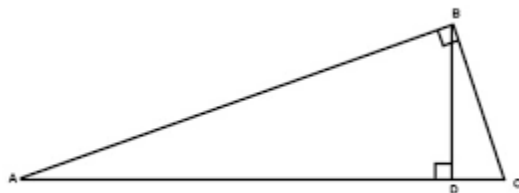
The mathematician considers reality at an even greater level of abstraction. He is not concerned with silver or gold or water or any other element or compound, but with number, dimension, proportions, and so on. In fact, he does all his work in his head feeding his intellect using imagined forms. He does not need the realities. His level of abstraction exceeds that of the experimental scientist. Moreover, he addresses his subject in a fashion opposite to that of the scientist.

Consider the humble triangle. The mathematician elaborates from its simple form corollaries such as the following :

Internal angles = 2 right angles One circle will pass through each of its apices (apexes).

Area = $\frac{1}{2}$ base x height

Each of its sides is a tangent of a circle



If one of its angles is a right-angle, the opposite side is the circle's diameter

The mathematician does not proceed from effects to a cause. He has the cause already—it is the triangle. His task is to work out the effects (corollaries) of the cause. So the mathematician proceeds by way of deduction.

Deduction
proceeds like this

Cause
↓
↓
↓
Effects

Deduction has this immense advantage over *induction* that all the effects are contained (implicitly) in the cause. Which is why the mathematician regards his discipline as superior to that of the scientist. This advantageous character of mathematics attracts the scientist who borrows its precision to assist him in his experiments and observations.

Here is a note of interest to readers of fiction. Those who have read Sir Arthur Conan Doyle's stories of the fictional detective, Sherlock Holmes, will recall the author's insistence that his hero is engaged in deduction as he uncovers from various clues the identity of the perpetrator of a crime. But Conan Doyle was wrong : what Holmes was engaged in was not deduction at all, but *induction*. Although Holmes boasted that he could achieve his results with the precision of the mathematician, this was only because the clues to identify the culprit were pre-programmed by his author. In real life forensic work never approaches the certitude that the mathematician can offer.



Basil Rathbone as Sherlock Holmes

Philosophy

The object of philosophy is *the being* of things. It is not concerned with the phenomena they manifest, or their number, shape, size or proportions, but what *sort of being* they manifest. We have addressed this in previous lessons. Does such and such a thing exist *in its own right* or is it incapable of existing *save in something else* ? Is it a *substance* (definition = be-in-self), or an *accident* (be-in-other).

Here is another consideration : does a thing exist *from itself*, or only *from some other* cause ? Is *what it is* (its essence) the same as *that it is* (its existence) so that it is self-subsistent ? Or is *what it is* distinct from *that it is*—so that there must be some cause that unites its essence and its existence and keeps them united.

What is to be said about this thing or that as regards being is implicit in the thing, so that philosophy resembles mathematics in its *modus operandi*. For it teases out of the thing, whatever it be, the nature of its being. It proceeds from a cause and elaborates its corollaries. It is *deductive*, not inductive.

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An Interesting Objection

Joseph has come up with an interesting problem. He put this proposition :

If light is an accident—and we never see it except in its effects—why can we not say about

God, since we only ever see him in his effects, that he too is an accident ?

How do you solve a dilemma, or answer a difficult question ? You must make a distinction, or distinctions. What is the key, the platform, as it were, on which the question, the dilemma Joseph has raised, stands ? *Visibility*, and its contrary, *invisibility*. God is invisible ; so is light.

But they are not alone. There are many things which have the property of invisibility. For instance—

Immaterial level		Material level	
<i>subjective</i>	<i>objective</i>	<i>substantial</i>	<i>accidental</i>
substances	concepts	corp. substances	light
angels		<i>aether</i>	radio waves
God		air	x rays

Visibility and invisibility are accidents, something that befalls a thing. I am invisible—you are invisible—50 metres down the Grill Cave at Bungonia with all our torches extinguished. Visibility is not essential to our existence or our essence. I am still a rational animal, a man, as are you in pitch darkness. It is pretty obvious, then, that an accident, without more, provides no criterion from which to judge *what* something is. To do that we must look not at what is accidental, but what is essential to it. Here is the distinction—

	[<i>essential</i> (or <i>per se</i>) to it
Something may be	[or,
considered either	[
as to what is—	[
	[<i>accidental</i> (or <i>per accidens</i>) to it.

What is essential tells us what sort of being the thing is. What is accidental tells us only something about it. To understand the difference between light and God we have to look at the essence of each.

Light is an accident whose function is to render a body visible. God is a substance, that particular substance whose essence = existence. You and I *have* existence ; God *is* existence, always bearing in mind that existence (be) is an analogical term. When said of God and when said of light it is somehow same, somehow unsame, but more unsame than same.
