

 Sample essay

THE SCIENTIFIC RENAISSANCE	
Referencing	In-text : (Boas, 1962, p.XX)  Post text : Boas, M. (1962). <i>The Scientific Renaissance: 1450-1630</i> . New York: Harper and Row.
P247	Eager desire to increase the possibilities for acquiring a scientific education ... friendly meetings ... exchange of ideas
P247	Francis Bacon ... most vocal proponent of science possible
P247	Scholastic modes of thought were utterly sterile and useless
P247	Science could provide the key to the truth and only empiricism could provide the key to science
P248	Bacon's aim - to reform all knowledge and create a "new learning" in place of the old ... he believed in the reform of scientific method by the possibility of improving all learning
P249	The benefits of learning: rightly pursued ... <ul style="list-style-type: none"> <li>• it improved the mind,</li> <li>• strengthened the character,</li> <li>• ennobles (raise rank in nobility) the citizen and the state, and</li> <li>• is a source of power, delight and utility to man</li> </ul>
P249	Learning as practiced (using Aristotle's methods) may appear none of these things, but that is because it is subject to <ul style="list-style-type: none"> <li>• abuse,</li> <li>• pederasty,</li> <li>• excessive reliance on authority,</li> </ul>
	Bacon believed that scholasticism was "utterly sterile and useless"
	Empiricism -> science -> truth
	Aristotelian methods do not provide the benefits of learning

	<ul style="list-style-type: none"> <li>• ignorance,</li> <li>• the self-esteem of its proponents,</li> <li>• the pitfalls of the human mind (ideals),</li> <li>• mysticism and</li> <li>• limitation of range</li> </ul>	
P249	<p>The worst of all defects... men generally have sought knowledge for the wrong reasons:</p> <p>Men have entered into a desire of learning and knowledge sometimes upon...</p> <ul style="list-style-type: none"> <li>• Natural curiosity and investigative appetite</li> <li>• Entertain their minds with variety and delight</li> <li>• Ornament and reputation</li> <li>• Enable them to victory of wit and contradiction</li> <li>• Lucre and profession</li> </ul> <p>Seldom sincerely to give a true account of their gift of reason, to benefit and use of men</p> <ul style="list-style-type: none"> <li>• Power; synonymous with understanding</li> <li>• Truth; control of nature</li> <li>• The "relief of man's estate", the application of science to the useful arts that could improve the material well-being of mankind</li> </ul>	
P250	<p>He sought for "luciferous" (enlightening) knowledge</p>	
P250	<p>He believed that knowledge gave power to improve the lot of mankind, and to increase the sum total of human happiness</p>	
P250	<p>Greatest criticism was that men had sought learning for private and trivial reasons</p>	
P250	<p>[174 of Novum Organum]</p> <p>The sciences standing in the place of the things they mean, hardly changing, not getting any additions or subtractions, thriving not in the hand of their first founders (Aristotle) and declining from then on. The opposite of what</p>	<p>Science advanced the least due to the lack of any coherent method of procedure. It did not need the mechanical arts, built on past experience: one could not learn from another. Aristotle was a good scientist but no one knew more than him.</p>

	<p>happens with the mechanical arts, which are based on nature and light of experience: they (as long as they find favour with people) continually thrive and grow. Having a special kind of spirit in them, so that they are at first rough and ready, then manageable, from then onwards made smoothly convenient by use and always growing.</p>	<p>So the sciences should copy the mechanical arts in two respects: they should be "founded on nature" and they should learn to be cumulative. The greatest need was for the organisation of scientific method</p>
P252-253	<p>To Bacon, experiment was the only truly necessary ingredient of any scientific endeavour: without it, he thought, natural philosophy was no better than metaphysical speculation, and the scientist no better than the metaphysician who spun webs of a priori hypotheses out of his own inside. With experiment, the scientist possessed in his key he needed to unlock the secrets of nature: the use of experiment.</p>	<p>He was firmly convinced that the experimental method, properly developed, was the only true way</p>
P253	<p>to permeated co-operative endeavour, and it permitted various kinds of minds to contribute equally to the progress of science.</p>	
P254	<p>A scientific Utopia - The New Atlantis - scientific research centres/scientists working with each other, co-operative science</p>	

worked in **isolation** from each other, keeping their results secret rather than sharing them (Broad, 1958, p.49)  
 Every man's dominion over nature is possible only through **co-operative** activity (Losse, 1992, p.72)

- Background information

- ## PART I

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| <p>Aristotelian logic to seek explanation to what is <i>above</i> the explanation (anticipation of nature)<br/>         Bacon's making discoveries (interpretation of nature)</p> | <ul style="list-style-type: none"> <li>* Aristotelian imposed countless arbitrary restrictions on the nature of things" (Bacon, 1976, sec. 63)</li> <li>* Aristotelian philosophy was <b>aimed at explanation</b>. Aristotle was not interested in the "facts" themselves so much as in what he called the "reasoned facts," i.e., knowledge by knowing why things (Dear, 2004, p.4)</li> <li>* Aphorisms 129/130</li> <li>* Bacon opposes <b>Aristotelian <i>anticipatio naturae</i></b>, which favored the inquiry of causes to satisfy the mind instead of those "as will direct him to give him light to <b>new experiences and inventions</b>" (Klein &amp; Gigliotti, 2016, sec.2)</li> <li>* Bacon calls his new art <b>Interpretatio Naturae</b>, which is a logic of research going beyond ordinary logic, since his science <b>aims at three inventions</b>: of arts (not arguments), of principles (not of things in accordance to principles), and of definitions and</li> </ul> |
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acquiring knowledge and he discusses **the phantasms which enter and occupy the minds of men to the exclusion of truth**. Such phantasms, which he calls **idols**, are of four kinds: those which inhere in the human race generally, in which the human understanding colours and distorts the nature of things, are called **Idols of the Tribes**.<sup>1</sup> Erroneous ideas resulting from the search by people, each influenced by his own personality, for "sciences in their own lesser works and not in the greater or common world" produce **Idols of the Cave**.<sup>2</sup> Because words govern reason, according as reason governs words, those errors resulting from the reaction of mere words upon the understanding are "Idols of the Market-place." Those errors received by the mind from accepted

After noting the fruitlessness of the sciences, Bacon enumerates the causes. There are, he says, only six centuries of the twenty-six which the learning of man extends: These were centuries of learning—the ages of the Greeks, the Romans, and the Renaissance. Moreover, since natural philosophy had been made subservient to other study, it has been least cultivated. **The true goal of the sciences, mistaken by men, should be the grant of new discoveries and power to humanity**. The false notion that "the human mind is impaired by close study of particulars and by experimentation has retarded thought. The task imposed by humanity upon itself is too slight. Material possessions and antiquity have been too much esteemed. Excessive religious zeal and superstition have hindered progress. Science has been discouraged, and advancement therein has not been appreciated or rewarded; even worse, men have despaired of scientific accomplishment. But he hopes for a bright future for science through a new kind of induction which will discover first principles and lesser axioms.

Book I, which includes the essence of *Cogitata et Visa*, closes with a statement made several times in his works that he has no desire to found a school of philosophy: that he was seeking not fruit but light; and that **his ultimate goals are utility and truth**. A natural history and a systematic induction are the things to be desired. His method of induction explained, he closes:

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