Bacon's Doctrine of Idols

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Boston College

The Graduate School of Arts and Sciences

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BACON'S DOCTRINE OF IDOLS

A Thesis

By

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Abstract

The following sketch attempts to look at the ways in which Francis Bacon helped to bring about the modern age by presenting a system of skepticism, in the form of his doctrine of idols, which initiated the break away from classical philosophy and Christian theology and made room for a new, secular science. By looking at Bacon's peculiar and esoteric writing style as well as his detractors' assessments of him, I show not only what they got wrong about Bacon but also and more importantly that many of their criticisms of Bacon's role in the history of science and philosophy depend on his very success in brining about a reformation of men's minds. I show how far-reaching his doctrine of the idols is and how it initiated the trend in modern philosophy to create systems of skepticisms that are based on human reason's self-criticism. Finally, I show how Bacon's doctrine of idols led to his refutations not only of philosophical doctrines but of Christian theology as well.

Table of Contents

Chapter One: Introduction	1
Chapter Two: Reading Bacon on His Terms	
2. Avoiding and Interpreting Bacon	14
Chapter Three: Reasons for Skepticism 1. A Fragment of Idols 2. Four Idols: Three Innate, One Extrinsic	41 46 54
Chapter Four: The End of Destruction	72
Chapter Five: Conclusion	89
Bibliography	95

Chapter One Introduction

The present study attempts to outline some of the ways in which Francis Bacon breaks away from classical and scholastic thinkers and helps put the Western World, and subsequently the entire world, on the path of scientific and intellectual enlightenment. Bacon was the first to postulate the idea that human knowledge and power the same thing. To address the possible pernicious consequences of a world in which human beings continually exert more power over nature, Bacon justifies the project with this promise: an increase in knowledge leads to an increase in happiness through the improvement of life.

That we are all children of the modern age is not in dispute; and this age, although no longer in its infancy, has come to dominate the minds, bodies, and souls of human beings. The idea of technological progress no longer astounds us. By and large, we have come to view human progress as coincident with the progression of time itself. This leads to the tendency to think of the new as the better—the improved. This tendency is especially evident in scientific enterprises. When one speaks of the future of medicine, for example, one has in mind new cures, new medical technologies, new ways to identify medical conditions, and in

general, new and better means of helping people. In sum, we understand progress as the gradual improvement of the human condition.

But how do we now understand Bacon's proposition that knowledge is power? He tells us that the "force, virtue, and consequences of what has been discovered... is nowhere more apparent than in... the Art of Printing, Gunpowder, and the *Mariner's Compass*."¹ Clearly, each of these discoveries helps to expand human power. The first creates an easier way to disseminate thought. The third promotes the extension of human empire. But the discovery of gunpowder does not clearly lead to an improvement of human life; in fact, by providing more effective means of destroying life, the discovery of gunpowder seems to have increased our capacity, not to improve, but to worsen life. We often forget this pernicious aspect of progress. Do we delude ourselves in thinking that scientific progress exclusively alleviates human ills, and consequently, *always* improves human life? Are we blind to the fact that this same progress may create new ills? Or, is it that we are so taken by the goods and inventions of the scientific progress that its evils no longer trouble us? The fact that the possibility of the technological annihilation of the world no longer principally worries us suggests either that we believe resisting progress is futile or that the benefits of our innovations have desensitized us to their (potential) evils. In speaking of "the machine," George Orwell offers the following acute analysis from the Road to Wigan Pier.

The sensitive person's hostility to the machine is in one sense unrealistic, because of the obvious fact that the machine has come to stay. But as an attitude of mind there is a great deal to be said for it. That machine has

got to be accepted, but it is probably better to accept it rather as one accepts a drug—that is, grudgingly and suspiciously. Like a drug, the machine is useful, dangerous and habit-forming. The oftener one surrenders to it the tighter its grip becomes. You have only to look about you at this moment to realize with what sinister speed the machine is getting us into its power.²

However prophetic this sentiment appears to us presently, the "machine" of today grips us tighter, reaches far more, and holds greater power over us than Orwell could have imagined. We are again reminded that knowledge is power and that the result is ambiguous.

Why must we look to Bacon above others? Descartes, for example, is generally thought to be the first of the moderns. However, this opinion comes from two distinct, but related, tracks of thinking. The first is that Descartes's contributions to modern mathematics, optics, and more generally, physics are representative of the kinds of works of modern science. According to Carl Page, the second is that Descartes fundamentally altered the landscape of physics and metaphysics: "[w]hat is first in philosophy is no longer what is first in the order of being but what is first in the order of knowing."³ Page finds that Descartes's "subversion on behalf of his physics" is what is especially modern. Furthermore, he tells us that Descartes's "intensely single-minded, even jealous advocacy commends itself to all but the most stubborn antiquarian mentality as modernity's almost perfect philosophical representative."⁴ However, our study is concerned with the breaking away from the grips of antiquity. Our mentality, antiquarian as it may be, is that Descartes already inhabited a distinctly modern world, and this

world first articulated fully by Francis Bacon as a philosophical movement in

rebellion from much of the intellectual-political-religious world.

It is true that Bacon's reputation, especially with regard to his contributions to the modern project, has been significantly diminished. Graham Rees tells us that during the seventeenth century

Bacon's words were on everyone's lips, though not always fixed in their understandings. His writings were invoked by all sorts and conditions of individuals: virtuosi on the make, provincial projectors, improving colonialists, millenarian visionaries, Royalists and radicals, Anglicans and Puritans, Calvinists and Latitudinarians, educational and social reformers, promoters of the New Science and defenders of the Old Erudition. The celebrities of the Royal Society were seemingly as keen to associate themselves with Bacon's program as was the host of lesser figures who, as self-interest or philanthropy prompted, flocked to the noble but amorphous banner of the Experimental Philosophy.⁵

But it soon became "commonplace to ridicule Bacon's philosophy and criticize his moral outlook."⁶ And on the whole, this trend does not seem to be letting up. Robert Faulkner tells us that even recent scholars "depreciate Bacon's originality and historical influence."⁷ Faulkner, however, finds that Bacon's "ultimate ideas prove to be not commonplace but profound, and those who depreciate Bacon often remain entangled in some aspect of the *state of mind* (italics mine) that he inaugurated."⁸ In this vein, Laurence Lampert supposes that Bacon's reputation may have "fallen victim to [Bacon's] own success."⁹ David Stove, however, gives an account of a very different kind. He agrees, for instance, that Bacon's utilitarian conception of the scientific project is identical to the one we have today: the promise of science is to improve human life through the increase of knowledge; this increase leads to new applications; and these applications

increase human happiness through their use in the improvements to human life.¹⁰ But Stove finds that, until *the past century*, science had "never once brought up any marked increase in human happiness"; and this "simple historical fact is enough on its own to refute the Enlightenment delusions of Bacon."¹¹

However, even if we accept Lampert's contention that Bacon's success is the cause of his fallen reputation, then it is still unclear what helps Bacon could provide us today: the progeny of his project no longer find him relevant. Must we then content ourselves, not with contemporary scientists and innovators, but with historians of scientific and intellectual history? Also, even in the history and the philosophy of science, we find the same divide that Faulkner speaks of regarding Baconian scholars. The seemingly rigid dichotomy between admirers and detractors of Bacon is not a new phenomenon. Dana Jalobeanu draws attention to historian Stephen Beasley Linnard Penrose's summary of the peculiarity of Baconian scholarship:

Few philosophers have suffered greater variation in the reputation which has been theirs throughout the history of modern philosophy than has Francis Bacon. Carried by eighteenth century thought to a commanding position as the 'greatest, the most universal, and the most eloquent of philosophers' he was plunged in the nineteenth century to the despicable status of a man whose scientific method was never used by any real scientist, whose effect upon the advancement of science was, if anything, detrimental. From one point of view he was the first really great modern moralist; form another he was a contemptible schemer whose ethical advice had been best left unpublished. He was a staunch adherent of the Christian faith, who strengthened the hold of religion on the hearts of men; and he was a damnable atheist whose very effort was aimed at undermining all religion. He was personally a man of stainless character who was sacrificed for the misdeed of others; and he was a treacherous designer, corrupt, immoral, 'the meanest of mankind.' He wrote beautiful English and admirable Latin; and his English style was stiff and pedantic, while he 'knew no Latin.' The only philosopher who could come close to being favorably compared to him was Aristotle, or Plato; and yet there were few men in the history of philosophy who had not made a greater contribution to knowledge than had Bacon.¹²

The character of Bacon's reception is indeed unique. And as we see in Chapter Two, the more modern science, and specifically modern physics, expanded into, and permeated through, many aspects of human life, the more Bacon's reputation continued to atrophy. Current studies of Baconian scholarship "have a somewhat marginal status," and even works that feature Bacon prominently treat him as "a key figure in all sorts of historical revisionisms."¹³

Jalobeanu implies that the authors of these historical "revisionisms" do not feature Bacon so that they can reevaluate aspects of his philosophy. Instead, they utilize his philosophy to further their own revisionist theories and histories in other words, their own agendas. Apart from a limited (albeit growing) number of Baconian scholars who take his work seriously, revisionist academics instead have forced him to play the leading role in the theater of historiography as they rewrite the history of the world from the drawing boards of their idiosyncratic imaginings.

Instead of adulterating Bacon's philosophy so that it fits a certain agenda, some thinkers—and prominent ones to boot—tend to ignore or dismiss Bacon altogether. Martin Heidegger, one of the 20th century's preeminent thinkers—especially with regard to his thoughts concerning modernity—fails to address Bacon directly. According to Heidegger, the world picture "does not change from an earlier medieval one into a modern one, but rather the fact that the world becomes a picture at all is what distinguishes the essence of the modern age."¹⁴

But the lack of any mention of Bacon indicates that Heidegger finds Bacon's work irrelevant or inconsequential to an understanding of the modern age. And yet, Leo Strauss finds the most complete expression of the "systematic transformation of philosophic interest, which brought about the turning to history...in Bacon's philosophy."¹⁵ Heidegger also points to the turning to history as being essential to the modern age, but he does not credit Bacon for the turn. This is not to say that we must cast aside those who likewise cast aside Bacon, and only look to Bacon's admirers and supporters.¹⁶ It is to say, however, that even in works like "The Age of the World Picture," which fail to address Bacon directly, Bacon's words, works, and influence seem to be present.

To restrict the purview of this study, we chiefly look to the role that the *New Organon* has played in the demotion of philosophy, the reformation of the mind of man, the development and augmentation of the scientific project, and the metamorphosis of nature from a creative and controlling force to the object of man's dominion. We follow the idea that Bacon's reformation of an entire worldview, his turning to history, his "project of progress," involves not merely a scientific point of view (with respect to contributions in research) but a view of the whole. We must understand *what* Bacon turned away from, and it is the contention of this study that Bacon's contributions are only brought to light by looking at the whole—not merely pieces of his cosmology, his histories, his theory of light, and so on. Moreover, it is for this thesis to prove that Bacon's

vision for the world has become the reality of our world. What he saw as the potency of human civilization has come to fruition.

In Chapter Two, we attempt to provide a preliminary sketch of some of Bacon's peculiarities. The chapter first introduces Bacon's style of writing; and then it looks at common interpretations and misinterpretations of his works. Critics of Bacon tend to misrepresent Bacon's thought and misconstrue his words. Often, these errors stem from selective interpretations of Bacon, downright bastardizations of his thought, or the tendency of critics to avoid reading Bacon altogether. Some of these mistakes are intentional: authors advance their own agendas in the history of science and philosophy; and because Bacon happens to be a seminal figure in this history, he figures in their histories. However, others are products of Bacon's peculiar writing style; some consider Bacon to be the "last representative of a traditional 'esoteric' culture."¹⁷

This "culture" creates a fundamental difficulty in reading Bacon: his "views are not simply exposed to view, but become accessible only to a certain art of interpretation."¹⁸ We explore the question of how to read Bacon in the first part of Chapter Two. We see that misreading Bacon not only leads to mischaracterizing his thoughts, but also deepens the depreciation of Bacon as a thinker and his role in the history of science. The second part of Chapter Two offers an overview of various detractors of Bacon and his influence. We examine three main criticisms of Bacon. The first claim is that Bacon distrusted or disliked mathematics; because of modern science's reliance on mathematics, detractors

either claim that Bacon simply cannot be said to have had much of an influence on the history of modern science or that his influence is merely rhetorical, and therefore, superficial. The second claim is that Bacon was suspicious of the roles that hypothesis and theory have in scientific procedure; they contend that such a lack of foresight proves that his entire understanding of how science proceeds is faulty; he, thus, neither contributed to the project nor influenced those who did. The third depreciation of Bacon is that he *merely* supplied the rhetoric, the prophetic vision, of the project.

That we live in a modern age and that modernity has a special character to it are not generally questioned. The means as to how we inherited this character, not simply of residing in a technological age but of how we came to regard our age as fundamentally different from previous ages, occupies our time in Chapter Three. Accordingly, we attempt to show that the first step of Bacon's instauration is destructive; its goal is to draw man's attention to the deficiencies of the natural human intellect, and to purge the mind of its adherence to the deeply flawed philosophical and theological sects. He calls his first one hundred and fifteen aphorisms of Book One, "the destructive part."¹⁹ And in his *Plan of the Work*, Bacon lets us know that "since men's minds are so marvelously beset that they altogether lack a clear and polished surface to focus the true rays of things," he is "obliged to find a remedy for this too."²⁰ Because the human intellect is *not* like a clean and flat slate, Bacon either must help us eradiate the extrinsic idols of the human mind, or alert us to their perniciousness.

There are four idols of the human mind. Idols of the tribe are built into the very tribe or race of men and originate from "the human spirit, or from its preconceptions, its narrowness, its restlessness, contamination by the affections, the inadequacy of the senses, or mode of impression." ²¹ The second classification of idols, the idols of the cave, are idiosyncratic, and as such, "originate from the peculiar nature of the individual, both body and soul, as well as from education, custom and accident."²² Idols of the market are the third kind of idols. They develop through the "alliance of words and names," and are the "greatest nuisances of the lot"; in some cases, words and names confuse the mind into thinking that they refer to something real; this leads to disputes over words—not things—because the mind tends to reify words. The idols of the theatre comprise the final class of idols. They enter the mind (and are, therefore, not innate) through philosophical and theological doctrines as well as through the "misguided laws of demonstration."²³

Chapter Four, while still concerning the "destructive part," turns to some of Bacon's new "hopes." He juxtaposes these hopes with the false promises given by philosophies and theologies. Accordingly, we begin to see that the *New Organon* is not merely a book of science or method; it is a displacement of the past, a reformation of thought, and a revolution in the *way* human beings think not only about the world, but also about themselves. It is in this part of the study that we look at Bacon's refutations of the philosophies and theologies that comprise the idols of the market. We see that it was Socrates, a philosophier

without a school or works, who was responsible for turning men's eyes away from nature and towards themselves. In other words, the turn to moral and political things was the great mistake of philosophy. Accordingly at the end of Book One, Bacon proclaims that his method is to be followed not only in natural philosophy, but also—and most strikingly—in "logic, ethics, and politics."²⁴ This disclosure reveals the comprehensive praxis of the new method; the essence of the project and the application of the method are comprehensive.

To grasp fully Bacon's particularly modern approach to the acquisition of new knowledge, we must approach his works on his terms. His erudition is of the classical tradition, yet, he desires to raze this tradition to the ground. He is the architect of a new edifice, but he never saw its implementation or its completion (if it can ever be completed). He is man of the past, but the leader of the new. We must look to Bacon to understand him—not to those who simply took up the reigns to his project. Bacon reared and broke the horse, but he did so without a guarantee of success.

³ Carl Page, "Symbolic Mathematics and the Intellect Militant: On Modern Philosophy's Revolutionary Spirit," *Journal of the History of Ideas*, Vol. 57, No. 2, (April, 1996), p.233-253.
⁴ Page, "Symbolic Mathematics," p.234-5.

⁵ Graham Rees, "Baconianism," *Encyclopedia of the Scientific Revolution: From Copernicus to*

¹⁰ David Stove, *On Enlightenment*, (New Brunswick: Transaction Publishers, 2003), p.28-30.

¹¹ Ibid. p.30.

¹² Stephen B. L. Penrose, *The Reputation and Influence of Francis Bacon in the Seventeenth Century*, (New York: Columbia University Press, 1934), p.1-2.

¹³ Dana Jalobeanu, "Francis Bacon, Early Modern Baconians, and the Idols of Baconian Scholarship: Introductory Study," *Society and Politics*, vol.7.no.1. (2013),p.9.

¹⁴ Martin Heidegger, *The Question Concerning Technology and Other Essays*, trans. William Lovitt, (New York: Harper & Row, 1977), p.130.

¹⁵ Leo Strauss, *The Political Philosophy of Hobbes*: *Its Basis and Genesis*, trans. Elsa M. Sinclair, (Chicago: University of Chicago Press, 1963), p.86. Strauss implies here that the historicism of modern philosophy originated with Bacon.

¹⁶ It should be stated that some scholars, who do not neglect Bacon, still find his admires' praise to be misplaced. Stephen Gaukroger, for example, finds the lack of tangible advances in the sciences either to indicate that there is no way to test his method or that Bacon never really thought through what was needed to begin it in the first place. Yet, even Gaukroger admits that what "emerged in the West in the early modern era was a style of doing natural philosophy, a way of thinking about the place of natural philosophy in culture generally, and of thinking about oneself as a natural philosopher." However, he qualifies Bacon's influence in this new way of thinking, and states that this "phenomenon is wider than Bacon." [Stephen Gaukroger, *Francis Bacon and the Transformation of Early-Modern Philosophy*, (New York: Cambridge University Press, 2001), p.220; p.5.]

¹⁷ Jalobeanu, p.6.

¹⁸ Laurence Berns, "Frances Bacon and the Conquest of Nature, *Interpretation*, Vol.7.No.1, January 1978, p.15.

¹ *The Oxford Francis Bacon*: *The Instauratio magna: Part II Novum Organon*, Vol. XI, ed. & trans. Graham Rhees with Maria Wakely, (New York: Oxford University Press, 2004), p.195, *NO* I.129.

² George Orwell, *The Road to Wigan Pier*, (New York: Houghton Mifflin Harcourt Publishing Company, 1958), p.203-4.

Newton, ed. Wilbur Applebaum, (New York: Garland Publishing Inc., 2005), p.69.

⁶ Markku Peltonen, "Introduction," *The Cambridge Companion to Bacon*, ed. Markku Peltonen, (Cambridge: Cambridge University Press, 1996), p.1.

⁷ Robert K. Faulkner, *Francis Bacon and the Project of Progress*, (Lanham: Rowman & Littlefield Publishers, Inc., 1993), p.4.

⁸ Ibid.

⁹ Laurence Lampert, *Nietzsche and Modern Times: A Study of Bacon, Descartes, and Nietzsche,* (New Haven: Yale University Press, 1993), p.17-18.

¹⁹*OFB*, XI, *NO* I.115

²⁰*Ibid*. p.35.

²¹*Ibid.* NO 1.52.

²² Ibid. NO 1.53.

²³*Ibid. NO* I.61.

²⁴*Ibid. NO* I.127.

Chapter Two Reading Bacon on His Terms

We seek to form an introduction to Bacon's peculiar writing style in the first part of this chapter. Besides the inherent difficulty of reading aphorisms—they are purposely laconic—Bacon's own admissions as to what he says, and most importantly, what he does *not* say increase the likelihood of differing, contrasting, or simply incompatible interpretations. These difficulties are compounded by the fact that in this modern age, we seek clarity and exactitude. However, Heidegger tells us that the "rigor of mathematical physical science is exactitude," yet, the "humanistic sciences, in contrast, indeed all the sciences concerned with life, must necessarily be inexact just in order to remain rigorous."¹

However, a symptom of the modern age is to depreciate inexactitude and appreciate exactitude both in the physical and humanistic sciences. Modern readers face the deepest difficulty with obscure writing because they are familiar with the modern form of writing. Similarly, scientifically versed readers of Bacon must ask how he could be considered one of the founders of modern science if his writing embodies none of the characteristics essential to the activity and description of modern science. Modern science demands clarity and exactitude. Writings that are unclear, inexact, or purposely hard to follow are already at a

disadvantage when confronted by modern man. With the inexact, there is uncertainty; and with uncertainty, there is dismissiveness. In the second part, we look to some of Bacon's detractors and their purported criticisms of his thought. Although we might attribute some of these misinterpretations to the inherent difficulties of reading Bacon, others are either a product of avoiding Bacon's texts altogether or misconstruing them so that Bacon fits into some predetermined place in their narratives.

Eloquence in Silence

In the period from 1602-1609, Bacon started working on five works that remain unfinished and completed four works: *Thoughts and Conclusions, the Refutations of Philosophies, the Advancement of Learning,* and *the Wisdom of the Ancients.* According to Benjamin Farrington, Bacon only published the latter two works in an effort to "prepare the public mind for the later full disclosure of his views."²

In the unpublished and incomplete *Masculine Birth of Time*, Bacon claims that he cannot "put the matter plainly before us," but must employ "arts" and "subterfuges" in his writing.³ The minds of men are not yet ready for the full disclosure of the project. Bacon generally speaks of his "method." But his method and the *method* of its delivery are inherently connected. A method "must be found for quiet entry into minds"; it must be "mild and afford no occasion of error"; it must have in it "an inherent power of winning support and a vital principle which

will stand up against the ravages of time so that the tradition of science may mature and spread like some lively vigorous vine"; finally, the "science must be such as to select her followers, who must be worthy to be adopted into her family."⁴ In other words, Bacon's writing is and must be purposely enigmatical.

In the *De Augmentis*. Bacon tells us that there are occasions in which he has "determined to be silent, or to be very brief, which is the next thing to silence."⁵ There is "a kind of eloquence in silence," an "art of silence," and Bacon plans to teach it by his own example in his discussion of his civil science.⁶ In addition to being silent, Bacon also informs us of the style of delivery that he intends to employ. He explicitly states that his "method of delivery" is "Acroamatic," or esoteric (as opposed to the exoteric method), and it is the same method "used among the ancients."⁷ As Lampert makes clear, the inherent obstacle of using a purposely obscure method of delivery is that Bacon "must leave obscure what kinds of obscurity might be employed, and what subject matters might be appropriate for its employment."⁸ Likewise, Lampert observes that Bacon does tell us his intention for using this style. Bacon "describes only the intention fulfilled by obscurity: to keep out and to lure in."9 Bacon chooses this style "both for the avoiding of abuse in the excluded and strengthening of affection in the admitted."¹⁰ Lampert likens this explanation to what Plato says in the *Republic*: "to harm no one, and to do good to those who are good."¹¹ At the conclusion of the Valerius Terminus, Bacon imparts a sobering reason why he must employ the acroamatic style for the delivery of knowledge: "[t]hat there is no

composition of estate or society, nor order or quality of persons, which have not some point of contrariety towards true knowledge."¹² There is no doubt that there were very many who openly opposed "true knowledge" during Bacon's time.¹³

Lampert tells us that Nietzsche, after distancing himself from Kant's faith in the Enlightenment, rediscovered the difference between the exoteric and the esoteric.¹⁴ For example, in "A Supposed Right to Lie from Philanthropy," Kant tells us that to be "*truthful* (honest) in all declarations is therefore a sacred command of reason prescribing unconditionally, one not to be restricted by any conveniences."¹⁵ One might say that this dictum has had a prevailing effect on not only philosophy writings but also on the reading of philosophy. Apparently Nietzsche's rediscovery of the esoteric and the exoteric was likewise lost. For, Alexandre Kojève reports that Leo Strauss "has reminded us of what has tended to be too easily forgotten since the nineteenth century," namely, that one "ought not to take literally everything that the great authors of earlier times wrote, nor believe that they made explicit in their writings all that they wanted to say in them."¹⁶ Strauss explains his rediscovery of the esoteric and exoteric in the following manner:

In studying certain earlier thinkers, I became aware of this way of conceiving the relation between the quest for truth (philosophy or science) and society: Philosophy or science, the highest activity of man, is the attempt to replace opinion about 'all things' by knowledge of 'all things'; but opinion is the element of society; philosophy or science is therefore the attempt to dissolve the element in which society breathes, and thus it endangers society. Hence philosophy or science must remain the preserve of a small minority, and philosophers or scientists must respect the opinions on which society rests. To respect opinions is something entirely different from accepting them as true. Philosophers or science and society who hold this view about the relation of philosophy or science and society

are driven to employ a peculiar manner of writing which would enable them to reveal what they regard as the truth to the few, without endangering the unqualified commitment of the many to the opinions on which society rests. They will distinguish between the true teaching as the esoteric teaching and the socially useful teaching as the exoteric teaching; whereas the exoteric teaching is meant to be easily accessible to every reader, the esoteric teaching discloses itself only to very careful and well-trained readers after long and concentrated study.¹⁷

Also, if we compare the above summation of reasons for why philosophers have employed esoteric styles of writings with that of Bacon's statement that "there is no composition of estate or society, nor order or quality of persons, which have not some point of contrariety towards true knowledge," we come to understand why Bacon chooses the *acroamatic*, or esoteric, method for the delivery of knowledge.

Avoiding and Interpreting Bacon

We now consider some of Bacon's detractors so that we can pass judgments on the merits or shortcomings of their criticisms. There are indeed some so bold as to claim that Bacon has had *no* influence on the history of science or philosophy. Furthermore, even if we could prove that Bacon's influence was such that, in his absence, our world could be likened to George Orwell's dismal depiction of the Middle Ages, Bacon's writings would still be of no more use to practicing scientists today than if his impact were negligible. From the physicist's point of view, modern physics "is just one link in a long chain of events that started from the work of Bacon, Galileo and Kepler."¹⁸

However, we still have to take seriously the possibility that Bacon's link on the chain is a crucially important one. In the remainder of this chapter, we look at three main groups of Baconian detractors. The first group avoids reading Bacon, the second reads and misinterprets Bacon, and the third reads and interprets Bacon but finds reasons why he is not of crucial importance to their histories of the scientific project. Some scholars tend to twist words to fit their narratives; others completely misrepresent an author's thoughts and intentions. This is why Dana Jalobeanu's survey of the "idols of Baconian scholarship" is so novel. It is of no use writing off the most egregious corruptions of Bacon's thought as the product of philosophical and scientific carelessness. This is why Jalobeanu's study is instructive. However, because of her strict adherence to identifying the defects of scholarly works with Bacon's idols, she is forced to track down some rather obscure and irrelevant interpretative works. Nevertheless, Jalobeanu's survey helps to highlight two central and recurrent criticisms of Bacon. One is regarding the lack of mathematics in Bacon's works; detractors grasp onto this deficiency as evidence of Bacon's dislike or distrust of mathematics. The other centers on the idea that Bacon offers only vague promises and contributes nothing concrete to the modern project.

Bacon and Mathematics

There is a claim that Bacon disliked and distrusted mathematics as one of the "oldest and most entrenched idols of Baconian scholarship."¹⁹ Faulkner also

points to the prevailing nature of this "profound misunderstanding," and exposes those who promote such a misunderstanding by invoking Bacon's own words in aphorism eight of Book Two of the New Organon: "the investigation of nature turns out best when physics is given definition by mathematics."²⁰ Jalobeanu cites Thomas Kuhn's classification of sciences into the mathematical and Baconian as evidence of the "evaluative judgment" that Bacon "disliked and distrusted mathematics."²¹ In this chapter, however, Kuhn is careful not to speak for Bacon when he speaks of "Baconians." He differentiates between the classical and Baconian sciences-the latter being identified with a dislike and distrust in mathematics. Nevertheless, Kuhn does err when he conflates Bacon's followers' distrust of mathematics with Bacon's being "distrustful...of mathematics." In fairness to Kuhn, however, the passage in question regards Bacon's distrust "not only of mathematics, but of the entire quasi-deductive structure of classical science."22 Kuhn's chapter as a whole does not indict Bacon for his supposed "distrust" of mathematics. Instead, it offers numerous defenses for the Baconian enterprise as a piece of the scientific project of the 17th and 18th centuries.

The seeming obsession with Bacon's distrust, rejection, or indifference to mathematics makes up the majority of criticisms of Bacon *because of* the grip mathematics holds on modern physics today. This grip is not merely accidental; the language of physics is mathematics. Whether or not the universe was written in the language of mathematics or that mathematics offers up the best means to

understand the universe (because it is exact and precise) is another question altogether. Since Galileo, however, mathematics and the physical sciences have been inseparable:

Philosophy is written in that great book which ever lies before our eyes—I mean the universe—but we cannot understand it if we do not first learn the language and grasp the symbols, in which it is written. This book is written in the mathematical language, and the symbols are triangles, circles, and other geometrical figures, without whose help it is impossible to comprehend a single word of it; without which one wanders in vain through a dark labyrinth.²³

We need to understand that all practitioners and historians of modern science simply assume Galileo's position. In Galileo's *Two New Sciences*, for example, they see that it is not its dialectical form that makes it modern, but rather its use of mathematics to represent natural forces. This is why Galileo's language seems especially prescient. Modern historians of science seem to take for granted the interpretation of Galileo's quotation that takes it bearings from the contemporary use of mathematics in science: Galileo does not mean that the physical and the mathematical are synonymous; instead, Galileo states that the "language" of the universe is mathematical. One might say that this is a qualitative judgment, as well as a quantitative one. We describe the universe in a precise and exact way by mathematical figures and constructions. Bacon would certainly agree with Galileo that this use of mathematics (in physics) allows human beings to bypass many of the problems of spoken language that are the cause of the idols of the market.²⁴ So once again, it does not seem that Bacon neither distrusts nor dislikes mathematics.

Bacon also speaks of a labyrinthine universe, but the word "mathematics" is conspicuously absent. Bacon does, however, seem to aim for a guide to the universe in a similar way as to how Galileo describes the help of mathematics:

Now to the human intellect reflecting on it, the fabric of the universe looks in its construction like a labyrinth, where we find everywhere so many blind alleys, such deceptions and misleading signs and such oblique and intricate convulsions and knots of nature...For these difficulties cannot be overcome by any amount of genius or repeated gambling on the results of experience. No, our tracks must be guided by a [thread], and a sound policy must secure every step of the way right from the very perceptions of the sense.²⁵

Even though Bacon does not specifically advocate the use of mathematics to aid in the uncovering of nature, it is consistent with Bacon's contention that the "investigation of nature turns out best when physics is given definition by mathematics" to assume that the use mathematics figures largely in Bacon's conception of the scientific enterprise. Bacon, like Galileo, looks at mathematics as a tool, an instrument that helps translate the particulars and generalities of the universe into an intelligible map. It seems compelling to agree with Faulkner that a "profound misunderstanding has prevailed" concerning the relation between Bacon and mathematics. Also, if one agrees with Jalobeanu that this relationship is responsible for the majority of errors of Baconian scholarship, then we have to consider seriously the possibility that our modern interpretations of Bacon are clouded by our understanding of the intricate relationship between science and mathematics, a relationship with which Bacon not only had no problem but in fact, advocated.

In the *World of Mathematics*, James Newman credits Bacon with epitomizing the procedure that Galileo Galilei followed:

It was Galileo's way to turn back and forth from hypothesis and deduction to experiment: no one before him attained a comparable skill in blending experiments with mathematical abstractions. In all his investigations he followed the procedure epitomized in a famous passage of Francis Bacon: 'to educe and form axioms from experience....For our road does not lie on a level, but ascends and descends; first ascending to axioms, then descending to works.'²⁶

We see that in their respective commentaries on Galileo, Newman and Koyré come to seemingly incompatible judgments of Bacon's influence on the history of science. Newman does not quantify the impact that Bacon's "procedure" had on Galileo's methods, but the parallel between Bacon's prescription for a procedure and Galileo's use of that procedure in "doing science" is manifest. This observation does not address whether, as Alexandre Koyré thinks, Bacon's "role in the history of the scientific revolution was completely negligible."²⁷ It does, however, indicate that Bacon was not a fraud. Bacon did advocate a procedure that Galileo used and, at the least, Galileo's methods look remarkably like those of Bacon.²⁸

Accordingly, Kuhn comes to Bacon's defense against the "numerous historians, Koyré included, [who] have described the Baconian movement as a fraud, of no consequence of science." Kuhn finds that such an incorrect evaluation is a "product of seeing the sciences as one."²⁹ One might say that those who think the Baconian movement a fraud are subject to their own historiographical tendencies in evaluating the history of science. It goes without saying that Kuhn is also subject to this same criticism, namely, the desire *not* to

view the sciences as one. In the *Structure of Scientific Revolutions*, for example, the term "truth" occurs only in a quotation from Bacon. Kuhn found that Bacon's methodological dictum, "truth comes more quickly from error than confusion," correctly describes the "scientist's conviction that incompatible rules for doing science cannot coexist except during revolutions when the profession's main task is to eliminate all sets but one."³⁰ Kuhn thus found the perfect articulation of a fundamentally important aspect of his description of the developmental process of the sciences in Bacon's own presentation of eliminative induction.

It is difficult to pin down from where exactly these criticisms arose. Richard Kennington found that Immanuel Kant was probably the "last philosopher who took Francis Bacon seriously. Kant credits Bacon's "ingenious proposals" with partly initiating the turn to natural philosophy and partly inspiring others to continue on the path.³¹ Continuing this track, Kennington contends that because Kant's scientific and mathematical credentials are "more than adequate," Kant's "judgment of Bacon suggests that the meaning of the modern break with the tradition is independent of that turn to mathematics that we find in Descartes and his generation."³²

Laurence Berns takes the middle ground between those criticizing and those defending Bacon's understanding of mathematics. Although Berns, like Faulkner, cites aphorism II.8 from the *New Organon*, he also thinks that Bacon did "not seem to appreciate what might be accomplished by framing one's initial hypothesis in terms that are representable by mathematical symbols."³³ Berns

distills the gist of the mathematical criticism of Bacon: Bacon did not know the "technique of representing physical entities by mathematical symbols, so as to allow what one already knows from mathematics to suggest undiscovered relationships between the represented physical entities."³⁴ It is this process that has been so successful and has been central to the advancement of modern science (especially physics).

Hypothetical Criticisms

The other main criticism of Bacon's philosophy regards the lack of attention he gives to hypothesis or speculative science. Faulkner surmises that this criticism (that Bacon "neglected the importance of the 'ideal or speculative' to even a useful science") originally came from Hegel.³⁵ Hegel's critique could likewise be considered an idol of the cave. For Hegel, it is Bacon's "empirical philosophy" that provides the grounds for an attack; empiricism takes "experience as the true and only source of knowledge" and then regulates the thought concerning it.³⁶ Faulkner, however, finds fault with Hegel's classification of Bacon's philosophy as merely empirical: "Bacon's method is not empirical, but experimental."³⁷ It is doubtful whether Hegel, confronted with Faulkner's rebuke, would change his characterization of Bacon's philosophy. For Hegel, the flaws of Bacon's philosophy lie not in the difference between empiricism and experimentalism, but in Bacon's seeking knowledge from experience and by experiential (i.e. experimental) means.

Hegel's criticism stems from the fact that empiricism attains knowledge from experience rather than attaining knowledge from the "speculative Notion." Hegel further asserts that knowledge that proceeds from the Notion is "ashamed" of knowledge from experience. Hegel's criticism is a product of his very idiosyncratic philosophy. One sees throughout Hegel's writings the importance of experience in the development, for example, of reason. His understanding of Bacon, then, rests on his particular philosophy of history-his historicism.³⁸ The very idea of knowledge proceeding from experience disturbs Hegel. And he more or less blames Bacon for stopping the growth of philosophy in England. For the English are destined "to live always immersed in matter, and to have actuality but not reason as object."³⁹ Nevertheless, Hegel still considers Bacon to belong to the history of the sciences and philosophy because of Bacon's introduction of a method of investigation.⁴⁰ Hegel provides Bacon a place, an influential one at that, in the history of philosophy and science. Even so, the interpretation of Bacon's philosophy as somehow exclusively empirical, and, therefore, antitheoretical, is widespread. The nineteenth-century chemist Justus Leibig launched an attack on Bacon for his preference of experimentation over that of theory. According to Alan J. Rocke, Leibig had been harmed by the negative reaction his book on plant nutrition had received in Britain, a reaction that was "clearly based on a Baconian preference for...practical experimentation."⁴¹ The idea behind this criticism is that Bacon's philosophy represented the paradigm of

practical experimentation; to discredit Bacon would discredit the idea of the superiority of practical as opposed to theoretical.

The New Organon supplies us with Bacon's response to this criticism. Bacon tells us that there "are and can only be two ways of investigating and discovering truth."42 It must be admitted that Bacon, here, depreciates the way that rushes up "from the sense and particulars to axioms of the highest generality," and promotes the other way that draws "axioms from the sense and particulars by climbing steadily and by degrees so that it reaches the ones of highest generality last of all."43 Bacon depreciates the first way because he assumes that argumentation is the means that seeks to establish axioms of the highest generality; he contends instead that the "subtlety of nature far surpasses the subtleties of argumentation."⁴⁴ The target of Bacon's attack is not the validity of theory or hypothesis but the use of dialectic in searching for "basic principles" or axioms."45 He laments the fact that the axioms "now available are notional, abstract and without solidity" but also tells us that his "route and plan" is "to extract...from works and experiments causes and axioms, and in turn from causes and axioms new works and experiments."46 In Bacon's own words, we see some initial refutations of these two particular criticisms of his philosophy.

Dreaming up a Flying Machine

Kennington informs us that it is "often said, in depreciation of Bacon, that he supplied the rhetoric, or the prophetic vision, of the modern scientific

development or of the utopia to which it was to lead, but of that science itself he knew little or nothing."47 This idea is deeply connected with the one that claims Bacon is an imprecise thinker, and according to Dennis Desroches, when twentieth-century thinkers such as Alfred North Whitehead and Karl Raimund Popper discuss Bacon, they "tend to avoid reading Bacon's text even as they offer authoritative interpretations of it."48 Whitehead, for example, finds that Bacon was "one of the great builders who constructed the mind of the modern world," while, at the same time, he thinks that he "completely missed the tonality" which lay behind the success of seventeenth century science."49 The reasons why some historians and scholars judge Bacon with blanket praise while others ridicule him seem to depend upon the aspects of Bacon's work under consideration and the criteria used to form a judgment. Like Whitehead, C.S. Peirce takes a middle ground between admiration and criticism. Peirce finds Bacon's conception of the procedure of modern science wholly inadequate. Even considering these reservations, Peirce does not find Bacon's contributions to the project as a whole inadequate; in fact he praises Bacon's "clear account of experience as something which must be open to verification and reexamination."⁵⁰ These analyses of Bacon all have in common their appreciation for his vision and depreciation of his works. We might call this the prophet argument. However, Paul Feyerabend credits Bacon with the realization that "scientific change involves a reformation not only of a few ideas, but of an entire world-view and, perhaps, of the very nature of humans."⁵¹ In his assessment, the

vision is what led to the acceptance of a scientific world-view. In addition, if we think about Bacon's necessary use of an esoteric style of writing in order to communicate his vision, we come to the conclusion that, without *the* proper spokesman, the entire reformation of the sciences may never have gotten off the ground.

But there are others, however, who depreciate Bacon's vision. As we saw above, Koyré thinks that Bacon's role in the history of science was negligible. And Koyré's depreciation of Bacon is different from Stove's. The later finds that Bacon's promise of enlightenment had influence, but was unfulfilled until recently. The former thinks Bacon to have had only trivial influence in the progression of science. Similarly, Imre Lakatos depreciates Bacon's vision. Lakatos claims that Bacon is "a confused and inconsistent thinker, and a rationalist."⁵² He labels Bacon one of the "first two modern élitists" (the other being Descartes), and he makes the claim that Bacon "thought that the scientific mind was one purged of 'prejudices'; such a mind became a tabula rasa on which Nature would imprint the truth about itself."53 This is an odd assessment; we have seen above that Bacon specifically tells us the mind is not a "clean and flat slate" (that is, a tabula rasa). Lakotos, of course, is merely using Bacon as an example of a modern élitist.54 Nevertheless, Lakotos considers Bacon's doctrine of the idols to be a form of psychologism; according to Lakotos, psychologism is one of the "four abhorrent philosophical doctrines" (see note below). What belies Lakatos's criticism is not only the fact that he misconstrues Bacon's understanding of the

mind but also the fact that he fails to show how Bacon is "a confused and inconsistent thinker." The idea that Bacon was a rationalist contradicts the above criticisms that claimed he was an empiricist and anti-rationalist. Lakatos's misrepresents Bacon so fully that his account is not merely flawed, but completely and utterly erroneous. We might call this the false prophet argument, for not only does it proclaim Bacon a false prophet, but also it is itself false.

Nevertheless, the idea that Bacon's contributions to modern scientific development are merely of a rhetorical nature is widespread. Some of these accounts are worth investigating. In "A Promise Kept by Accident," David Stove alters the prophet argument by suggesting that the recent success of science in increasing human happiness betrays any influence Bacon could have had in its fulfillment. Stove summaries Bacon's promise as follows. Bacon believed in the association between new knowledge and useful applications: useful applications lead to new knowledge; and new knowledge guides the development of even newer applications. Science, then, improves human life by useful applications, and the improvement of life is to increases happiness by alleviating human ills and necessities. Bacon's justification of Enlightenment was primarily of a utilitarian, and consequently, a philanthropic nature.

However, this is where the association between the aims of Enlightenment and their fulfillment ends. According to Stove, the period from 1570 to 1770 produced a greater amount of knowledge than at any other period of the same length, but "not a single important practical application."⁵⁵ If people had begun to

doubt that increased knowledge makes them better, they could have become convinced instead that increased knowledge makes them worse, and then the project might have been deserted.⁵⁶ And there was no reason to think that knowledge and the discovery of new knowledge would bear fruits. In order to keep men from abandoning the project, Kant appealed "*to dignity*" as a new justification for enlightenment.⁵⁷ We see then that the utilitarian and ethical justifications both played their parts in allaying the fear that knowledge could make men worse: even if it did not lead to useful applications, the discovery and attainment of knowledge would be something dignified in itself, and the possibility that knowledge could lead to new applications that improve the condition of man, and thus, human happiness would remain the promise of enlightenment.

But to interest the "mass of mankind" in the progress of knowledge, the Enlightenment once again became "*identified with*" the "promise that, by increasing knowledge, human happiness would be increased beyond all experience."⁵⁸ It was necessary to reassert the utilitarian justification of the progress of knowledge because the dignity of knowledge only mattered to a select few, but the promise of unimaginable happiness interests all mankind. Having been afforded the hindsight of history, Stove does not criticize the promise of Enlightenment. He does, however, make the following observations:

Now, this promise which the Enlightenment held out has been kept in fact: modern science, as everyone knows, *has* enormously alleviated human misery. But there is an extraordinary fact about it, which is almost never noticed. This is that, when the promise was made first by Bacon, and for centuries afterwards during which the promise was constantly renewed, *there was no evidence whatever that it could be kept*.

The evident problem with Stove's argument is that he admits, in his premise, the opposite conclusion that he wishes to imply. The implication is that the time between the utterance of the promise and its fulfillment determines the validity of the promise in the first place. In a similar manner, one could argue that, because the "promise was constantly renewed," the timeframe between its utterance and its fulfillment is negligible. If there were no hope or evidence that it could be kept, then why would those after Bacon constantly renew something that seemed doomed?

In Stove's analysis, the very idea of the promise of humanitarianism, of Bacon's promise, is to promote an egalitarian philosophy that can only end, logically and actually, in some form of communism. Stove draws attention to the food scarcities in the period from 1790 to 1890. More generally, he highlights the fact that even after the discoveries of Lavoisier, Newton, and Copernicus, "the most advanced country on earth was still basically a muscle economy."⁵⁹ He does not deny the existence of the industrial revolution; he does, however, deny that this "famous revolution constituted any sort of fulfillment of the Enlightenment's promise."⁶⁰ The industrial revolution, thus, made people *more* miserable:

[B]y making employment more unpredictable, work longer, harder, and unhealthier, and housing worse, it brought about an immense overall increase in misery. This increase has very often been exaggerated, of course, but it is scarcely possible to doubt its reality; otherwise, virtually everyone who wrote about urban Britain between 1790 and 1890 must have been hallucinated or telling lies.⁶¹
Stove contends that, were it not for the inventions of electricity and petroleum, the industrialized economies would have become socialist states. His criticism of the Enlightenment is of a primarily political nature: Enlightenment ethics brought about the welfare state and trade unions. The welfare state and trade unions are "only very incomplete realizations of Enlightenment ethics." According to Stove, "[e]galitarian benevolence cannot be fully satisfied by anything short of communism." ⁶² Communism is the logical consequence of the idea of egalitarianism.⁶³ We now have a clearer picture of Stove's cutting critique of the promise of the Enlightenment. Bacon's initial unification of scientific advancement with humanitarian ethics, which was proposed in order to arouse popular support for the project, has, because of science's success in alleviating human misery, become the essence of the modern age.

Stove's only tenable argument against Bacon's role in its fulfillment rests on a temporal argument; it took a lot of time for the promise to be fulfilled. However, Stove cannot deny the truth of its fulfillment. Some Christians, for example, think that Jesus's promise that the kingdom of heaven will come to earth was fulfilled as Christianity spread and became the dominant religion of the world.⁶⁴ We can disagree with them as to the truth of their premise—that is, what the kingdom of heaven on earth means; however, if we accept their premise, we cannot disagree with their conclusion. Stove does not even dispute the meaning of Bacon's promise. That Bacon's promise took time to fulfill is not a valid reason

to doubt its truth. Even Orwell thinks that the living conditions among the working class of industrial England are favorable to their alternative:

A windowless hut, a wood fire which smokes in your face because there is no chimney, mouldy bread, "Poor John," lice, scurvy, a yearly childbirth and a yearly child-death, and the priest terrifying you with tales of Hell.⁶⁵

The idea that the majority of the alleviations of human miseries are mainly due to the accidental discoveries of electricity and petroleum may, in fact, be true. But the fact that these discoveries are not the products of philosophical speculation or divine intervention speaks to the very truth of Bacon's promise. Furthermore, as referenced above, Kuhn's inclusion of the term "truth" in the *Structure of Scientific Revolutions* is his citation of Francis Bacon's dictum that truth emerges more readily from error than from confusion. What we failed to mention, however, is that the context in which Kuhn cites the dictum is one regarding electrical research: the "effectiveness and efficiency of electrical research increased accordingly, providing evidence for a societal version of Francis Bacon's acute methodological dictum."⁶⁶

However, as compelling it might seem, the gist of Stove's critique of Bacon's promise is that Bacon sought practical results of his instauration of the arts and sciences immediately. In fact, Bacon explicitly says that he seeks "at the start and for some time after...experiments of *light* not *fruit*."⁶⁷ Bacon explains why he first seeks knowledge in the following passage:

Thus if anyone thinks that things of this kind are useless, he is doing the same as supposing that light is useless just because it is not a solid or materiate. But in reality it should be said that well examined and defined knowledge of simple natures is like light which gives access to all the innards of operation, and with its particular power pulls together and

draws down floods of works and of most noble axioms in its wake, but is still of no great use taken by itself. So also the elements that are letters of the alphabet, taken by themselves and in isolation, signify nothing and are of no use; but to the structure and organization of all discourses they are like *material prima*. So again the seeds of things strong in their potentiality (unless they be at work) are of no use. And dispersed rays of light (unless they come together) fail to give us their benefit.⁶⁸

It is perhaps a remarkable irony that Bacon uses the example of light here. Bacon tells us that this is how the sciences will progress for some time. We see, for example, that Michael Faraday's experimental research in electricity led to his discovery of electromagnetic induction; this, in turn, led to Maxwell's mathematization of electromagnetic induction and fundamentally changed modern scientific knowledge and *its* applications forever; these applications include *electrical power*.⁶⁹ The very idea that the human race *could have sped up* its scientific discoveries is fantastical. Furthermore, Bacon's appeal to the varied uses of the printing press, the compass, and gunpowder provides evidence for his promise.

We may, however, rightfully be able to criticize Bacon for not being as *precise* as we want Bacon to be. Since the modern age is one characterized by exactness and precision, then Bacon's failure to produce some concrete work or offer some definite and useable scientific theories would disqualify him from the pantheon of scientific geniuses. This is a form of the prophet argument, and Wittgenstein criticizes Bacon for exactly his imprecision as a thinker:

Bacon, in my view, was not a *precise thinker*. He had large-scale and, as it were, wide-ranging visions. But if this is all someone has, he is bound to be generous with his promises and inadequate when it comes to keeping them.

Someone might *dream up* a flying machine without being precise about its details. He might imagine its looking externally very much like a

real aeroplane and describe its functioning graphically. Neither it is obvious that a phantasy like this must be worthless. Perhaps it will stimulate work of a different sort in others. —So while these others make preparations, a long time in advance as it were to build an aeroplane that will really fly, he occupies himself with dreaming about what such an aeroplane will have to look like and what it was be capable of doing. This says *nothing* about the value of these activities. The dreamer's *may* be worthless—and so may the others'.⁷⁰

This might seem like the more general form of Stove's criticism. However, it is, in

fact, not a criticism at all. To understand what Wittgenstein is thinking here, it is

instructive to look at the only other instances in Wittgenstein's works that mention

Bacon:

A philosopher says "Look at things like this!" —but in the first place that doesn't ensure that people will look at things like that, and in the second place his admonition may come altogether too late; it's possible, moreover, that such an admonition can achieve nothing in any case and that the impetus for such a change in the way things are perceived has to originate somewhere else entirely. For instance it is by no means clear whether Bacon started anything moving, other than the surface of his readers' minds.⁷¹

It is now even more tempting to think of these criticisms as especially harsh, but these assessments of Bacon are also self-comparisons. For example, while studying mechanical engineering, Wittgenstein did design plans for an aircraft engine that proposed rotating the "propeller by means of high-speed gases rushing from a combustion chamber," but the "idea was fundamentally flawed, and guite impractical for propelling an aeroplane."⁷²

The second quotation is situated between Wittgenstein's thoughts on how *his own* works will be considered by posterity. Wittgenstein thinks that Bacon "got bogged down in his philosophical works, and this is a danger that threatens me too."⁷³ Wittgenstein says of himself that the most he "might expect to achieve by

way of effect is that [he] should first stimulate the writing of a *whole lot* of garbage and that then this *perhaps* might provoke somebody to write something good," and that he "ought never to hope for more than the most indirect influence."⁷⁴ Even if we were to accept unequivocally the idea that Bacon *only* contributed to moving "the surface of his readers' minds," this moving may be the "reformation...of an entire world-view and, perhaps, of the very nature of humans" of which Feyerabend credits to Bacon.

Bacon is "no founder of sects." He does "not chase like a child after golden apples, but stake[s] everything on a victory for art in its race against nature."⁷⁵ To accomplish such a monumental task, Bacon has to free the mind from its fetters. In Kant's very demand that we be "*truthful* (honest) in all declarations," we see that the minds of men have indeed become free; the fact that philosophy and science no longer require esoteric methods of conveying knowledge reveals that Bacon's project has conquered the mind of society. In the following chapter, we see how Bacon's system of skepticism was monumental in removing the obstacles to science.

- ⁵ *Works*, V, p.32.
- ⁶ *Ibid.* p.31.
- ⁷ Works, IV, p,450.
- ⁸ Lampert, p.23.
- ⁹ Ibid.
- ¹⁰ Works, III, p.248.
- ¹¹ Lampert, p.23.

¹³ For a brief overview of the religio-philosophical circumstances at the time of Bacon consider the following. Nicolaus Copernicus' work, *On the Revolutions of Heavenly Spheres*, is often thought of as the harbinger of the scientific revolution. He completed his manuscript in 1530, but withheld its publication for thirteen years, partly because of the danger of the Church's censure; for, his postulated heliocentric universe conflicted with the theologically accepted Aristotelian/Ptolemaic geocentric universe. And when his student George Rheticus finally published the manuscript with alterations (unbeknown to Copernicus) made by the Lutheran theologian Andreas Osiander, *On the Revolutions* was attacked by Protestant theologians, and his "ideas lingered in relative obscurity for nearly one hundred years" until men like Galileo Galilei, Johannes Kepler, and Isaac Newton built on his theory of a heliocentric universe. Copernicus' fears were warranted. The Italian scientist and Copernican, Giordano Bruno, was burned at the stake in 1600 by the Inquisition for his heretical beliefs. Looking back at this time in history, it is manifest that the chief challenges to the progression of (what moderns consider) scientific knowledge depended on overcoming the challenges aimed at this enterprise chiefly from scholastics and theologians.

Thirty-three years after the Church burned Bruno at the stake, the Church condemned and sentenced Galileo to house arrest for being "vehemently suspect of heresy." Pope Urban VIII had Galileo's *Dialogue Concerning the Two Chief World Systems* examined for its purported Copernicanism. Although Galileo denied the charges of being a Copernican, the *Dialogue* was put on the Index of Forbidden Books following his condemnation.

Within sixty years of Galileo's condemnation and eighty-seven years after Bruno's execution, Newton published his Philosophiae Naturalis Principia Mathematics ("the Mathematical Principles of Natural Philosophy"). It is appealing simply to draw distinctions between the Catholic and Protestant worlds of the sixteenth and seventeenth centuries. But to think that Protestant England was a more permissive place to challenge the prevailing doctrines and beliefs than Catholic Europe is to underestimate the importance the intervening years between the condemnations of Copernicus, Bruno, and Galileo and the publication of the Principia had on Europe's willingness to accept heterodoxy. For at the turn of the seventeenth century, Bruno's Copernicanism was neither more accepted, nor mocked less in England than it was on the Continent. E.A. Burtt does, however, claim that England had been "relatively freer of theological trammels...then elsewhere in Europe" during the sixteenth century; but he credits Bacon, more than any other, with advancing "secular learning" in the first guarter of the seventeenth century. [Nicolaus Copernicus, On the Revolutions of Heavenly Spheres, ed. Stephen Hawking, (Philadelphia: Running Press, 2002), xiv-xvi; "Galileo and the Church," Encyclopedia of the Scientific Revolution: From Copernicus to Newton, ed. Wilbur Applebaum, (New York: Garland Publishing Inc., 2005), p252-255; Andrew D. Weiner, "Expelling the Beast: Bruno's Adventures in England," Modern Philology, Vol. 78, No. 1, Aug., 1980, (University of Chicago Press), p.1-13; E.A. Burtt, Metaphysical Foundations of Modern Science, 2nd revised ed., (Dover Publications, INC.: Mineola, 2003), p.125.]

¹⁴ Lampert, p.25.

¹ "The Age of the World Picture," *Questions Concerning Technology*, p.119-120.

² Benjamin Farrington, *Philosophy of Francis Bacon*, (Chicago: University of Chicago Press, 1964), p.11.

³ Farrington, p.62.

⁴ Ibid.

¹² Works, III, p.252.

¹⁵ Immanuel Kant, *Practical Philosophy*, trans. Mary J. Gregor, (New York: Cambridge University Press, 1996), p.613.

¹⁶ Alexandre Kojève, "The Emperor Julian and His Art of Writing," in *Ancients and Moderns: Essays in the Tradition of Political Philosophy in Honor of Leo Strauss*, trans. James H. Nichols, Jr., ed. Joseph Cropsey, p.95.

¹⁷ Leo Strauss, *What is Political Philosophy*, (Chicago: University of Chicago Press, 1988), p.221-2.

2. ¹⁸ Werner Heisenberg, *Physics and Philosophy: The Revolution in Modern Science*, (New York: HarperCollins Publishers, 2007), p.162.

¹⁹ Jalobeanu, p.9. The belief is Bacon's lack of interest in mathematics makes up the first, third, and fourth idols of Baconian scholarship.

²⁰ Faulkner, p.9; *NO* II, aph 8. The translation Faulkner cites is from the *Works of Francis Bacon*, edited by Spedding, Ellis, and Heath, and what Rhees translates as "definition," the former translate as "end." The word is *terminatur* and has the meanings of (a) "to set bounds to, mark off by boundaries, to bound, to limit," (b) "to limit, set limits to; to circumscribe, fix, define, determine," and (c) to set bounds to, to close, finish, end, terminate." [*A Latin Dictionary: Lewis and Short*, s.v. "termino."]

²¹ Jalobeanu, p.9.

²² Thomas Kuhn, *The Essential Tension: Selected Studies in Scientific Tradition and Change*, (Chicago: University of Chicago Press, 1977), p.48.

²³ From *Opere Complete di Galileo Galilei*, Firenze, 1842, ff., Vol. IV, p.171. Republished here by E.A. Burtt, *The Metaphysical Foundations of Modern Science*, Mieola: Dover Publications Inc., 2003), p.75.

²⁴ In his discussion of the idols of the market, Bacon tells us that it would be "wiser (following the custom and practice of the mathematicians) to reduce these controversies [the disputes of learned men over words] to order by beginning with definitions. Yet definitions cannot in things natural and materiate remedy this evil because definitions are made up of words...." *OFX*, XI, 1.59.

²⁵ *OFB*, XI, p.19

²⁶ *The World of Mathematics*, vol. 2, "Commentary of Galileo Galilei," ed. James Newman, (Mineola: Dover Publications Inc., 2000), p.731. The quotation specifically comes from the "Plan" of the *Great Instauration* and aphorism 103 in Book One of the *New Organon*. Bacon expresses similar sentiments concerning the role of axioms in aphorisms 19, 24, 82, 104, 105, 106, and 117 of *NO* I.

²⁷ Alexandre Koyré, *Galileo Studies*, trans. John Mepham, (Atlantic Highlands: Humanities Press Inc., 1978), p.1.

²⁸ One could criticize Galileo's understanding of lunar tide in the same respect that those who mischaracterize Bacon's understanding of the use of mathematics and hypothesis in scientific procedure. Simply because the former did not believe in occult influences (spooky action at a distance) does not invalidate his other works.

²⁹ Kuhn, *The Essential Tension*, p.46.

³⁰ *OFB*, XI, *NO* II.20; Thomas S. Kuhn, *Structure of Scientific Revolutions*, 3rd ed., (Chicago: University of Chicago Press, 1996), p.18;p.170.

³¹ Immanuel Kant, *Critique of Pure Reason*, trans. Norman Kemp Smith, (London: Palgrave Macmillan, 2003), p.19-20.

³² Richard Kennington, *On Modern Origins*, (Lanham: Lexington Books, 2004), p.33. It should be noted, as it is dealt with below, that Nietzsche also took Bacon seriously in both his praise and criticism of him.

³³ Laurence Berns, "Frances Bacon and the Conquest of Nature, *Interpretation*, Vol.7. No.1, January 1978, p.11.

³⁴ Ibid.

³⁵ Faulkner, p.8-9.

³⁸ In the *Phenomenology of Spirit*, for example, Hegel explains that the pure rationalization of reason "is bound, therefore, to be at the same time absolute empiricism." And as Peter Kalkavage explains, this amounts to the "filling" of reason by external things. It cannot simply claim that the "the world is mine." And in historical terms, Descartes and Bacon epitomize this rational and empirical nature of reason. [G.W.F. Hegel, Phenomenology of Spirit, trans. A.V. Miller, (New York: Oxford University Press, 1977), p.144; Peter Kalkavage, The Logic of Desire: An Introduction to Hegel's Phenomenology of Spirit, (Philadelphia: Paul Dry Books, 2007), p.163.] ³⁹ Heael, Lectures on the History of Philosophy, p.172.

⁴⁰ Ibid. p.174.

⁴¹ Alan J. Rocke, "Methodology in Nineteenth Century Chemistry," in *Beyond History of Science*: Essays in Honor of Robert E. Schofield, (Toronto: Associated University Presses, 1990), p.149. ⁴² OFB, XI, NO I.19.

⁴³ Ibid.

44 Ibid. NO I.24.

⁴⁵ *Ibid. NO* I.82.

⁴⁶ *Ibid. NO* I.104, I.117.

⁴⁷ Kennington, p.33.

⁴⁸ Dennis Desroches, Francis Bacon and the Limits of Scientific Knowledge. (New York: Continuum, 2006), p.167.

⁴⁹ Alfred North Whitehead, *Science and the Modern World*, (New York: Free Press, 1967), p.43;

p.45. ⁵⁰ C.S. Peirce, Writings of Charles S. Peirce: A Chronological Edition, Vol. 3, 1872-1878, (Bloomington: Indiana University Press, 1986), p.243.

⁵¹ Paul Feverabend, Against Method, (New York: Verso, 2010), p.111n.

⁵² Imre Lakatos, *Mathematics, Science and Epistemology*, Philosophical Papers Volume 2, ed. John Worrall & Gregory Currie, (New York: Cambridge University Press, 1978), p.129n.

⁵³ *Ibid*. p.113.

⁵⁴ And of Elitists in general, Lakotos says the following: "Elitists can certainly support their position with some arguments. No doubt, for instance, some demarcationists have tended to overestimate the power of logic, and some did not pay enough attention to questions of actual scientific practice. Moreover, to a very limited extent élitists have a genuine case. Nevertheless, élitism is very closely connected with four abhorrent philosophical doctrines: psychologism, the ideal of an authoritarian closed society (equipped with mental asylums for deviants), historicism and pragmatism." [Lakatos, p.112]. 55 Stove, *On Enlightenment*, p.30.

⁵⁶ *Ibid*. p.28.

57 Ibid.

⁵⁸ *Ibid*. p.29.

⁵⁹ *Ibid*. p.36.

60 Ibid.

⁶¹ *Ibid*. p.36-7.

⁶² *Ibid.* p.39.

⁶³ Sooner or later, those who believe in the principle of egalitarianism will also believe that it is the purpose of the state to provide for a fairer, more egalitarian society. By and large, as the state promotes the principles of egalitarianism, it also enforces proscriptions of inequality, and the proscription of private property follows from the idea that the state's role in society is to prescribe egalitarian principles through policy. Short of a state-sponsored eugenics program, private property is the last evident, eradicable form of inequality. However, Stove takes for granted that the improvement of the human condition necessarily means a kind of egalitarianism.

³⁶ G.W.F. Hegel, *Lectures on the History of Philosophy*, Vol. III, trans. E.S. Haldane and Frances H. Simson, (Lincoln: University of Nebraska Press, 1995), p.175.

³⁷ Faulkner, p.9.

⁶⁴ In the *City of God against the* Pagans, Augustine claims that the "Church even now is the kingdom of Christ and the kingdom of heaven." [Augustine, *City of God against the Pagans*, trans. R.W. Dyson, (New York: University of Cambridge Press, 1998), p.987.]

⁶⁵ Orwell, *The Road to Wigan Pier*, p.118.

⁶⁶ Kuhn, *SSR*, p.18.

⁶⁷ OFB, XI, NO I.121.

68 Ibid.

⁶⁹ Robert Bruce Lindsay & Henry Margenau, *Foundations of Physics*, (Woodbridge: Ox Bow Press, 1981), Faraday's induction p.202; electromagnetic field theory p.302; Hertz's mechanics p.118-20; the concept of energy p.120-8.
⁷⁰ Ludwig Wittgenstein, *Culture and Value*, trans. Peter Winch, (Chicago: University of Chicago

⁷⁰ Ludwig Wittgenstein, *Culture and Value*, trans. Peter Winch, (Chicago: University of Chicago Press, 1980), p.54.

⁷¹*Ibid*. p.61.

⁷² Ray Monk, Ludwig Wittgenstein: The Duty of Genius, (New York: Free Press, 1990), p.33.

⁷³ Wittgenstein, p.68.

⁷⁴ *Ibid.* p.62.

⁷⁵ OFB, XI, NO I.117.

Chapter Three Reasons for Skepticism

Concerning the condition of the sciences: that it is unprosperous, nor much improved; and that a way completely different from the one known before should be opened for the human intellect, and other helps devised to let the mind exert its proper authority over the nature of things.¹

These are the first words of the *Great Instauration*. What Bacon sees is not just an intellectual and epistemological stagnation but also an inadequate authority over the nature of things. In others words, man is dumb and weak. He transforms this dissatisfaction into an attack on the current stagnation of the sciences and on what he perceives to be its foundations. Men overrate their strength and underrate their store, and they spend their overrated strength on trivial matters. If a person were to look carefully at all the books of the arts and sciences, he "will find everywhere endless repetition of the same old stuff...so that the whole lot, at first glance impressive, turns out on closer inspection to be paltry." The "wisdom" that we derive from the Greeks is "the boyhood of science and, as with boys: it is all prattle and no procreation." They were unproductive and barren: they never penetrated the inner chambers of nature. That is not to say, however, that there is nothing in what the Greeks left to posterity; rather, posterity can reap no fruit from a barren tree.

The unprosperous situation, however, is not simply from the fault of the Greeks. Their influence is certainly part of the problem, but we must also overcome the obstacles that the senses and intellect present us: "[t]he result is that, taken as a whole, human reasoning as applied to the investigation of nature is not at all well sorted and set up, but like some stately pile with no foundations."² Bacon tells King James that he aims to kindle a new light in the "dark recess of philosophy" and science by resting them on "the firm foundation of well weighed experience of every kind."³ The uncertain and irregular light of the senses constantly fails to illuminate the way through experiences and particulars-sometimes failing, sometimes yielding no new information. The notions of things, which the mind readily and passively imbibes, stores up, and accumulates, are false, confused, or overhastily abstracted from the facts; and, those children of knowledge, the ancient Greeks, confound the problems of sense and intellect by relying on the latter to raise up the objects of the senses (the particulars) to the most general propositions.⁴

The solution to the problems that plague the sciences is to restructure and reorient them, and Bacon seeks to use the two great obstacles to science, sense and the intellect, to acquire knowledge. However, this combination of sense and intellect to acquire knowledge seems to have been exactly what the Greeks used. The Greeks trusted the senses insofar as what they sensed allowed the intellect to run wild. Bacon, however, trusts in the obscurity of nature, the fallibility of the senses, and the overzealousness of the intellect. Because of his mistrust

of those two faculties and the object of inquiry, nature, Bacon amends these deficiencies in his presentation of his induction:

But I hold that true logic ought to enter the particular provinces of the sciences with greater authority than that conferred by their own principles, and that the supposed principles should themselves be made to tell us how far they are properly established. As for the first notions of the intellect, none that the intellect left to itself has amassed is above suspicion, and I acquit none unless it has been put on trial anew and judged according to it. And yes, I have many means of testing the informations of the sense itself. For the senses often deceive but they also testify to their own errors. Now the errors are right here, but what testifies to them has to be sought further afield.⁵

The remedy for the inadequacies of the senses is to use experiments in which the sense has the authority to judge the experiments, rather than judging the phenomena themselves. The senses, thus, judge the results, not the thing itself, and Bacon offers the sciences a sort of filter for the opacity of the sense, and a tool to uncover facts from the things of nature. Because the deficiencies of the intellect tend to be more troublesome than those of the senses, Bacon needs to provide us with another kind of help if these are to produce any fruit. Unlike those who maintain acatalepsy, who insist nothing can be known, Bacon finds that "not much in nature can be known by the way now in use."⁶

And it is for this reason that Bacon is the first of the moderns to offer a refutation of the natural human mind, his doctrine of idols. This kind of critique or refutation is one of the defining characteristics of enlightenment philosophy. What is distinctively modern about Bacon may indeed be found in his critique of the human mind. Both Laurence Berns and Carl Page found that this "critique," or the "modern tradition of reason's total and systematic self-criticism" began with

Bacon and culminated in reaching "a pristine focus in Kant."⁷ Reinhard Brandt, however, finds that Bacon's doctrine of idols generally belongs to the classical tradition of theories of error: he includes Plato's allegory of the cave, Locke's analysis of innate ideas, Kant's theory of the dialectic of pure reason, and Marx's idea of the economic and political perversion of consciousness as other such theories of error.⁸

Regardless of whether or not Bacon established a new, non-classical kind of theory of error, he indisputably initiated the modern tradition. This tradition found an immediate successor in Descartes' skepticism, a system famous for its radical doubt. Both thinkers advanced systems of skepticism to cleanse the intellect of its prejudices and draw attention to its errors. Although Descartes's arguments for doubting might seem to lead to a form of methodological solipsism, the intent of the thought experiment is to "prepare [his] readers' minds for the study of things which are related to the intellect," and in a reply to one of Hobbes' objections, Descartes said that his arguments for doubting were "merely plausible," which implies that he did not really accept the thought experiment as valid.⁹

According to Paul Feyerabend, Bacon and Descartes's interests in the "psychology of belief" was what led them to develop theories of idols. These theories have three principal functions: to explain why man is deceived, to devise a method to undeceive man, and to condition man's mind to be able to understand the arguments of the new philosophy, and "cling unwaveringly to their

results."¹⁰ Furthermore, if we follow Carl Page's suggestion that Descartes's skepticism, the metaphysics of the *Meditations*, is a "subversion on behalf of his physics," then this subversion is only possible once the new has been written on the uneven slate of the mind.

Bacon was indeed a skeptic, but Feyerabend's contention that the doctrine of the idols originated in an interest in the psychology of belief is misleadingly narrow. Bacon's doctrine of the idols was, perhaps, the first modern attempt at creating an epistemology, but it is not *merely* a theory of errors, a notice of warning, or an acknowledgement of the fallibility of the senses and intellect. Bacon's doctrine serves to free the mind from its idols by drawing attention to them. It both illuminates the problems and shows the way out. In the first place, Bacon acknowledged the need to help the deficiencies of the senses and intellect through instruments and skillfully and artfully devised experiments. Because the "immediate and peculiar perception of the sense" is often obscured or illusory, Bacon needed to provide us with help: he contrived that the "sense judges only the experiments, whereas the experiment judges the thing."¹¹

However, the provisions of sense judging experiment and experiment judging the thing would *only* be sufficient for finding the light of nature if "the human intellect were flat and like a clean slate."¹² As we indicated in our introduction, Bacon finds that "men's minds are so marvelously beset that they altogether lack a clear and polished surface to focus the true rays of things," and he thinks himself obliged to find a remedy for this too.¹³ In other words, the

project itself cannot begin to take flight until he finds a way to deal with the idols. However, Bacon's descriptions of his doctrine of the idols change throughout his writings. We follow Brandt's suggestion that the doctrine of idols is itself a "protean construction" (*proteisches Gebilde*).¹⁴ In this chapter, we follow the idols as they morph from their first iteration into their final shape in the *New Organon*.

A Fragment of Idols

The first work in which Bacon mentions the idols is the Masculine Birth of Time (1602). As Bacon tended to do, the *Masculine Birth of Time* was only the primary title of the work. In the place of a preface, Bacon offers a prayer. Here, the title of the work is The Masculine Birth Of Time Or The Great Instauration Of The Dominion Of Man Over The Universe. The title then morphs into The Masculine Birth of Time Or Three Books On The Interpretation Of Nature.¹⁵ Benjamin Farrington notes that the "promise" of three books makes clear that this work is only a fragment.¹⁶ Farrington suggests that the "style of abuse" employed in the Masculine Birth of Time began to give Bacon pause and could explain why Bacon ultimately decided not to finish the work but instead chose to disclose his project in other works that were less polemical and liable to give offense.¹⁷ However, the Masculine Birth of Time is, then, the right place to begin to look at the idols. Bacon only mentions three idols in this work, and although Graham Rees claims that Bacon "says nothing further about them" besides mentioning the idols, we follow Brandt in analyzing some of the arguments from the

Masculine Birth of Time so that we can better grasp the Bacon's final presentation of his doctrine. Bacon first alludes to the idols in the prayer that prefaces the text, and the prayer is very similar to the one Bacon offers in the "Preface" to the *Great Instauration*. Therefore, we have two compelling reasons to reproduce it here in full:

TO GOD THE FATHER

God the Word, God the Spirit, we pour out our humble and burning prayers, that mindful of the miseries of the human race and this our mortal pilgrimage in which we wear out evil days and few, they would send down upon us new streams from the fountains of their mercy for the relief of our distress; and this too we would ask, that our human interests may not stand in the way of the divine, nor from the unlocking of the paths of sense and the enkindling of a greater light in nature may any unbelief or darkness arise in our minds to shut out the knowledge of the divine mysteries; but rather that the intellect made clean and pure from all vain fancies, and subjecting itself in voluntary submission to the divine oracles, may render to faith the things that belong to faith.¹⁸

However, after giving to "faith that which is faith's" in the prayer from the *Great Instauration*, Bacon lastly prays that with "the sciences discharged of the serpents poison which swells and puffs up the human soul; we do not aspire to know what is too exalted or beyond the bounds of discretion, but cultivate the truth in charity."¹⁹

We agree with Desroches' finding that the "prayer, despite its pretension to humility, exhibits, precisely, a *pretension* to humility," and the lack of any limit to knowledge in the first prayer makes this pretension even more glaring.²⁰ Desroches points out that this is clearly Bacon's reconfiguration of the words of Jesus: Jesus tells us to "give the things of Caesar to Caesar / And the things of God to God."²¹ As Desroches sees it, "if one gives to Caesar in order that one may clear space to attend to God, Bacon inverts the movement of priority, such that one gives to faith in order to clear space for science."²² Another possibility is that the cleaning and purifying the intellect of "all vain fancies" is what gives faith that which is faith's. In other words, the things of faith are vain fancies, and are unfit for the intellect—or, at the very least, unfit for science.

Bacon tells his readers that his intention is not to impart to us "a mixture of religion and science"; instead, he means to lead us to nature, to "bind her" to our service and make her our slave.²³ It is with "the most loval faith," and "out of the profoundest care for the future," that Bacon conveys to us the instruction for his most legitimate method.²⁴ It is not a coincidence that Bacon reintroduces "faith"; but free from its heavenly dependence, Bacon places his faith in those who take up his project. He places his faith in human beings to fulfill his "earthly wish." As we saw in Chapter Two, the reason that Bacon must use deliberately esoteric language (the "arts and subterfuges") is that the minds of men are not yet ready to have "the matter plainly before" them. For, Bacon explains to us, all the "approaches and entrances to men's minds are beset and blocked by the most obscure idols-idols deeply implanted and, as it were, burned in" so that there remains no "clean and polished surface...in the mirror of the mind on which the genuine natural light of things can fall."²⁵ Bacon tells us once again that the mind is not a blank slate, but we also see that the "legitimate method" that Bacon has prepared for the men's minds when they are ready to receive it is intricately connected with the elimination of the idols that block its access.

Bacon commences his attack on the "philosophers": they "debauch our minds"; they deceive us; and worse still, their follows are parasitic.²⁶ Bacon first summons "that worst of sophists", Aristotle, to the bar to stand trial: he was "stupefied by his own unprofitable subtlety"; "he composed an art or manual of madness and made us slaves to words"; and worse still, Aristotle supplied the "precepts and propositions" from which the quibblers of the schools found their nourishment.²⁷ For those who claimed that Aristotle conducted experiments of the kind that Bacon advocated, Bacon denounced any such contention:

[Aristotle] still moved in the daylight of honest research when he fetched up his darksome idols from some subterranean cave, and over such observation of particulars as had been made spun as it were spiders' webs which he would have us accept as causal bonds, though they have no strength nor worth.²⁸

Aristotle, then, is the philosophical manifestation of subterranean man. Brandt thinks that Bacon could be thinking of Plato's allegory of the cave from the *Republic*, he could be thinking of Cicero's variant in *De Natura Deorum*, or he could even be thinking of Aristotle's now lost version of the cave that Cicero discusses. However, according to Brandt it is Arnobius of Sicca's cave that makes the most sense for Bacon's purposes.²⁹

In Arnobius's *Case Against the Pagans*, he proposes a "controlled experiment": isolate a baby from birth so completely that there is no discernable difference in anything (in sound, in temperature, in daylight, in season, and so on and so forth); and give the infant only what is necessary to survive, letting him grow up without having any interaction with anything or anyone. When he is forty years old, bring him to an assembly and interrogate him. Arnobius then asks,

"[w]ill he not stand there more stupid and duller than any cattle, log, stone?"³⁰ The thought experiment leads into an attack on Plato's doctrine of recollection in the *Meno*. The idea, however, behind Brandt's finding is clear. The mind of Arnobius's caveman would properly be called a blank slate, and his mind would neither have nor be connected to any ideas. Bacon's use of the cave then has two purposes. First, it implies that no one is free from the ideas that have been passed down from philosophies and theologies. And second, those—like Aristotle—who think that they use their reason within the confines of mind and find truth there are deluding themselves.³¹

Bacon goes on to criticize Plato, and one might say that Plato dwells deeper in Arnobius's cave than Aristotle. Accordingly, Plato "dealt us a mortal blow" when he "gave out the falsehood that truth is, as it were, the native inhabitant of the human mind and need not come in from outside to take up its abode there" and "when [he] turned our minds away from observation, away from things."³² The fundamental difference between Aristotle's folly and Plato's is that Aristotle "still moved in the daylight of honest research," while Plato "taught us to turn our mind's eye inward and grovel before our own blind and confused idols under the name of contemplative philosophy."³³

We might suppose that Plato is a far worse offender of truth than Aristotle because he taught us to turn inward—away from things—and Aristotle merely followed his lead. Although this is true, they are also both guilty of different kinds of error.³⁴ Plato props us his philosophy with religion.³⁵ Aristotle corrupts natural

philosophy with his logic.³⁶ And by Plato's theology and Aristotle's logic, they both "corrupted man's view of nature."³⁷ In other words, Plato put philosophy on the path to theology, or at least opened the door to theology, and Aristotle created a system of disputation that is unrelated to natural things—a system that is disinterested in truth. Bacon also admonishes the schools of the scholastics, not only in following Aristotle's system of disputations (which would be following an idol of the theater), but also of bringing in their own idols, "particularly of those of the market-place and the cave."³⁸ In their interpretations of nature, the scholastics snatch up any facts that fit in with their "preconceptions" and force "everything else into harmony with them."³⁹ The different schools have their own "vernaculars" by which they interpret nature, and these vernaculars are sourced from the very style of argumentation that Aristotle helped to grow.

To make matters worse—or perhaps *the* reason matters are worse— "theologians...have borrowed freely from [Aristotle's] philosophy and have thus established a system of speculation in which the doctrines are combined."⁴⁰ Farrington believes that the "attack" on Plato is "to be explained in terms of [Bacon's] contemporary situation."⁴¹ However, we do not find Farrington's explanation that the "political hostility" of Bacon's day arose from the "aristocratic culture" attributable to Plato to be very compelling.⁴² We instead contend that Bacon wants to free the sciences from faith—that is, from religion—and that Bacon's denunciations of their philosophies have a double purpose. He does indeed wish to separate natural philosophy from philosophy, but he also wants to

loosen religion's grasp on both. He cannot attack religion outright: he can only leave to religion that which is religion's. ⁴³ Bacon mostly abstains from commentating on the much "admired" ethics of Plato and Aristotle; he mentions only that the "pages of Tacitus breathe a livelier and truer observation of morals and institutions."44 Tacitus tells us of a Rome that is "a scene of ceaseless bloodshed" in which the "force of terror had utterly extinguished the sense of human fellowship, and, with the growth of cruelty, pity was thrust aside."45 In Bacon's turning to Tacitus for a "livelier and truer observation of morals," we see why Howard White, Richard Kennington, and Robert Faulkner have all understood the moral implications of Bacon's writings to be of a Machiavellian variant.⁴⁶ In looking to Tacitus, Bacon followed Machiavelli's teaching that it is "more fitting to go directly to the effectual truth of the thing than to the imagination of it," "for it is so far from how one lives to how one should live that he who lets go of what is done for what should be done learns his ruin rather than his preservation."47 We are again reminded that the Bacon's new method is not to be followed exclusively in the natural sciences but also in "logic, ethics, and politics."

At the conclusion of the *Masculine Birth of Time*, Bacon reiterates that we cannot begin to grapple with the "bewildering complexities of experimental science" before our minds have been purged of their idols.⁴⁸ Bacon once again tells us that the mind is not like a waxen tablet where we must rub out the old to write the new; with the mind, we cannot rub out the old until we have written in the new.⁴⁹ Bacon warns us that if we were to divest ourselves of "the *idols of the*

inn, there would be every fear of...falling victim to the *idols of the road*."⁵⁰ He does not exactly clarify what these two new idols are or with what other iterations they might be identified, but as we shall see in the next part, Bacon reduces—for good—the number of idols to four. Bacon tells us that we have become "too accustomed to following a guide," and this is likely the sentiment expressed by the idols of the inn and idols of the road. They would be idols of *how we normally do things or think about things*. In other words, we normally follow this or that line of thinking down the road until we stop at a resting place, an inn.

Bacon finishes the fragment with two striking allusions. He first compares our situation to that of a Roman "when tyranny was once in the saddle," and "the oath of allegiance to the Senate and the People became a vain thing."⁵¹ He is likely thinking of the situations recounted by Tacitus when the sense of human fellowship had been utterly extinguished (see citation above). But Bacon then tells his reader to take heart: "and give yourself to me so that I may restore you to yourself."⁵² Once again, Bacon inverts the words of Jesus. The Gospels of Matthew, Mark, and Luke each contain some iteration of Jesus's following instruction, "[i]f anyone wishes to be my follower, / Deny yourself and take up the cross / And follow me."⁵³ Bacon's second inversion of the words of Jesus is even more striking than the first; Jesus instructs his followers as to how they can be saved, not in this world, but in the next world. The implication of Bacon's instruction is that he will save us from being deluded into thinking there is a next world. Even with its pretensions not to put the matter plainly before us, the

Masculine Birth of Time openly discloses the irreligious aspect of Bacon's plan. If we now think again about the difference between the prayer from the *Great Instauration* and the one presented here, the restriction on the ambition of knowledge and the cultivation of truth in charity are glaringly absent. In sum, Bacon has added a Christian cover to his project.

Four Idols: Three Innate, One Extrinsic

Between Bacon's brief mention of the idols in the *Masculine Birth of Time* to their final product in the *New Organon*, the idols crop up in the *Valerius Terminus*, the *Advancement of Learning*, and the *Partis instaurationis secundae delineatio*. It is in their final form that Bacon carefully stages their "public exposure and humiliation."⁵⁴ Bacon adds a fourth category idol, the idol of the tribe, in the *Valerius Terminus*. In the *Advancement*, like the *Masculine Birth of Time*, there are only three "false appearances" mentioned.⁵⁵ Although Bacon does not name them specifically, he briefly discusses the characteristics of the idols of the tribe, the idols of the cave, and the idols of the market-place. The idols of the theater in the *De Augmentis*.⁵⁶ Rees claims that in a marginalium of the *Advancement*, Bacon distinguishes between innate and extrinsic idols.⁵⁷ Furthermore, in the *De Augmentis*, Bacon outright distinguishes between innate and extrinsic idols.⁵⁷ Furthermore, in the *De Augmentis*, bacon outright distinguishes between innate and extrinsic idols.⁵⁷ Furthermore, and extrinsic idols; however, only the idols of the theater are extrinsic and "may be rejected and got

rid of."⁵⁸ Therefore, it is not clear to what the marginalium refers: it cannot refer to any of the idols mentioned in the *Advancement* as they are all innate.

The distinction between innate and extrinsic idols is further muddled by the introduction of three classes of idols in the *delineatio*, "those associated with the dogmas of the philosophers, with perverse laws of demonstration, and with the very nature of the mind." ⁵⁹ The first two classes are extrinsic; the third is innate. Bacon's three refutations correspond to the three classes of idols, and since we are presented with four idols in the *New Organon*, the idols of the theater correspond to the refutations of the philosophers and to the perverse laws of demonstration; the other three idols, then, correspond to the refutation of the very nature of the mind.⁶⁰

The mind, as has been said, is not a "clear and polished surface," but even if the mind could be "clear and polished" (that is, free of its idols), it would still be like an "uneven mirror" that "bends the rays of things according to its own shape and section."⁶¹ Peter Urbach draws to our attention the fact that Popper and Mary Hesse fell victim to the misconception that the idols can be purged from the mind.⁶² Hesse claims that the "intellect is to be purged by the practice of true induction" so that the "mind is to be made into, what Locke was later to say it is naturally, a '*tabula abrasa*."⁶³ Similarly Popper tells us that Bacon "held that to prepare the mind for the intuition of the true essence of nature of a thing, it has to be meticulously cleansed of all anticipations, prejudices, and idols."⁶⁴ Locke's contention is that there are no innate ideas; therefore, the mind is "as we say,

white paper, void of all Characters."⁶⁵ Popper and Hesse, thus, conflate Locke's contention that the mind begins as a *tabula abrasa* with Bacon's conception that the mind altogether lacks a "clear and polished surface to focus the true rays of things." Urbach does, however, admit that a few of Bacon's "glosses on the idols" do encourage this standard view."⁶⁶ What they fail to understand is that Bacon's "remedy" is not to eliminate the idols from the mind, but to restrain and drive them off; and bringing about this remedy is primarily accomplished by "just drawing attention to them."⁶⁷ According to Bacon, the central problem is that when the mind is "affected by things by way of the sense," it "faithlessly implants and intermixes its own nature with the nature of things when sorting out and devising its notions."68 In other words, the three idols that deal specifically with the constitution of the mind are ineradicable. Bacon provides the following simile: "[f]or the doctrine of *idols* stands in a similar relationship to the *Interpretation of Nature*,⁶⁹ as the doctrine of Sophistical Refutations does to ordinary dialectic."⁷⁰ It is now clear why Bacon differentiates between the innate and extrinsic idols. Only the latter kind, the idols of the theater, can be purged from the intellect by means of refutations; whereas, the only remedy for the idols of the tribe, the cave, and the market is the drawing of attention to them.

Idols of the Tribe

The idols of the tribe are "rooted in human nature itself and in the very tribe or race of men, and "all perceptions of sense and mind are built to the scale of man

and not the universe."⁷¹These idols are products of the human intellect; the intellect is the filter through which all perceptions must pass: it "mingles its own nature with the nature of things, and distorts and stains" the nature of things like an "uneven mirror" does to the "rays of things."⁷² And this distortion is made worse by the very constitution of the intellect. It is like a self-supporting edifice: for it is "constitutionally prone to supposing that there is more order and equality in things than it actually finds."⁷³ By nature, it is not only prone to suppose more order and uniformity in things than there actually is but also pulls everything else into an agreement with the conceptions that have already won its approval.⁷⁴

The intellect "despises," "dismisses," and "rejects" any contrary instances.⁷⁵ This is the human propensity for superstition and results from the intellect's "peculiar and permanent error of being moved and excited more by affirmatives than negatives."⁷⁶ By highlighting this "permanent error," we are once again reminded that the idols of the tribe are innate and, thus, cannot be purged from the mind. One might think that its propensity for affirmatives, which is the basis of superstition, is relatively harmless, but this error pushes the intellect forward into rather absurd attempts to find uniformity in the world. For example, it is, by reductio ad absurdum, impossible to square the circle in Euclidian space. This impossibility can be demonstrated, but for as long as geometry has been taught, countless attempts at the positive proof have been made. The intellect is uncomfortable with negative instances. According to Bacon, however, negative instances have greater weight than positive ones, and this point is made clear by

any proof by reductio ad absurdum. The intellect is fond of the easily graspable and the homogeneous and unsuited for remote and heterogeneous instances.⁷⁷ Furthermore, it is restless and aspires to go further: "[i]t cannot therefore conceive of any end or limit to the world, but always compulsively hankers after something beyond."⁷⁸ The insinuation is that the source of the idea of an afterlife, or by consequence a Supreme Being, is our "peculiar and permanent error of being moved and excited more by affirmatives than negatives." Bacon also attacks the Aristotelian idea of causes, which flows from the same source of error. In the *Physics*, Aristotle defends causes in the following manner:

It is absurd to think that a thing does not happen for the sake of something if we do not see what sets it in motion deliberating. Surely even art does not deliberate. If shipbuilding were present in wood, it would act in the same way as nature does, so if being for the sake of something is present in art, it is also present in nature. This is most clear when someone practices medicine himself on himself; for nature is like that. That, then, nature is a cause, and in this way, for the sake of something, is clear.⁷⁹

Bacon finds the above defense of final causes preposterous. It is indicative of the intellect's failure to stop when it does not find causes for the "highest universals in nature," so that it falls back on "final causes which obviously come from the nature of man rather than of the universe."⁸⁰ This is the source from which philosophers have corrupted philosophy.

That the senses are dull, inadequate, and unreliable and the will and affections contaminate the intellect are great hindrances that distort the human intellect.⁸¹The intellect desires too much; the senses provide too little. As Bacon tells us, the remedy is clear: the "truer interpretation of nature is accomplished by

means of instances, and apt and appropriate experiments, where the sense judges only the experiment while the experiment judges nature and the thing itself."82 Bacon's words clearly refute Popper and Hesse's contention that the mind can be purged of its idols. A remedy for the idols of the tribe is to devise extrinsic experiments for the intrinsically inadequate senses. He is not saying, however, that were the senses acute and adequate, the senses would be sufficient in the judgment of nature. He is equally not saying that the experimentally assisted senses will be able to flatten the mirror of the mind and. thus, "receive the natural light unrefracted."83 It is true that we would see more clearly, but following Urbach's interpretation, the senses are only to judge the experiment. That is, Bacon suggests that "the senses cannot decide on the truth of the axioms since these will typically involve unobservable entities but they determine the outcome of experiments, that is, the truth of observation statements derivable from the axioms."84 Urbach's interpretation follows from what Bacon says about the "forms": "forms are fictions of the human soul, except when you want to call those laws governing the act forms."⁸⁵ It would be absurd therefore to think that these laws of action are themselves sensible directly. It is even more absurd to think that better and clearer lenses can simply correct the "permanent" errors of the mind.

We see that the idols of the tribe are, indeed, innate. Remedies cannot purge them. There are remedies to help the senses, for example. However, the intellect will still be an uneven surface contaminated by "its preconceptions, its

narrowness, its restlessness," and its affections.⁸⁶ Bacon draws to our attention these innate idols so that we can be on guard against them. We can recognize but not eradicate them.

Idols of the Cave

Neither Bacon nor commentators have much to say about the idols of the cave. They arise from an individual's idiosyncrasies, "both body and soul, as well as from education, custom, and accident."⁸⁷ They are relatively benign, but the idols of the cave are also the causes of great errors. According to Bacon, priority Aristotle placed in logic in his philosophy rendered his non-logical works "virtually useless."88 Similarly, after formulating many experiments on the magnet, Gilbert "immediately fabricated a philosophy conforming to this mastering passion": he made the magnetic force the breath of earth and all the heavenly spheres' souls; consequently, the magnetic force and animate form of the globes exert "an unending action, quick, definite, constant, directive, motive, imperant, harmonious, through the whole mass of matter" and "thereby are the generation and ultimate decay of all things on the superficies propagated."89 This kind of generalizing from particulars to axioms is what Bacon finds specifically detrimental to the progression of the sciences. However, Leucippus and Democritus are guilty of looking too closely at the particulars, and they ended up ignoring the structures.⁹⁰ Bacon recommends the adoption of a "contemplative strategy...to restrain and drive off the *Idols of the Cave*": we must alternate

between the particulars and the general "to make the intellect at once penetrating and comprehensive."⁹¹ In other words, neither must we be misled by our proclivities nor by the particulars at the expense of the general or the general at the expense of the particulars.

Idols of the Market

The idols of the market are the "greatest nuisances of the lot" and "have slipped into the intellect through the alliance of words and names."⁹² They are the idols of words and meaning. The relation between reason and words is reciprocal: "men believe that their reason rules words but it also happens that words turn and bend *their* power back upon the intellect."⁹³ The problem, as Feyerabend sees it, is that human beings using language *L*, for example, "will interpret the descriptive signs of this language in a way which depends upon their 'prejudices' (in Bacon's sense) i.e. upon their general ideas about things and their properties."⁹⁴ But Feyerabend, like Bacon, finds that a comprehensive view of the intellect that is based *solely* on the use of words is only possible in simple cases; although he thinks there is more complexity in the matter, he does have much sympathy with

[T]he view formulated clearly and elegantly by Whorf (and anticipated by Bacon), that languages and the reaction patterns they involve are not merely instruments for *describing* events (facts, states of affairs), but that they are also *shapers* of events (facts, states of affairs), that their 'grammar' contains a cosmology, a comprehensive view of the world, of society, or the situations of man which influences thought, behaviour, perception.⁹⁵

This is the position taken by many twentieth-century thinkers and professors of philosophy, but rather than making it an aspect of a skepticism akin to Bacon's, they took language to be the *only* means to reach a comprehensive view of the world. What Bacon anticipated was the intractable problems of language. Not only were they mostly "imposed according to common capacity," but the controversies that stemmed from the vagueness, the different uses, and the different meanings, of words could not be solved by reductions to definitions, for definitions are "made up of words, and words beget words."⁹⁶ The two central issues that arise with words are that their referents either can be vague or nonexistent. Words like "fortune, first mover, planetary orbs, [and] the element of fire" are "fictions...whose origins lie in vain and deceitful theories." A word like moist, "which springs from wrong-headed and ignorant abstraction," is an example of the other kind.

Bacon addressed earlier the problem of causes that arises with regard to nature. Fortune is the exertion of an external force on human affairs, for the prime mover is the first cause of all causes; it is the initial movement of all movement; it is the hand of God—or perhaps God Himself—and the planetary orbs are often referred to as the heavens. Bacon clearly does not imply that the planetary orbits are imaginary. The separation between the natural and the imaginary is again made explicit. Here, one might think the fictitious stands in for the divine. Although not stated outright, there is an implication that fate, God, and

the heavens do not exist: they are merely empty terms floating in the void of linguistic error.

Idols of the Theater

At last we come to the only idols that are not innate, and thus, capable of being purged from the minds of men. The fact that Bacon's treatment of the idols of the theater is longer than the others not only indicates that we *can* purge these idols, but also that we must purge these idols if we are to take up the mantle of his scientific enterprise. It is no surprise that Bacon's attack on the ancients in the *Masculine Birth of Time* is consistent with his presentation of the idols of the theater. They are idols that have "clearly been promoted and given credit by theories fit for the stage and by misguided laws of demonstration."⁹⁷ The specific kinds of "*false philosophy*" that Bacon has in mind, which have been complicit in falsehood, are the sophistical, the empirical, and the superstitious.⁹⁸ It follows that, although these idols are extrinsic, they are systematic representations of the three innate idols. In other words, the proclivity to establish a new sect or follow one of these false philosophies may be innate—a mixture of the first three kinds of idols.

Unsurprisingly, Bacon names Aristotle as "the most obvious example" of a sophist. Aristotle's "dialectic corrupted natural philosophy when he fashioned the world from categories...and forced on the nature of things countless other ideas as the whim took him."⁹⁹ Aristotle bent experience to match his preconceived

opinions, and accordingly, his so-called experimental works are no different from his works on logic. They seek to prove their premises regardless of any intermediate contrary. The work, then, of the sophists merely relates and contributes to the idols of the market. They dispute about disputations and produce nothing but further disputations.

We see that the error of the empirics is to generalize a comprehensive view of things on the basis of only a few experiments, and Bacon once again puts Gilbert's philosophy into this school. Bacon warns us that this philosophy is even more "deformed and monstrous" than the sophistical "because of the premature and precipitate onrush of the intellect and its tendency to jump the gun and fly off towards the generalities and principles of things, terrible danger may well arise from philosophies of this kind."¹⁰⁰ He does not, however, speak to what the danger may be or consist of. The danger might be of a doctrinal nature—and therefore merely concern disputations between schools—but we also have to consider the fact that a purely empirical science does not seek lights; since lights bear fruits and fruits bear lights, the empiricists may lack the requisite capacity to seek further progress from progress: "all utility and capacity for producing works lies in intermediate causes."¹⁰¹ These are the causes that the empiricists do not investigate.

However, the most widespread and greatest danger to philosophy is superstition. While the sophistical "ensnares the intellect," the superstitious "deludes it."¹⁰² Make no mistake: Bacon is explicitly speaking of the superstitious

mixed with "theology." Bacon initially uses Pythagoras and Plato as examples of thinkers who were prone to this error but then opens up his criticism even to those who "have tried to build a natural philosophy on the first chapter of Genesis...and other sacred writings."¹⁰³He reminds us again to leave to faith that which is faith's. The problem is that it is unhealthy to mix the divine and the human as such a mixture "begets not only fantastic philosophy but heretical religion."¹⁰⁴ But, by looking back to aphorism twenty-three, we see that Bacon is not merely issuing his command to leave faith to that which is faith's. In aphorism twenty-three, Bacon states that there is a great "gulf between the *Idols* of the human mind and the ideas of the divine" (between empty opinions and "true signatures or impressions stamped on created things as we find them").¹⁰⁵ But by aphorism sixty-five, any attempt to bridge this gap, the great gulf, is "unhealthy" and "heretical." We are right to wonder if theology itself is not some mixture of the human and divine. But more specifically, there is a *certain* theology that claims that there was at some point the actual mixture of the human and divine; and the embodiment of this mixture is Jesus as the supreme revelation of God. Bacon's attack on superstition indirectly indicts Christianity, and we need to read between the lines in the following chapter to grasp the possibility that Bacon's critique of Aristotle and Plato also acts as a subversion of Christianity on behalf of his science. In sum, Bacon attacks the three schools of thought for relying on vulgar notions, on two few experiments, and on superstition.¹⁰⁶

However, these philosophies are also reckless in how they "grant and withhold assent."¹⁰⁷ This recklessness contributes to the perpetuation of the idols. On the one hand, Aristotle's philosophy is too sure of the correctness of its logic and, therefore, polishes everything off "without a trace of uncertainty,"¹⁰⁸ This certainty prevents anyone from questioning the method of using logic as a means of validating or invalidating what is truth or falsity. The problem of deduction is that the conclusion of an argument can be true even if its premises are false. The validity of an argument is not concerned with true or falsity. It is only concerned with self-consistency. On the other hand, through "witticism and irony" Plato helped provide the building materials for the New Academy's Acatalepsy.¹⁰⁹ According to Bacon, the New Academy's approach is more honest than Aristotle's because it does not "lay down the law": it instead "holds consequences to be probable without having them be regarded as true."¹¹⁰ However, this sect deprives man of the hope of discovering truth. Like Aristotelianism, this deprivation leads to fruitless arguments rather than rigorous inquiry.¹¹¹

Bacon concludes his section on the individual kinds of idols with another exhortation to free and purge the intellect of its idols.¹¹² So as Urbach remarks above, we, like Popper and Hesse, are confronted with another gloss of the idols that seems to support their views of the possibility that the mind can eradicate its idols. Taken in isolation, their interpretation of what Bacon means here would be enticing. But right before Bacon tell us that the intellect must be "thoroughly freed and purged" of the idols, he relates to us that the "authority of human sense and

intellect should not, for all their weakness, be despised but furnished with help."113 It is clear that the sense and intellect logically cannot both be purged of their idols and furnished with help to avoid falling for the traps of their inherent weaknesses. We again see why it is so important to read Bacon carefully. For he states outright that entrance into the "Kingdom of Man, which is founded on the sciences, differs little from that into the Kingdom of Heaven, into which none enters except in the likeness of a little child."¹¹⁴ At first sight, Bacon simply seems to compare his Kingdom of Man with what Jesus tell us about entrance into the Kingdom of Heaven in Mark 10:15. The problem is that the passage in Mark does not refer to the kingdom of heaven but the kingdom of God: "Whoever does not receive the kingdom of God / Like a child / Will never enter therein."¹¹⁵Bacon might have misquoted the passage. However, as we mentioned in Chapter Two, there is a prominent tradition that believes the kingdom of heaven is the same as the Church.¹¹⁶And the kingdom of God is thought to be different from the kingdom of heaven. Why then does Bacon alter the biblical reference? Perhaps because the Kingdom of Man is intended not only to subvert the kingdom of heaven on earth (that is, Christianity), but also to replace it. It is important to remember that Bacon furnishes the authority of the sense and intellect; he does not despise this authority. The idols of the tribe, however, are the only idols that can be "forsworn" and renounced with unwavering and solemn resolve." And so once again, Bacon uses religious sentiments to help him to secularize his project.

¹ *OFB*, XI, p.11.
² *Ibid.* p. 3.

- ³ *Ibid*. p. 9.
- ⁴ *Ibid.* p.31-35.
- ⁵ *Ibid*. p.33.
- ⁶ *Ibid. NO* 1.37.

⁷ Laurence Berns, "The Relation Between Philosophy and Religion: Reflections on Leo's Strauss's Suggestion Concerning the Source and Sources of Modern Philosophy," *Interpretation*, Vol.19, No. 1, Fall 1991, p.53; Carl Page, *Philosophical Historicism and the Betrayal of First Philosophy*, (University Park, P.A.: Pennsylvania State University Press, 1995), p.46.

⁸ Reinhard Brandt, "Francis Bacon: Die Idolenlehre," *Grundprobleme der großen* Philosophen, Philosophie *der Neuzeit I*, (Göttingen: Vandenhoeck & Ruprecht, 1986), p.10. Reproductions of the text in English follow the unpublished translation by Striker Translations. I have edited and amended any of the reproductions used above.

⁹ Rene Descartes, *The Philosophical Writings of Descartes*, Vol. II, trans. John Cottingham, Robert Stoothoff, & Dugald Murcoch, (New York: Cambridge University Press, 1984), p.121. Descartes contrasted his own purpose for the thought experiment with Hobbes's finding the exercise itself valid. The idea is that had Descartes not needed to cleanse the minds of his readers, the thought experiment would have been unnecessary.

¹⁰ Paul Feyerabend, *Knowledge, Science, and Relativism: Philosophical Papers*, Vol. 3, (New York: Cambridge University Press, 1999), p.105.

¹¹ *OFB*, XI, p.35.

¹² Ibid.

- ¹³ Ibid.
- ¹⁴ Brandt, p.10.

¹⁵ Benjamin Farrington, *The Philosophy of Francis Bacon*, (Chicago: University of Chicago Press, 1964), p.60-1.

- ¹⁶ *Ibid*. p.61.
- ¹⁷ *Ibid*. p.37.
- ¹⁸ *Ibid*. p.60.
- ¹⁹*OFB*, XI, p.23
- ²⁰ Desroches, p.76-77.

²¹ Willis Barnstone, *Restored New Testament*, trans. Willis Barnstone, Gospel of Matthew, (New York: Norton & Company, 2009), p.292. [22:15].

- ²² Desroches, p.77.
- ²³ Farrington, p.62.
- ²⁴ Ibid.
- ²⁵ Ibid.
- ²⁶ *Ibid*. p.63.
- ²⁷ Ibid.
- ²⁸ Ibid.
- ²⁹ Brandt, p.13-15.

³⁰ Arnobius of Sicca, *Case Against the Pagans*, Vol. 1, trans. George E. McCracken, (New York: Newman Press, 1949), p.133-37.

³¹ This criticism of the pagan philosophies almost certainly stems the idea that they could not simply understand the immortality of the soul without its being reveled to them by God the word. The idea of revelation from within is antithetical to the idea of revelation.

³² Farrington, p.64

- ³³ Ibid.
- ³⁴ *Ibid*. p.70.
- ³⁵ *Ibid*. p.64.

³⁶ Let us look at the following example of the kind of corruption Bacon speaks of, and the reason why Aristotle remains a sophist: "The goal of this study is to find a method with which we shall be

able to construct deductions from acceptable premises concerning any problem that is proposed and-when submitting to argument ourselves-will not say anything inconsistent." [Aristotle, Topics, Books I & VIII, trans. Robin Smith, (New York: Oxford University Press, 2003), p.1.

³⁷ Farrington, p.83.

³⁸ *Ibid*. p.69.

³⁹ *Ibid*. p.70.

⁴⁰ *Ibid*. p.107.

⁴¹ *Ibid*. p.35.

⁴² Ibid.

⁴³ See endnote 11 from Chapter 2.

⁴⁴ Farrington, p.71-2.

⁴⁵ Tacitus, The Annals and The Histories, trans. Alfred John Church & William Jackson Brodribb, (New York: Modern Library, 2003), p.181;177. ⁴⁶ See White's *Peace Among the Willows*, and especially Kennington's chapter, "Bacon's

Humanitarian Revision of Machiavelli," and Faulker's chapter "Improvements on Machiavelli: Empire Humane, Civil, and Visionary" in their respective works On Modern Origins and Francis Bacon and the Project of Progress.

⁴⁷ Niccolò Machiavelli, *The Prince*, trans. Harvey C. Mansfield, 2nd Ed. (Chicago: University of Chicago Press, 1998), p.61.

⁴⁸ Farrington, p.72.

⁴⁹ Ibid.

⁵⁰ Ibid.

⁵¹ *Ibid*.

⁵² Ibid.

⁵³ Barnstone, p.273. [Matthew 16:24; Mark 8:34; Luke 9:23].

⁵⁴ OFB, XI, p.lii-liii.

⁵⁵ Francis Bacon, Advancement of Learning, (Philadelphia: Paul Dry Books, 2001), p.124-126. The Index incorrectly states that the idols Bacon alludes to here are the idols of the mind, the idols of the tribe, and the idols of the cave. The error is manifest.

⁵⁶ Francis Bacon, *The Works of Francis Bacon*, Vol. IV, (New York: Cambridge University Press, 2011), 431.

⁵⁷ OFB. XI. p.lii.

⁵⁸ Works, IV, p.431.

⁵⁹ OFB, XI, p.lii.

⁶⁰ *Ibid*. p.liii.

⁶¹ *Ibid*. p.35.

⁶² Peter Urbach, "Francis Bacon as a Precursor to Popper," British Journal for the Philosophy of Science, Vol. 33, Vol. 33, No. 2 (June, 1982), p.119.

⁶³ Mary B. Hesse, "Francis Bacon," A Critical History of Western Philosophy, ed. D.J. O'Connor, (New York: The Free Press, 1964), p.144. ⁶⁴ Karl Popper, *The Logic of Scientific Discovery*, (New York: Routledge, 2002), p.279.

⁶⁵ John Locke, An Essay Concerning Human Understanding, (New York: Oxford University Press, 1975). II.II.1. p.104.

⁶⁶ Urbach, p.119. We can see how the following aphorism could be misinterpreted in such a way: "Now the intellect should also be on guard against the restlessness with which philosophies grant and withhold assent, for recklessness of this sort seems to fix and in a way perpetuate the Idols, and stop us approaching and removing them." But in this example Bacon is specifically speaking of the idols of the theater. In other words, he is only speaking of the one kind of extrinsic idols. [OFB, XI, NO 1.67.]

⁶⁷ OFB, XI, p.35; NO I.40.

⁶⁸ *Ibid*. p.35.

⁶⁹ "For the sake of instruction I have grown use to calling human reasoning which we currently apply to nature *Anticipations of Nature* (because it is an impetuous and premature proceeding), whereas that reasoning elicited from things by proper means I call the *Interpretations of Nature*." "What is more, *Anticipations* are far better at sustaining assent than *Interpretations* because as they are gathered from a few facts, and those of the most everyday kind, they at once impress the intellect and fill the fantasy. *Interpretations* on the other hand, gathered from facts extremely various and widely dispersed, are incapable of striking the intellect suddenly, so that they cannot but sound harsh and discordant to current opinion and almost like the mysteries of faith." [*OFB*, XI, *NO* I.26, I.28.]

⁷⁰ *OFB*, XI, *NO* I.40.

⁷¹ *Ibid. NO* I.41.

⁷² *Ibid*.

- ⁷³ Ibid. NO I.45.
- ⁷⁴ *Ibid. NO* I.45, 46.
- ⁷⁵ Ibid. NO I.45.
- ⁷⁶ *Ibid. NO* I.46
- ⁷⁷ Ibid. NO I.47
- ⁷⁸ *Ibid. NO* I.48.
- ⁷⁹ Aristotle, *Physics*, trans. Joe Sachs, (New Brunswick: Rutgers University Press, 2008), p.68. [199a27-34.]
- ⁸⁰ OFB, XI, NO I.48.
- ⁸¹ *Ibid.* NO I.50, 49.
- ⁸² *Ibid.* NO I.50.
- ⁸³ Urbach, p.121.
- ⁸⁴ Ibid.
- ⁸⁵ OFB, XI, NO I.51.
- ⁸⁶ Ibid. NO 1.52.
- ⁸⁷ *Ibid.* NO I.53.
- ⁸⁸ *Ibid.* NO I.54.

⁸⁹ William Gilbert, *On The Loadstone and Magnetic Bodies, and on the Great Magnet the Earth; A New Physiology, Demonstrated with Many Arguments and Experiments*, trans. P. Fleury Mottelay, (London: Forgotten Books, 2015), p.311.

⁹⁰ OFB, XI, NO I.57.

- ⁹¹ Ibid. NO I.58, 57.
- ⁹² Ibid. NO I.59.

⁹³ Ibid.

⁹⁴ Paul Feyerabend, *Realism Rationalism & Scientific Method: Philosophical Papers*, Vol. 1, (New York: Cambridge University Press, 1981), p.29.

- ⁹⁵ Feyerabend, *Against Method*, p.169.
- ⁹⁶ OFB, XI, NO 1.59.
- ⁹⁷ Ibid. NO I.61.
- ⁹⁸ Ibid. NO I.61-2.
- ⁹⁹ *Ibid. NO* I.63.
- ¹⁰⁰ *Ibid. NO* I.64.
- ¹⁰¹ *Ibid. NO* I.66.
- ¹⁰² *Ibid. NO* I.65.
- ¹⁰³ *Ibid*.
- ¹⁰⁴ *Ibid*.
- ¹⁰⁵ *Ibid. NO* I.23.
- ¹⁰⁶ *Ibid. NO* I.66 ¹⁰⁷ *Ibid. NO* I.67.
- ¹⁰⁸ *Ibid*.
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¹⁰⁹ Ibid.
¹¹⁰ Ibid.
¹¹¹ Ibid.
¹¹² Ibid. NO I.68.
¹¹³ Ibid. NO I.67.
¹¹⁴ Ibid. NO I.68.
¹¹⁵ Barnstone, p.180.
¹¹⁶ See Chapter Two, note 62.

Chapter Four The End of Destruction

The first book of the *New Organon* presents Bacon's case for why an instauration of the arts and sciences is needed. As we noted earlier, this new beginning aims first for *light* and only later for *fruit*. However, before Bacon can implement his vision of a new world, which stands on firm ground, he must dismantle the prevailing and imaginary philosophical systems that, more or less, have remained the same since their inception in antiquity. This dismantling, however, is complicated. Not only do the ancients like Plato and Aristotle continue to govern the schools, but Christian theology also rules over the minds of men. Bacon cannot merely point out certain deficiencies of philosophical and theological thought, which is the purpose of his doctrine of idols. He must also refute these very systems. Indeed, this dismantling of the idols of the theater is the issue that occupies the majority of the first book of the New Organon. Unlike his refutations of philosophies, however, Bacon must treat the theological obstacle more carefully and delicately. He cannot *appear* impious. Within many of his discussions of the ancients, he implies—or sometimes states—analogies to Christianity. His refutations of the ancient doctrines might, perhaps, be less severe had it not been for their great influence on Christianity. The objective of

the following study is to look at what Bacon thinks are the root causes of the retardation of the arts and sciences.

It might be said that Bacon's presentation of the innate idols serves two purposes. The first and more obvious reason is to show the natural deficiencies of man, which then signifies that the senses and intellect need helps. However, the second and less obvious reason is to keep the "honour of the ancients and of all the rest...unimpaired"; he is "not comparing wits and faculties but ways" and he does "not take on the guise of a judge but the likeness of a guide."¹ In other words, by showing that every man's sense and intellect are faulty, Bacon can excuse Plato and Aristotle, for example for their erroneous philosophies. He can, therefore, keep their honor intact, and at the same time, dismantle their philosophies. In the Refutation of Philosophies, Bacon indeed states that anybody "who does not place [Plato and Aristotle] among the greatest human minds has failed in understanding or in candour."² Even the greatest minds are like uneven mirrors. And since they do not realize their deficiencies, they sink deeper and deeper into the comfort of their caves. The first step is to understand the "signs" that show that "current philosophies and studies are in a bad way" and the "causes" of the "incredible and surprising" present state of affairs: for "understanding of the signs opens the way to assent...and explanation of the causes takes away the surprise."³ The "signs" are signs of the ancients' errors. The "causes" are the causes of these errors, and that which is "incredible" and "surprising" is the fact that no progress has been made in correcting the errors

nor has there been any great advancement of the sciences in "twenty-five centuries."⁴ Bacon's sketch of the signs and causes of the errors of the philosophies is itself a history of philosophy. This is what Strauss alludes to above when he claims that the "turning to history...finds its most complete expression in Bacon's philosophy." Bacon presents to us the first history of philosophy in his refutation of philosophy, and the turn to history itself is a special kind of history of philosophy. It seems to presuppose philosophical *ages*, dominating states of mind, and world pictures.

It might be that, taken in isolation, the ancient philosophers and their philosophies are benign. Perhaps, they could have been merely murals of the wall of history and tales of times past. However, the fact that they have stuck around is cause for concern: "the wisdom of the Greeks was professorial and poured forth in disputations, a kind which is quite inimical to the investigation of truth."⁵ Like in his description of the idols of the theater, Bacon places Plato and Aristotle among the sophists. He also adds Zeno, Epicurus, Theophrastus, and their successors to his list of sophists. ⁶ Alluding to what Dionysius says of Plato in the *Seventh Letter*, Bacon derides all of their sophistical doctrines as "*the words of useless old men to inexperienced young ones*."⁷ In twenty-five hundred years, there have only been six centuries that were "productive of sciences and helpful to their advancement."⁸ He is almost certainly speaking of the more-ancient Greek period. That is, the more-ancient Greeks (Empedocles, Anaxagoras, Leucippus, Democritus, Parmenides, Heraclitus, Xenophanes,

Philolaus, and the rest) "got on with their pursuit of truth more quietly, rigorously, and simply" than the sophists above. However, they were not even "immune to their national weakness" of setting up sets and seeking favor from the public.⁹ Faulkner explains their failings in the following passage:

The point is that these pre-Socratics supposed that knowledge is possible through the *ratio* of fundamental bodies, however this varies from sense-perception itself, and that they also thought that the knowing of such fundamentals was in itself the most serious human activity. That is, they also supposed themselves knowledgeable about the goods of the human world...Bacon, however, thought that the doctrines of the pre-Socratics were contradictory, that is, that their materialism was contradicted by their rationalism.¹⁰

Lampert, however, thinks that Bacon "implies that his own thought is a return to the pre-Socratic philosophers."¹¹Faulkner's position, nevertheless, is in line with Bacon's criticisms of the more ancient Greeks. In other words, the objects of their focus were better than the sophists, but they were still prone to the same "national weakness," and even their philosophies deviated "into this sort of nonsense [that of setting up sects and courting public favour]."¹²

Bacon again compares the Greeks to children; they talk but do not generate.¹³ Although the comparison of the Greeks to children is straightforward, it is worrying that we are reminded of Bacon's earlier statement that we must enter the Kingdom of Man in the likeness of a child. The Greeks were children, yet we must also be like children. Can he have it both ways? Did Bacon not admonish the Greeks for being children? We must also ask what Bacon's contemporaries are: are they children? It does not appear so (if they have to enter the kingdom of man like children). In a way, Lampert might be partially

correct in saying that Bacon wishes to return the minds of men to those more ancient times before they were corrupted by philosophies and theologies. However, Faulkner is correct in his assessment of those more ancient Greeks. Bacon states explicitly that even in those more ancient periods "when men's intelligence and letters flourished most or at least tolerably well, natural philosophy absorbed very little of their energies."¹⁴ He does refer to their philosophy as the "great mother of the sciences," but he clearly does not imply, as Lampert thinks he does, that "his own thought is a return to the pre-Socratic philosophers."¹⁵

The more ancient Greeks correctly looked to nature, but they still produced no fruits. Among the "signs none is more certain or noble than that derived from fruits," and the "discovery of fruits and works as it were guarantees and underwrites the truth of philosophy."¹⁶ In other words, the more ancient Greeks were right about their object of inquiry but did not produce anything useful, whereas the less ancient Greeks neither looked at the right things nor produced anything. If philosophies are sound, they should grow and progress. If they are based solely on the opinions of men, they are barren. Similarly, philosophies that claim that the possibility of knowledge is impossible because of the "subtlety of nature, the obscurity of things, and the weakness of the human wit" betray themselves.¹⁷ In other words, if the statement that one cannot know anything were true, it could not have been made.¹⁸ That is, such a statement implies that

one has knowledge about which his statement claims he cannot have. These are "dogmas which are not merely desperate but actually dedicated to despair."¹⁹

The consent commanded by the philosophies of Plato and Aristotle is by no means an indication of their depth or superiority to other ancient doctrines that have not survived. Because the more ancient philosophers were well known in the Roman Empire, Bacon blames the loss of their works and the survival of Plato and Aristotle's works on the barbarian takeover of Rome: "when the barbarian flood burst into the Roman Empire and human learning suffered shipwreck, the philosophies of Aristotle and Plato were, like timbers of lighter and less solid matter, saved from time's breakers."20 That Plato and Aristotle's works were all that remained (mostly) intact does not mean that they are more valuable than those that were lost. It means instead that they were easier for the vulgar to understand than the other deeper philosophies. Aristotle commands consent not because agreement was reached by free judgments but because people have "surrendered themselves to it on the precedent and authority of others."²¹ Bacon finds that consent is an indication that one's judgment has gone awry, and claims that the "worst of all omens in intellectual matters is taken from consent. The only areas where consent is not the worst omen is in divinity and in politics. However, given the fact that logic, ethics, and politics are to be transformed under Bacon's project, it is very likely that Bacon is not being upfront with the exclusion of politics and religion from his critique of consent. If one were to argue that his judgment tells us that Plato and Aristotle's philosophies are not light and

sophistical, as Bacon claims, but are, in fact, deep and offer the intellect a great many rewards, Bacon would point to his previous signs of philosophical errors. The very lack of rewards reaped from Plato and Aristotle belies any supposed admiration for them.

We now come to the reasons (the causes of) why these errors have lasted for so many ages. His presentation is certainly an historical account of philosophy, and like his system of skepticism (the doctrine of idols), this history of philosophy was altogether new but is now a commonplace in modern philosophical works. According to Bacon, there are only three great revolutions of learning: those of the Greeks, the Romans, and the Western Europeans.²² It is also clear that the first two revolutions have been subsumed under the third. For two thousand years, the "sciences have got bogged down and stayed pretty much where they were with no notable progress at all."²³ Only a couple centuries of learning "can be properly allotted" to each revolution. The cause of the stagnation of the advancement of the sciences in each revolution is "the shortness of time favourable to them."24 In other words, each revolution faced a predicament or obstacle to the advancement of learning. As we saw above, during the Greek age "natural philosophy absorbed very little of [the philosophers'] energies." In the Roman age, "the philosophers' hardest thinking and best efforts were engaged and spent on moral philosophy" and political affairs. Finally, in the age of the Western Europeans, "by far the greatest number of the most outstanding minds gave themselves to theology."²⁵ The period in

which natural philosophy flourished most was that of the more ancient Greeks. Even in this early period, the so-called Seven Wise Men (save Thales) "devoted themselves to moral philosophy and civil affairs," and "after *Socrates* had brought philosophy down from the heavens to the Earth, moral philosophy was even more popular, and turned men's minds away from natural philosophy."²⁶

The term "pre-Socratic," which was used by both Faulkner and Lampert, does not appear in Bacon's description of the more ancient philosophers. We have likewise omitted the term until now. Bacon's reference to Socrates above is the only place in the entire *New Organon* in which Socrates is mentioned. Yet, we see that what held each revolution back is that the best minds concerned themselves with some form of moral philosophy. Above we saw that Bacon excluded Thales from the list of the Seven Wise Men who devoted themselves to moral philosophy. Accordingly, Hans Blumenberg gives an account of Bacon's "irritation at the configuration forged in the Thales anecdote":

In the autumn of 1624, while Bacon was recuperating from a serious illness, he dictated a set of apothegms from memory; among them, a variant on the Thales anecdote. It emphasizes the polysemy of Thales' doxographically eminent relation to water: he did not need to fall into the water to observe the stars; looking at the water and seeing their reflection would have sufficed. Doing what he did, however, he would not have been able to learn anything about water since he only looked upward at the stars. The impression is barely avoidable that Bacon alters and anecdote through associations that evoke extends the the protophilosopher's double character: both as the star gazer who dismisses the mediated optics of reflection and as the inventor of the first cosmogony from one unifying principle, that of water, the confirmation of which he experiences in a crude way, by falling into it.²⁷

The purpose of Bacon's retelling of the fable²⁸ is to show that the star gazing Thales looked to those things "where man has no power of operating but only of knowing," and found instead that the "investigation of fact itself or of the truth of the matter...must be traced back to those primary and catholic axioms concerning simple natures."²⁹ It is easy to see, in Blumenberg's account of Thales's double character, the kind of cosmogony that Bacon rejects. This double character results in the pre-Socratic contradiction that Faulkner speaks of above (the contradiction between their materialism and rationalism). What Bacon wants to show, however, is that the "vulgar, vile, or very subtle" things must be included in the investigation of nature.³⁰

It was the Socratic turn that bogged down the sciences. Socrates is the real culprit behind the stagnation of the sciences. In Aristophanes' *Clouds* and Plato's *Parmenides* and *Phaedo*, we have three accounts of Socrates' initial interest in natural philosophy. Aristophanes's comically slanderous account of Socrates' natural philosophy is brought against Socrates in Plato's *Apology* as evidence of his atheism. However, in Plato's accounts, which we will focus on here, we see a young Socrates and an old Socrates. In the *Parmenides*, Socrates laments that he has "hit a dead end many times" over whether to speak the same or differently about the form of Man and the form of fire or water.³¹Parmenides then asks Socrates whether "those things that would seem to be laughable, such as Hair and Mud and Dirt or any different thing that's very worthless and lowly" also have forms.³² Socrates answers, "No, not at all," for "these things are as we see them right here, and it would be grossly out of place to think that there is some form of them."³³ These are the exact kinds of things

that Bacon tells us to investigate. In the *Phaedo*, Socrates tells those present in his final hours of his initial interest in natural philosophy but also the reasons for his turning away from natural philosophy. This is a brief excerpt from the discussion:

"Listen then and I shall tell you. For I, Cebes," he said, "as a young man was wondrously desirous of that wisdom they call 'inquiry into nature.' This wisdom seemed to me grandiose-to know the causes of each thing, why each thing comes to be and why it perishes and why it is; and very often I cast my thought to and fro looking first of all into questions like these: Is it when hot and cold bring about a certain fermentation as some people say, that animals grow into organisms? And is the blood that by which we're thoughtful? Or is it air or fire? Or is it none of these, and is it the brain that produces the senses of hearing and seeing and smelling; and would memory and opinion arise out of these, and in this way out of memory and opinion brought to a state of rest arises knowledge? And then in turn I looked into the processes by which these things pass away and the affections that pertain to heaven and earth, until I ended up with the opinion that my natural fitness for this 'looking into things' was next to nothing...Well then after these experiences," said he, "since I had had it with this looking into beings...it seemed to me that I should take refuge in accounts and look in them for the truth of beings."³⁴

Bacon utterly rejects this turn to accounts even more than what Socrates's insistence that the filthy are without forms. At least in the *Parmenides*, Socrates shows interest in natural philosophy. However, in the *Phaedo*, Socrates explains why he turned from natural philosophy to human accounts. This turn to speech or accounts is what eventually led to the turn to moral and political philosophy. This is what Bacon means by saying that Socrates brought philosophy down from the heavens to the earth. Socrates cut the sciences off from their roots, and because of this, "it is no wonder that they do not grow."³⁵ To sum up, the divine and the human were separated *before* Socrates brought the divine down to earth by turning to accounts; but after this turn, the way was open for moral accounts to

thrive in philosophy. His justifications for his turn to accounts cut off philosophy from its proper path. The Romans had practical reasons for turning to politics, for the "sheer size of the Roman Empire required many men's services."³⁶ Like the Greeks, however, the Roman preoccupation with moral philosophy finds its origin in the Socratic turn. Christian theology used Plato's mixture of philosophy and theology and Aristotle's logic, which supported itself and advocated for its use in solving questions through its own system of disputation. Lampert finds that, in attacking Plato and Aristotle, Bacon is also attacking the edifice that supported their philosophies: "these systems were preserved because they proved serviceable to the natural theology of Christianity, that greatest inundation into the Roman Empire." In other words, Christianity drowned the natural philosophy of the pre-Socratics *because* it threatened the very enterprise of and reason for religion.

Leo Strauss finds that Bacon "starts from the premise that moral philosophy as the theory of virtue and duty has been perfectly worked out by classical philosophy."³⁷ That is not to say that Bacon kept or adhered to the classical moral philosophy. In fact, we see that Bacon desired to render ancient political philosophy utterly superfluous by "perfecting the other sciences—logic, ethics, and polices—by taking the route" he has mapped out.³⁸ Travis D. Smith is correct in his assessment that Bacon wishes to imitate Jesus, but this is not *all* that Bacon implies.³⁹ Socrates is only relevant because of how classical moral and political philosophy fits into Christian theology. The implication as to why the

other philosophies were lost is that Christianity destroyed them. They were dangerous to Christianity. Moral and political philosophy props up Christianity with its fruitless arguments and lack of ambitions.

When Socrates pulled philosophy down from heaven to earth, he came as a serpent or, perhaps, as Satan himself. By turning to accounts, we see that the moral and the political became the emphasis of philosophy. That is not to say that the philosophies of Socrates, Plato, or Aristotle are only concerned with moral and political issues. It is to say that, like Satan, Socrates was able to turn the mind of man to accounts of the good and the bad, the right and the wrong, and the noble and the wicked. One might say that Socrates lit the way to the Tree of Knowledge while he neglected the Tree of Life.

The Romans focused primarily on moral philosophy and civic affairs. Rather than the philosophical, Bacon speaks of the practical aspects of Roman politics. They cared about the administration of their empire and not about questioning it. In the Roman Empire, there was one political system, and thus, political philosophy either endangered its existence or was superfluous. This would explain why the Romans took up practical politics rather than theoretical.

Western Europeans are not children like the Greeks were. They are aware of their sins. This awareness was made popular by Jesus but was prepared for by Socrates. Bacon tells us that the "ancient sciences have acquired a great deal of prestige and credit from the vanity and folly of those who have set out new

ones."⁴⁰ The people who have set out the "new one" are "idle boasters and cranks," who have "loaded the human race with [thirteen] promises":

Guaranteeing and holding out the prospect of prolonging life, delaying old age, relieving pain, making good natural defects, deceiving the senses, binding and stimulating the affections, illuminating and extending the intellectual faculties, transmuting substances, reinforcing and multiplying motions at will, making impressions and alterations on the air, drawing down and managing celestial influences, foretelling things to come, representing things distant, revealing things hidden, and so on *ad infinitum*.⁴¹

We see that Jesus made a great many of these promises. He promised everlasting life, he relieved pain, he bound and stimulated the hearts of men to God, he brought faith into the intellect, he promised the transmutation of substances, and so on and so forth. Bacon rejects all of these promises and, in reiterating them, he means to show that they are nonsensical. He draws a distinction between these lavish promises and the actual deeds of Julius Caesar and Alexander the Great. Bacon contrasts the actual deeds of these two great conquerors with the imaginary fables of Amadis of Gaul and Arthur of Britain.⁴² The former men were pagans while the latter were said to be devout Christians. Perhaps the reason that Jesus is not one of Bacon's conquerors is because Bacon puts him in the same category as Amadis and Arthur, for it is truly religion, "which has such influence over men's souls," that has held back the growth of natural philosophy.⁴³

The attack on the Socratic turn is not merely a covert attack on Christianity but also truly an attack on the turning of philosophy to accounts in speech. Bacon points out that all of the discoveries in the mechanical arts "are more ancient than

philosophy and the intellectual arts, so that (if the truth be told) when the rational and dogmatic sciences got started, the discovery of useful works came to a standstill."⁴⁴ In other words, the Socratic turn is what turned man away from the useful and toward the rational (in terms of looking at accounts). As we have seen, pure rationalism only leads to fantasy and distortions of the world and its things. Although Bacon offers us numerous hopes to think that progress will come in following his project, he also offers the following thought:

Lastly, even if the breath of hope blowing from *that new continent* were much weaker and less perceptible, yet I have decided that (unless we evidently wish to be mean of soul) we must make the attempt. For not to try and not to succeed are quite different risks, for by not trying we cast aside an immense good but by not succeeding we lose a little human labour. But from what I have said, and also from what I have not, it seems to me that we have a great deal of hope, not only to persuade a keen man to have a go, but also to make a wise and moderate man believe in it.⁴⁵

Bacon truly wishes to replace the promises of Christianity with the promise of science. The philosophical systems must also be "utterly destroyed."⁴⁶ The arts are to serve the future of all humanity, for "no empire, no sect, and no star seems to have exerted a greater effect and influence on human affairs than...mechanical innovations."⁴⁷ Also, it is the greatest human ambition to strive to renew and increase the "empire of humanity itself over the whole universe of things," and the empire of man over nature lies in the arts and sciences alone.⁴⁸ These are the aims and promises of Bacon.

According to Kennington, the reason that Bacon emphasized charity, that is, philanthropy, is that Bacon "learned from Machiavelli that unarmed prophets, if armed with the right doctrines, can succeed."⁴⁹ Bacon borrowed the Christian

teaching on charity, "in order to consecrate the mastery of nature."⁵⁰ Charity, then, becomes philanthropy. As we have seen earlier, attaching a philanthropic end enables Bacon to seek the support of the vulgar, those people whom the fruits of the project will benefit. He, thus, entices the select few, those men with great intellects, to take up the reins of his project by loosening the grip on truth and knowledge from philosophies and theologies. Lampert explains that Bacon "reverses the Socratic turn set out in the *Phaedo*, the turn away from natural philosophy to the *logoi*" because the turn has been captured "by a misologic and misanthropic religion."⁵¹ This is a similar sentiment to what Strauss said above, namely that Bacon found that moral philosophy had been perfectly worked out by classical philosophy. Therefore, we see that Bacon's purpose of using the Christian value of charity was to undermine Christianity. Lampert claims that Bacon is not one "who no longer knows what religions are good for," and thus, "Baconianism is a utopianism promulgated by a great realist."⁵²

- ⁴ *Ibid. NO* I.78.
- ⁵ *Ibid. NO* I.71.
- ⁶₂ Ibid.
- ⁷ Ibid.
- ⁸ *Ibid. NO* 1.78.

¹ *OFB*, XI, *NO* I.32.

² Farrington, p.111.

³ OFB, XI, NO I.70.

⁹ Ibid. NO I.71.

- ¹⁰ Faulkner, p.136
- ¹¹ Lampert, p.119.
- ¹² OFB, XI, NO I.71.
- ¹³ Ibid.
- ¹⁴ *Ibid.* NO I.79.
- ¹⁵ Ibid.
- ¹⁶ *Ibid.* NO I.72.
- ¹⁷ *Ibid.* NO I.74-5.

¹⁸ David Stove, The Plato Cult and Other Philosophical Follies, (Cambridge: Basil Blackwell, 1991), p.61. Statements of this kind are ones that contain epistemic claims about the very nature of knowledge Stove calls this the Ishmael effect. He draws the name from the protagonist of Moby Dick. Had the novel not begun with Ishmael's guoting Job, "I am only escaped alone to tell thee," but instead began with the Ismael's saying that he was on the crew of the Pequod in which everyone perished; the statement would obviously be absurd. Yet these are the exact kinds of statements philosophers tend to make-often in the form of I know that I cannot know, or We cannot know anything about the things in themselves, and other statements of this sort. They are not contradictions, but they are afflicted with the Ishmael effect; and similarly, they almost always lead to equally fruitless questions about the possibility of knowing this or that: Is it possible that anyone survived the sinking of the Pequod? Or, is there an external world? Is knowledge possible? They are at the very least disingenuous statements or questions. A twentieth-century analytic thinker would almost certainly regard these kinds of questions and statements as bordering on nonsense. And Bacon would certainly agree to the extent that these are cases of the idols of the market. Words like the understanding, knowledge, or truth taken away from any context either represent vague notions or are entirely empty notions that only have sense in philosophical disputes.

- ¹⁹ OFB, XI, NO I.75.
- ²⁰ Ibid. NO I.77.
- ²¹ *Ibid*.
- ²² Ibid. NO I.78.
- ²³ Ibid. NO I.74.
- ²⁴ Ibid. NO I.78.
- ²⁵ Ibid. NO I.79.
- ²⁶ Ibid.

²⁷ Hans Blumenberg, Laughter of the Thracian Women, trans. Spencer Hawkins, (New York: Bloomsbury, 2015), p.62.

²⁸ "But the truth is, they be not the highest instances that give the securest information; as may well be expressed in the tale so common of the philosopher, that while he gazed upwards to the stars fell into the water; for if he looked down he might have seen the stars in the water, but looking aloft he could not see the water in the stars." [Advancement, p.71].

- ²⁹ OFB, XI, NO II.5.
- ³⁰ *Ibid. NO* I.121.

³¹ Plato, *Parmenides*, trans, Albert Keith Whitaker, (Newburyport; Focus Publishing, 1996), p.28 [130c-130c4]. ³² *Ibid.* p.28 [130c5-7].

- ³³ *Ibid.* p.28 [130d1-3].

³⁴ Plato, *Phaedo*, trans. Eva Brann, Peter Kalkavage, & Eric Salem, (Newburyport: Focus Publishing, 1998), p.75-79 [96A4-100A4].

³⁵ OFB, XI, NO I.80, I.107.

- ³⁷ Strauss, *Political Philosophy of Hobbes*, p.86-7.
- ³⁸ OFB, XI, NO I.127.

³⁶ *Ibid.* NO 1.79.

³⁹ Travis D. Smith, "Being Altogether Bad, Becoming Altogether Good," *Arts of Rule: Essays in the Honor of Harvey C. Mansfield*, (Lanham: Lexington Books, 2009), p.178-9. ⁴⁰ *OFB*, XI, *NO* I.87.

⁴¹ *Ibid*.

⁴² Ibid.

- ⁴³ Ibid.
- ⁴⁴ *Ibid. NO* 1.85.
- ⁴⁵ *Ibid. NO* I.114.
- ⁴⁶ *Ibid. NO* I.124.
- ⁴⁷ *Ibid. NO* I.129.
- ⁴⁸ Ibid.
- ⁴⁹ Kennington, p.13.
- ⁵⁰ Ibid.
- ⁵¹ Lampert, p.139; 135. ⁵² *Ibid*, p.140.

Chapter Five Conclusion

As man becomes a God to man and to nature not only is religion no longer necessary but the entire framework of morality is no longer founded on how man *ought* to act but "as we actually find it and not as someone's own private reason hands it down to him."¹ As we have seen, Bacon dismisses classical and scholastic philosophical systems as apish patterns of arbitrary abstractions that man's idiosyncrasies and imaginations have jumbled together. Bacon intends his instauration not only to reform the minds of men but also to establish and promote a criterion of truth that leads to causal knowledge that is prepared for and tested by works. He expresses this sentiment near the end of the first book of the *New Organon*:

So let men know (as I have said above) how great is the gulf between the *Idols* of the human mind and the *Ideas* of the divine. For the former are nothing more than abstractions made arbitrarily, whereas the latter are authentic seals that the Creator has stamped upon his creatures according as they are impressed and defined in matter by true and exact lines. Thus truth and utility are (in this situation) the very things themselves; and the very works give much more as guarantors of the truth, than providers of material benefits.²

What is unique to Bacon is that he wrests the word "truth" from its familiar philosophical surroundings and seems to relegate it to a secondary role as an equal to "the very things themselves" and "utility." Bacon does not advocate or

prepare the way for some proto-pragmatism. The "true and exact lines" that are "impressed" and "defined" in "the very things themselves" are not phantasms of a purely utilitarian undertaking. Rather, Bacon redirects the mind from its empty notions and theories to the "true pattern of the world as we actually find it."³ It seems as though Bacon endorses a position that takes seriously the possibility of an intelligible nature that obeys discoverable natural laws. Bacon may have simply stripped "truth" of its abstract character, and instead fused the thing with the true.

However, Bacon also makes a surprising admission: "the very contemplation of things as they are without superstition or imposture, error or confusion, [is] intrinsically more worth than all the fruits of discoveries."⁴ As Kennington points out, there is much confusion about this statement if we understand it with respect to the quotation above. However, Bacon is not speaking of the ancient form of contemplation but rather contemplation in terms of an actual understanding of the processes of the world at the exclusion of the final causes that are "the defect of the ancient contemplative way." ⁵ A contemplation of this sort might be a physicist's understanding of quantum physics, a biologist's understanding of evolution, a chemist's understanding of chemical reactions, and so forth. Strauss also finds that the modern project as understood by Bacon "demands that man should become the master and owner of nature or that philosophy or science should cease to be essentially theoretical," that is, the utter destruction of philosophy.⁶

The focus on natural processes not only leads to new knowledge but also, and most importantly, to new abilities to *test* and *verify* our knowledge of these processes. It is still not clear how the contemplation of processes is compatible with Strauss's assertion that Bacon's sciences is not essentially theoretical. Bacon, however, provides a clue to his thinking in the final lines from Book One:

I do not affirm that nothing can be added to what I prescribe; on the contrary, as one who observes the mind not only in its innate capacity but also insofar as it gets to grips with things, it is my conviction that the art of discovering will grow as the number of things discovered grows.⁷

Bacon seems to imply that the very nature of the mind will change as human begins change the nature of things. This might mean that the very contemplation of things is itself a kind of invention of things. The contemplation of processes means, then, understanding how to generate and superinduce new natures, and this process, in turn, alters the very nature of the mind. And we can see that the contemplation of processes is itself a kind of discovering. In other words, the contemplation of things is to understand not only how they are but also how to generate or alter them. The processes of nature are the forces of creation, and as we harness these forces, we become creators not *merely* of new natures but of an entirely new *Nature*.

We have seen that, because Bacon's method has universal application, *its* methods, measures, and means of evaluation holds jurisdiction over the human sciences. He foresaw the dominion of man over nature. The arts and sciences alone determine the empire of man over things. The aim of human power is to generate and superinduce new natures. The ways to human power and

knowledge are almost identical; yet, the speculative department is accustomed to meddling with abstractions and, thus, must be bounded by the active department. And lastly, Bacon tells us that the prescriptions for the active and the contemplative departments are the same thing, "for what is most useful in operating, is most true in knowing."⁸

However, what is most mentioned about Bacon's project is the need, even in the modern age, of his system of skepticism. The "helps" Bacon provides do not eradicate the idols of the mind; and even if the classical philosophies and modern theologies were abandoned, there would still be new systematic representations of the world and its processes. It must be stressed that Bacon's doctrine of idols is a system of refutation that need not be forgotten. Modern science is, essentially, founded on the idea that all theories must be able to be refuted, and the same difficulties and obstacles that presented themselves in Bacon's time are present today. Paul Feyerabend explains this notion in the following way:

Theories, pictures of the world, are not unchangeable and absolute truths; rather, they are attempts by thinking by [sic] imperfect human beings to understand the world surrounding them. The expectation that the pictures possess a kernel of truth cannot be justified. There is no authority whose communications can replace our lack of knowledge. Experience, too, is ultimately only a human event, and, as such, subject to mistakes and criticism. Theories must be developed in a form that makes them easily open to criticism, and must then be criticized relentlessly. Certainty, 'sure results', are neither achievable nor desirable. The proof that a result is 'secure' is at the same time a proof it is *not* objectively relevant. Even long acceptance is no sign of truth; an obvious weakness might have been overlooked due to prejudice or lack of multifaceted criticism. This is, basically, the scientific method...Philosophy, to name only one discipline, has made it its task since Plato to reintroduce mythical thought in a rational form, that is with greater cleverness. In physics, however, ever since the so-called 'scientific revolution' of the 16th and 17th centuries, the

situation became very complicated. In words one says one thing, and in practice does something *completely different*, trying to reinterpret facts according to the words, which does not happen [sic] without violence and distortion. To put it in a more concrete way: just as the Ionians did, men of the present invent bold theories for which they have no justification and which are by no means appropriate to give dogmatic certainty. But they present these theories as if they had derived them from authority. They are inventors, geniuses with bad consciences, and this bad consciousness comes from the fact that mythological forms of knowledge, the question for certainty, for a secure foundation, for an authority, still count ideals of knowledge worth striving for...Hence we may think of theory as distinct from a myth. But it is presented as a myth. By way of a mistaken mathematical derivation physicists try to link it to the solid foundation of experience, and, in so doing, to justify it. The belief that this justification is successful leads to a highly dogmatic attitude, which identifies scientificity with Newtonianism, and which made it so difficult for Einstein to obtain acceptance for his own, completely different ideas. We can guite generally say that most physicists from 1700 until about 1920 found themselves in a sort of schizophrenia: they did one thing, and they tried to persuade both the world and themselves that they were doing something completely different. They followed the tracks of the Ionians, they speculated, even if somewhat fearfully at times, but very often regardless of prejudices and even of experience. They tried to give the impression that, beginning with secure facts, they slowly built a solid system of thought that could, and should, be nothing other than a modern myth.⁹

We see that in Feyerabend's account of modern science, Bacon's doctrine of idols not only has a place but also, and more importantly, is still needed in order to continue to advance the sciences. We see that the dogmatisms of the ancients have been replaced by scientific doctrines that are not less dogmatic. They may provide more fruits than the classical doctrines but this does not mean that they do not obstruct the continuation of the scientific project.

¹ *OFB*, XI, *NO* I.124

² *Ibid. NO* I.124

³ Ibid. NO I.124

⁵ Kennington, p.29. This break between the ancient form of contemplation and the one Bacon introduces was apparent in our discussion of the idols.

⁶ Leo Strauss, *Liberalism Ancient and Modern*, (Chicago: University of Chicago Press, 1995), p.240.

⁷ *OFB*, XI, *NO* I.130.

⁸ *OFB*, XI, NO I.129; *NO* II.1; *NO* II.4.

⁹ Paul Feyerabend, *Physics and Philosophy: Philosophical Papers*, Vol. 4, (New York: Cambridge University Press, 2016), p.216-7.

⁴ *Ibid. NO* I.129

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