# REASONING

Reason is the power of intellect as it is found in man. It is called 'reason' because of its peculiar mode of operation. Our intellect grasps or apprehends realities; but when it proceeds from the knowledge of one reality to knowledge of another reality it does so in a step we call it 'reasoning'. We pass from what we know already to what we do not yet know: we discover, we demonstrate, we progress in knowledge. It is by reasoning that man attains to the truth. We take the advantages of *simple apprehension* and of *judgement* to a conclusion. Reasoning is the third, and most complex, of the operations of the human mind.

reasoning
↑
judgements
↑
apprehensions

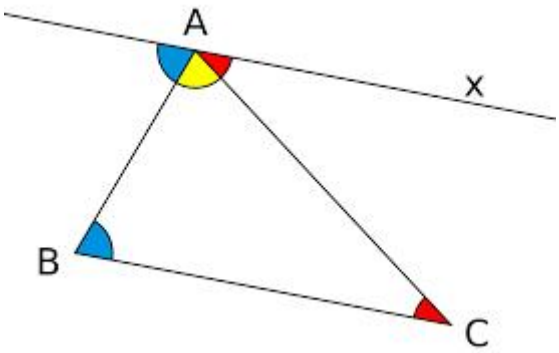
*Reason's Two Modes Of Operation*

Now reasoning requires more than that we know one thing AFTER another, or one thing IN another. What is necessary is that the mind proceeds to know one thing FROM another. That is, from the knowledge of one thing we proceed to the knowledge of another. We move from one truth to a truth formally diverse.

Before we explore this further, let us note that human reasoning operates in two ways, in a fashion which is either—

| | | | | | |
|---|---|---|---|---|---|
| [ deductive | proceeds from cause to effect | | [ whose | - | *the syllogism* |
| [ or | | & | [ argument | | |
| [ inductive | proceeds from effects to a cause | | [ is | - | *induction* |

In *deductive* reasoning the effect is always contained *virtually* (that is, in potency) in the cause. So the corollaries of triangle (its necessary effects) are contained in its reality as a plane figure bounded by three straight lines (e.g., internal angles = two right angles; is always able to be inscribed within the segment of a circle; its internal area = half the base x the height; etc…). Deduction is the proper mode of reasoning of the mathematician and geometrician, and of the metaphysician.




Pictorial illustration of one of Euclid's proofs

In *inductive* reasoning, the effects have to be adequate for the mind to be sure of the cause, as for instance in the following illustration:

> This fluid boils at 100° C, freezes at 0° C, and when frozen it increases in volume so that it floats;
> But water has all these attributes,
> Therefore this fluid must be water.

Well, perhaps so. But if the scientist discovers some other attribute of the fluid which breaches the rule, then it is *not* water, or it is not all water, as scientists discover with 'heavy water' which is 11% denser than ordinary water. *Induction* is the proper mode of reasoning of the scientist, of the detective, of a court considering whether there is sufficient evidence to sustain a charge. And, yes, because of the limitations of inductive reasoning, it is possible for a man to be wrongly convicted.

There is much confusion in the modern world between the two modes of operation which is demonstrated by Sir Arthur Conan Doyle's fictional figure Sherlock Holmes. Time and again in his stories Conan Doyle will have Holmes assert to his assistant, Dr Watson, that he is engaged in deduction. This for instance—"By a man's finger-nails, by his coat-sleeve, by his boot by his trouser-knees, by the callosities of his forefinger and thumb, by his expression, by his shirt-cuffs—by each of these things a man's calling is plainly revealed." (*A Study in Scarlet*, Ch. 2) So it may be. But the detective will not be proceeding deductively. He will be noting effects and looking for the cause—the man's profession—he will be proceeding *in*ductively.

Elsewhere in the same chapter of this story Conan Doyle has Dr Watson assert of Holmes: "His conclusions were as infallible as so many propositions of Euclid." Colin Dexter, author of the *Inspector Morse* series of stories, wrote a couple of stories based on Conan Doyle's plots which arrived at different solutions, solutions just as logical as those of Holmes, illustrating that there was nothing infallible (as there is in *deductive* reasoning) about his conclusions.

The root of the confusion over the two modes of reasoning lies in the abandonment of the metaphysics of Aristotle in favour of the blend of materialism and subjectivism which constitutes each of the varieties of modern philosophy, and of confusion in the use of language these philosophical errors have generated.

*The Syllogism*

The mode of reasoning proper to deduction is the syllogism, a word derived from the Greek verb 'to reason'. A syllogism is an argument which proceeds from one universal truth to another universal truth. But the mind cannot proceed from one truth to another unless there is identity between terms. Hence, it depends on an underlying principle which is this—

> ***Those that are the same with some third are the same with each other; and those of which one is same with a third but the other is not are diverse from each other.***

We can illustrate it like this:

if A = B, and B = C, then A = C;
and conversely,
if A ≠ B, and B = C, then A ≠ C.

So—

If *dog* is a four footed animal that barks and wags its tail
And *Lucy* is a four-footed animal that barks and wags her tail
Then *Lucy* is a dog.

And, contrastingly—

If *cat* is not a four footed animal that barks and wags its tail
And *Lucy* is a four-footed animal that barks and wags her tail
Then *Lucy* is a not a cat.

*Reasoning Requires Progress To Another Truth*

It is not enough for a syllogistic argument that it does no more than elaborate one truth in another proposition which expresses the same truth. Let us illustrate by the following argument.

Every man is mortal
But, John Pat is a man
Therefore John Pat is mortal

Here the truth 'John Pat is mortal' is contained virtually in the first premise 'Every man is mortal'. There is no progress in knowledge. The mind merely steps sideways, as it were, to another knowing of the same truth.

Whereas, in the following argument a different process occurs:

The spiritual is immortal,
But the soul of man is spiritual,
Therefore the soul of man is immortal.

The mind progresses from one truth to another. For when the mind knows 'the spiritual is immortal', it knows only the identity between 'the spiritual' and 'immortal'. It does not know either the identity between 'soul of man' and 'spiritual', or the identity between 'soul of man' and 'immortal'; and indeed, even as it comes to grasp that 'the spiritual is immortal', it may be ignorant of the other two. But with the addition of knowledge of the identity of 'soul of man' and 'immortal', it is able to make the rational inference which is the argument's conclusion, 'the soul of man is immortal'.

A syllogism is an argument which proceeds from one universal truth to another universal truth. But an argument cannot proceed from one universal truth to another save by reason of identity of the terms contained in the propositions. If S stands for the subject, P for the predicate and M for the medium of demonstration (or middle), S is identified with P by reason of M, as follows—

S = M
But M = P,
*Ergo* S = P

*Terms & Propositions*

Let us distinguish carefully between terms and propositions. A term is, in Logic, simply the sign of a concept, a word whether written or spoken. In the above pro-forma argument, there are three terms, S, M and P. These are combined in three propositions, S = M, M = P and S = P.

Now note that since M is the cause or reason of the attribution of P to S, it must itself be communicable to S; but to be communicable to many is to be universal. Hence, the principle of the syllogism resides in the universal nature. That is, M must signify some universal nature.

Let's go back to the argument above—

The spiritual is immortal,
But the soul of man is spiritual,
Therefore the soul of man is immortal.

Here the universal term (M) is 'spiritual', i.e., subjectively real immaterial being. The argument involves an alteration of the order cited above as standard, and reduces to this:

| | |
|---|---|
| The spiritual is immortal, | M = P |
| But the soul of man is spiritual, | S = M |
| Therefore the soul of man is immortal. | S = P |

Nor does it matter, provided the three terms are involved and the three propositions are built on them.

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