



Chapter 11: Francis Bacon and New Directions

By: Kenneth Rossi, Jr.



Background

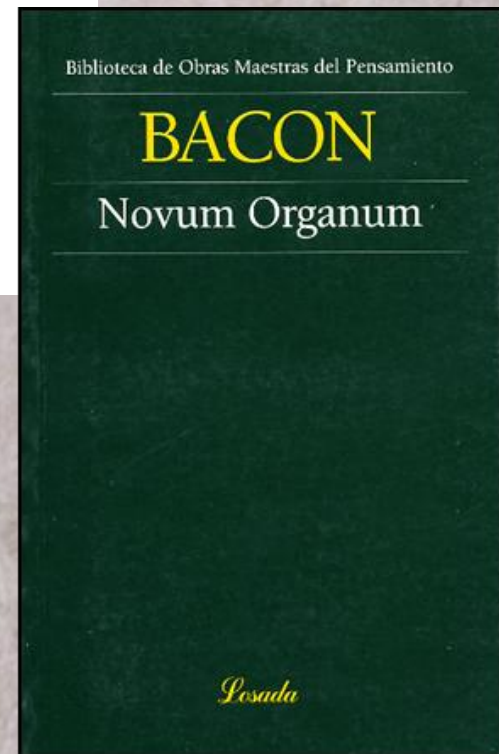
- Born January 22, 1561.
- Became a barrister and installed as a reader at the Gray's inn in 1582.
- In 1584, became a member of Parliament.
- Favorite of Earl of Essex until 1601 (where he prosecuted the Earl for treason).
- Attorney General (1613) and Lord Chancellor (1618).
- 1621- impeached by Parliament for corruption in office as a judge.
- Devoted last five years of life to philosophical work.
- Died in April 1626 of pneumonia after experiments with ice.

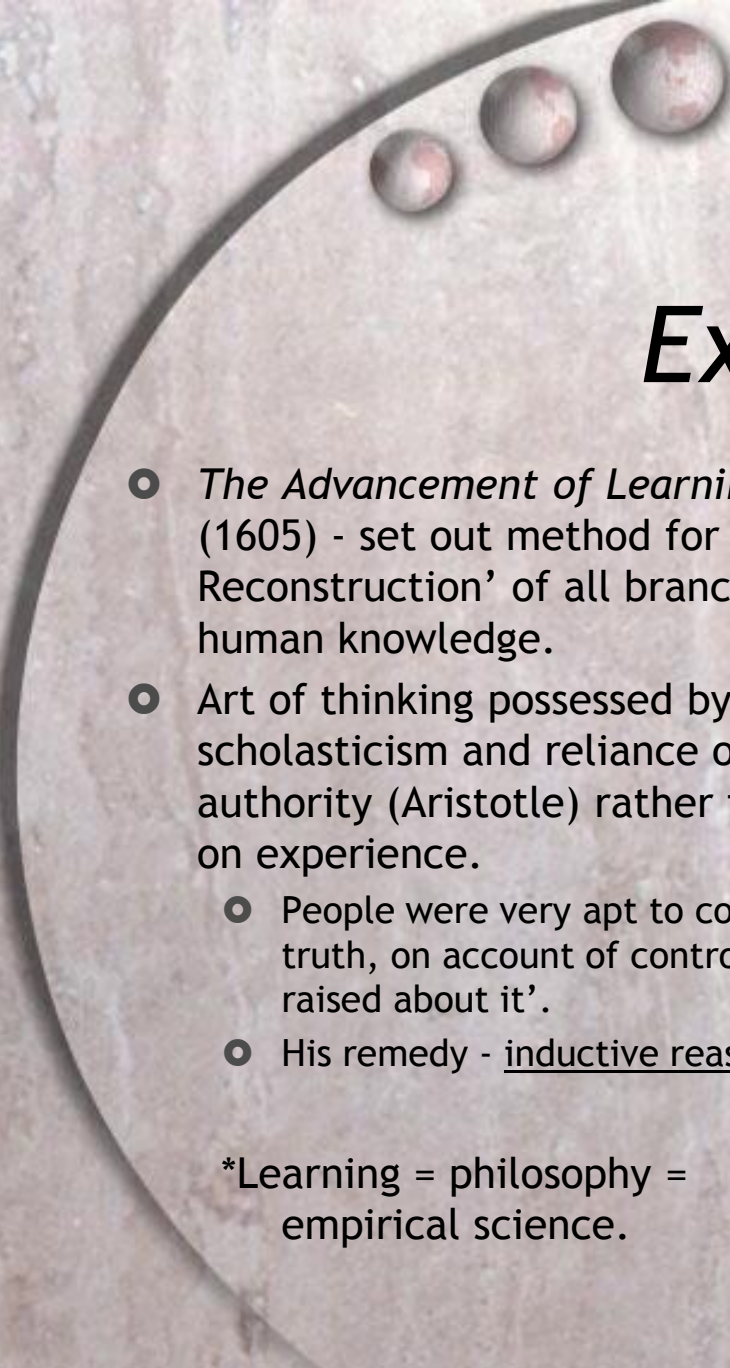


Works

- Published some 30 philosophical works (most in Latin).
 - Nature and Knowledge
 - Logic of science and the ideal state
- Declared aim to reform, improve, reorganize and harmonize branches of knowledge.

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TIFF (Uncompressed) decompressor
are needed to see this picture.






The sure basis of knowledge: Experimental Science

- *The Advancement of Learning* (1605) - set out method for 'Great Reconstruction' of all branches of human knowledge.
- Art of thinking possessed by arid scholasticism and reliance on authority (Aristotle) rather than on experience.
 - People were very apt to condemn truth, on account of controversies raised about it'.
 - His remedy - inductive reasoning.
- Three ways for advancing philosophy: *two wrong and one right*.
 - First wrong: groping in the dark
 - Second wrong: following authority of the ancients
 - Right: build knowledge by testing as we go, from experiment to experiment.

*Learning = philosophy =
empirical science.

*Laws of nature must be learned.


*Humanity's prime task in the
world is to master nature.






Ideas on Metaphysics

- Traditional metaphysics considered itself with:
 - Notions of being and non-being
 - Of accident and essence
 - Of substance and form
 - Provided opportunities for interminable discussion.
 - Logical consistency was the criterion of truth.
- Bacon's reformed ideas:
 - Metaphysics as the basic science of material physics.
 - Three levels of natural inquiry:
 - Collection of scientific data
 - Investigation of particular natures and causes
 - The clarification of the fundamental forms of things




Separation of human truth from the dogmas of revealed religion

- Careful not to attack religion
 - Truths of religion ‘placed beyond, and exempted from, the examination of reason’
 - Human knowledge (based as it is on experience) is limited to sensible, material and finite things
 - Deliberately limits himself to analysis of experimental knowledge and not that of religion or how faith differs from experimental knowledge.
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Novum Organum (1620)

- Bacon opposed Aristotle's deductive *Organon* of logical analysis.
 - New method - inductive - argues from particular cases to a general formula.
 - Test assertions of the connections between things by checking whether these connections really exist.
 - Describes the true method of experience, the scientific method of inquiry
 - 'lights the candle' - hypothesis
 - By means of the candle, shows the way - arranges the experiment
 - Commencing as it does with experience duly ordered and digested, not bungling or erratic, and from it deducing axioms, and from established axioms again new experiments'.
 - Doctrine of forms based on 'naturalism' - reality as operating in terms of principle of determinism.
 - Four Idols that interfere with the acquisition of knowledge by distorting our understanding of the nature of things:
 - Idols of the Tribe
 - Results of human nature directly
 - Thinking improperly affected by personality, will and passions.
 - Idols of the Cave
 - Arise from individual nature, education and environment
 - Idols of the Market-Place
 - Arise by virtue of human intercourse and the peculiarities of language
 - Idols of the Theatre
 - Arise from teachings based on philosophical systems
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Bacon and God

- He accepts a Creator but rejects sectarianism.
- ‘Agnostic’
 - A balance of probabilities, that God exists, but , except that He created the universe, we know nothing further about Him.
- Through philosophy, we can come to know the goodness and power of God as set forth in His created works.
 - Wisdom respecting the supreme being cannot be attained by reason and sense but only through revelation.
- Bacon’s philosophy of nature, humanity and God:
 - *“It is true that the contemplation of the creatures of God hath for end (as to the natures of the creatures themselves) knowledge, but as to the nature of God, not knowledge, but wonder...Therefore attend His will as Himself openeth it, and give unto faith that which unto faith belongeth; for more worthy is to believe than to think of know.”*

Word Processing

- Discourses on the use of ciphers and codes, giving examples.
 - ‘Bilateral alphabet code’
 - Modern day binary system, using A and B instead of 0 and 1.
 - Translating each individual letter of message into As and Bs according to certain scheme.
 - Five choices to make between two letters.
 - 2 to the power 5; 32 choices

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Word Processing cont.

- American Standard Code for Information Interchange (ASCII) developed from basic ideas of Bacon.

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Conclusion

- Francis Bacon provided the main key to the modern world outlook.
- Criticism of scholastic philosophy and Greek dialectical heritage brought new spirit into arguments about origins and pursuits of truth.
- He was also able to bring light of reason to bear on the errors and superstitions of the learned.
- Most important writings centered on 'method'
 - Idea of scientific inquiry as opposed to philosophical discussion and rhetoric.
 - Induction from observation and experiment.
 - Provides the scientist with both the method and the data which eventuate truth.
- However, he was silent on a great number of questions that were bedevilled by controversy
 - Refusal of involvement is more eloquent than arguments by disputants.
- Turned away from verbal arguments and provided new role-model for scientific era he inaugurated.
- No contribution to number, but contributes to attitude and basic assumptions enlightens understanding of nature of numbers, and releases from idealism and scholasticism which dominated his day.
 - *The harbinger of the new era...*

References

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