U1\_L1\_ALL4 KEYS

What does "The Barometry Story" teach us?

Critical Thinking- a guided discussion

Adapted from <https://www.panarchy.org/calandra/barometer.html>

(1) *Critical thinking* as outlined in textbooks usually appears as some variation of the pattern of observation, hypothesis, and verification. Man has used this method for many of his activities for a very long time - in fact, ever since he came into existence. In his search for food and shelter, he had not observed, made hypotheses, and verified them by experiment, he wouldn't never have survived. (2) Thus, *Critical Thinking* ability is part of man's mental equipment, and in one way or another it is as natural for him to think critically as it is for him to eat and breathe. Therefore, the method of critical thinking is a natural result of the evolution of the human being and not an invention of scientists; it is human method and not a thing characteristic of Science only.

(3) A reasonable question to ask in this connection is: "*If Critical Thinking* is so old, how does it happen that the disciplines of physics, chemistry, and biology did not develop long before this time?" Much of the answer to this is quite simple. In the growth of a subject there is a point, the discovery of key ideas which, when reached, makes for very rapid progress. In physics, much of this occurred with the formulation of the laws of motion in the 17th century; in chemistry it took place with the discovery of oxygen in the 18th century; and in biology, it was the development of the theory of evolution in the 19th century.

Science, the study of our physical environment, develops much like the solving of a jigsaw puzzle. In the beginning, it is hard to get started, but after a number of key pieces have been found and fit into place, progress is quite rapid. The characteristic feature of Science is that it has found many of the key pieces required for putting together the puzzle of the physical environment. The reason why this happened first in science is that the study of the physical environment is much simpler than that of our social environment.

(4) The moral of all this is that Critical Thinking is a thing peculiar to Man rather than Science, and a scientist is not a different kind of person from the rest of humanity.