**Creation, Fall, and (Technological) Redemption: Francis Bacon on Work and Man’s Right over Nature**

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**Introduction**

Nature, in the modern imaginary, is an obstacle to human well-being and is therefore the subject of human power and technological innovation. Francis Bacon (1561-1626) was a principal architect of this modern understanding of nature. This chapter will pay special attention to one element that played a particularly important role in how Bacon came to understand nature’s resistance to human concerns, on the one hand, and the way in which something could be done about it: the Judeo-Christian concept of the fall of man (as chronicled in Genesis 3).

When we pay close attention to Bacon’s historico-theological framing device of the fall of man, we see that the central problem of human existence is the fact that man has lost his dominion over nature such that *work*, and not *rest*, is his constant mode. Men must work to toil the ground and are in constant search for labour-saving devices to reduce the amount of work required to satisfy their material needs. To make matters worse, the dominant approach to natural inquiry has proved unable to produce technological fruit. However, if there were a method of natural inquiry that could more effectively enable us to manipulate nature for our benefit, we might be able to enter into God’s sabbath rest, for which we were originally created. This, I shall attempt to argue, is Bacon’s view.

As is the case with any major thinker, the scholarship on Bacon is marked by a range of interpretations and emphases, but a few key themes have emerged in the work of disparate commentators. It is generally agreed that Bacon was interested in increasing man’s power over nature through a novel approach to natural science.[[1]](#endnote-1) Baconian experimental science, which itself is the subject of much scholarship, is often tied to an explicit moral intention. Bacon is thus described as a great humanitarian.[[2]](#endnote-2)

Scholars of a Straussian persuasion have deepened this analysis in a number of important ways, for example by drawing attention to Bacon’s transformation of the relationship between man and nature, by highlighting his connection to Machiavelli, and by emphasizing some potentially less-favourable political implications of his thought. However, much of this work does not deny what the so-called mainstream commentators have written about Bacon’s influence on modern scientific method.[[3]](#endnote-3)

Within this consensus, such as it is, lie some interesting disagreements, the navigating of which will help to clarify the argument of this chapter. One important debate concerns the role of religion in Bacon’s thought. Robert Faulker, for example, argues that Bacon’s attempt to appear pious is disingenuous, a mask over the subversive nature of his thought. Bacon, he writes, “revises Christianity toward a universal creed of humanity that will excuse war against Christian kingdoms and especially against Christ’s kingdom.”[[4]](#endnote-4) A recurring theme in Faulkner’s study is Bacon’s transformation of Christianity from an other-worldly to a this-worldly phenomenon; implied by Faulker, it seems to me, is that Bacon was not religious in the traditional sense.

Stephen A. Mcknight, on the other hand, suggests that Bacon’s thought can only truly be understood by noting his authentic religious beliefs. He notes the importance of religious themes throughout Bacon’s corpus and argues that the restoration of a scientific natural philosophy can only be understood as part of a larger religious restoration.[[5]](#endnote-5)

The purpose of this chapter is not to settle the question of whether Bacon believed his own religious statements – though it will bear on that question – but simply to read some of his writings with his biblical and theological statements in the foreground. Whether or not he truly believed his statements about, for example, the fall of man, it is clear that he structured his socio-scientific project in terms of these biblical and theological categories. The view put forth in this chapter ends up somewhere in between Faulkner and McKnight. I share the view of Faulkner and others[[6]](#endnote-6) that Bacon’s project is radically new, yet McKnight is correct to highlight the theme of religious restoration. As will be made clear in what follows, these are reconciled by the recognition that Bacon drastically re-interprets the religious doctrines to which he appeals. He presents a religiously inspired scientific project yet does so in distinctly modern and revolutionary terms.

Bacon’s work is replete with biblical references and allusions, some of which will be explored in what follows. For example, the introduction to *The Great Instauration* refers to the biblical wisdom literature.[[7]](#endnote-7) The Old Testament book of Ecclesiastes is filled with repudiations of human ambition and wisdom, and would thus seem a strange ally for Bacon. He refers to Ecclesiastes 1:14, which describes the works of man as “vanity and vexation of spirit.”[[8]](#endnote-8) To avoid what appears to be a glaring rebuke of his technological project, he interprets this passage as referring to human works outside of God’s design, and not to human activity that accords with divine ends. “If we labour in your works,” Bacon writes, “you will make us to share in your vision and in your Sabbath.”[[9]](#endnote-9) The reference to the Sabbath hints at the eschatological nature of the Baconian project. Throughout the old and new testaments, sharing in God’s Sabbath rest refers to the overcoming of the curse placed upon humanity in the Garden of Eden. Consider Saint Augustine’s reference to resting in “the sabbath of eternal life” in his *Confessions*, or the title of the concluding chapter of *The City of God*: “Of the Eternal Felicity of the City of God, and of the Perpetual Sabbath.” For Augustine, *the* theologian of medieval Christendom, God’s sabbath rest referred to the Heavenly City in the age to come: “After this present age God will rest, as it were, on the seventh day, and he will cause us, who are the seventh day, to find our rest in him.”[[10]](#endnote-10)

Bacon intends for his new method of science to give men the means of overcoming the struggle of existence that resulted from their fall from grace – in the present age, not the next. It need hardly be said that his this-worldly vision of God’s Sabbath rest occurring *in time* and *as a result of human activity* was a radical departure from traditional interpretations of the biblical vision.

With these lengthy introductory points made, we can clarify the purpose of this chapter. It will attempt to read Bacon’s scientific works with two things in view: (1) the question of how the concept of work influenced his scientific project, and (2) the way in which his scientific thought was structured by the biblical themes of creation, fall, and redemption (or restoration). As we will see, these points are intimately related: it is only through the lens of Bacon’s interpretation of creation, fall, and redemption that the importance of work and rest come into view. Put simply, I argue that we can read Bacon as using the fall as a framing device, giving him an account of the origin of the greatest human difficulties and the categories by which he attempted to address them. With the fall, mankind’s original power over nature was lost, such that great labour and toil – that is, *work* – are required to preserve our fragile lives. Nature is resistant to human concerns, and even human nature itself is no longer fit to exercise its original right. The solution, to both non-human nature’s resistance and human nature’s inability to control nature, is a new, methodical approach to natural inquiry. Bacon’s method of induction is not simply a means whereby labour-saving devices may be invented, it itself is a labour-saving device that allows fallen men to discover the inner workings of nature in such a way that mankind’s original power over nature can be regained.

**The Fall of Man and the Increase of Labour**

Bacon’s understanding of the fall frames his scientific and political project, explaining why it is necessary and the way in which it can offer meaningful solutions. To see how, we must begin with his allusions to divine creation, the fall, and the Sabbath rest. He ends his preface to The Great Instauration with a prayer that, among other things, men may “extract...from knowledge the poison infused by the serpent.”[[11]](#endnote-11) He explains: knowledge itself was not the problem, but rather knowledge infused with pride. Men did not fall simply because they desired or sought knowledge, for even Adam constructed a system of knowledge by naming the animals.[[12]](#endnote-12) Men fell because they pursued *moral* knowledge and hence the ability to legislate for themselves without relying on divine guidance. The implication is that as long as our search for knowledge is animated by *charity* rather than *pride*, it fulfills the divine mandate to discover the hidden realities of creation.

The “Plan of the Work,” which follows the preface and acts as an introduction to his entire project, closes with a comparison of divine creation and the human attempts to create new works within it. It repeats one of Bacon favourite images, namely God’s creating light on the first day of creation, and only after that creating tangible benefits – the implication being that Bacon’s inductive method will create knowledge at first and tangible benefits only after a lengthy passage of time. The situation men face, however, when attempting to manipulate nature for their own ends, is different. Instead of being able to implement an orderly and rational plan, they are met with a world full of “vanity and vexation of spirit.” The world in which men live is meaningless and impossibly difficult to organize and manipulate. Because of this, Bacon concludes, “he has no rest.”[[13]](#endnote-13) It is only by following the scientific method outlined in *The Great Instauration* that we can enter into the Sabbath rest we have been promised. This is obviously a this-worldly Sabbath, consisting of the convenient satisfaction of material wants. There is no explicit reference to the fall, but it rings loudly in the undertones of this passage, especially insofar as the problem to be overcome is nature’s resistance to human works and Man’s inability to enjoy the Sabbath rest.

These allusions to the fall are augmented by an interesting source: Bacon’s personal confession of faith, which was not printed until years after his death. The date of composition is not known, though some date it to before Bacon’s knighthood in 1603[[14]](#endnote-14) – and therefore relatively early in his intellectual development.

His confession of faith contains a lengthy discussion of God’s character as creator. All things were made “in their first estate good,” and governed by “constant and everlasting laws,” to which Bacon gives the name *nature*. [[15]](#endnote-15) These perfect laws were altered as a result of the fall, in a process Bacon describes as a *privation* of the original virtue of creation and as a *revocation*. The primary effect of the fall, therefore, is that the very laws of nature changed for the worse. The world in which we now live lacks its original virtue, such that it is no longer conducive to our sharing in God’s Sabbath rest. At this point in his confession there is yet no explicit statement of traditional theological themes from the creation and fall narrative, like original sin (Augustine) or total depravity (Calvin). A few paragraphs later Bacon mentions the defacing of God’s image in man, but interprets this merely in terms of man’s ability to subdue nature. The image of God in man, or that which makes him like God, is his right over nature, he thereby suggests. By introducing changes to the laws of nature that make it harder to subdue nature, man’s God-given role as master of nature has been corrupted, or *defaced*, to use Bacon’s term.

At this point it is worth dwelling on an important difference between Bacon’s theory of the fall and what was common to prevailing theological views of the time. Saint Augustine’s *City of God*, for example, interprets the fall of man in primarily moral terms. Through their initial act of disobedience Adam and Eve fell under the curse of original sin, which has been passed down to the entire human race. The main point of contrast for our purposes is that, for Augustine, the most important result of the fall was moral. Men are now under the control of evil impulses and passions. Consider the following passage:

…in the punishment of that sin the retribution for disobedience is simply disobedience itself. For man’s wretchedness is nothing but his own disobedience to himself, so that because he would not do what he could, he now wills to do what he cannot. For in paradise, before his sin, man could not, it is true, do everything; but he could do whatever he wished, just because he did not want to do whatever he could not do....For who can list all the multitude of things that is, while his very mind and even his lower element, his flesh, do not submit to his will?[[16]](#endnote-16)

Nor was this moral conception of the fall unique to Catholic thought. The reformer John Calvin similarly understood the effects of the fall in moral terms:

Original sin, therefore, seems to be a hereditary depravity and corruption of our nature, diffused into all the parts of the soul, which first makes us liable to God’s wrath, then also brings forth in us those works which Scripture calls “works of the flesh” [Gal. 5:19]. And that is properly what Paul often calls sin.[[17]](#endnote-17)

The conception of the fall accepted by the western church, against which Bacon was writing, was that it introduced widespread *moral* corruption. As a result of Adam and Eve’s disobedience, men became unavoidably sinful and hence subject to divine wrath and punishment. To the extent that this implied a loss of empire over nature, it was secondary to the moral calamity. Bacon’s explanation of the fall amounts to a reversal of these emphases. He suggests that the primary effect of the fall was a transformation of the laws of nature that rendered natural phenomena beyond human control. To the extent that there was a change in human nature, the most important effect was to affect man’s ability to control nature, not primarily his impulses and passions. According to Bacon, the human situation sees men subject to a capricious and untameable nature, not necessarily a corrupted will. I do not deny that Bacon imputed a moral consequence to the fall as well, referring as he does to man’s loss of innocence.[[18]](#endnote-18) However, the lesser attention paid to the moral consequences of the fall, as well as the fact that he typically only discusses it *after* explaining its effects on mankind’s ability to control nature, indicate that the latter is the more significant outcome.

This deeper investigation of Bacon’s theory of the fall corroborates and illuminates the way he uses it to frame his project in *The Great Instauration*. The laws of nature have been corrupted in such a way that our natural right over nature is no longer possible. He is not only lamenting non-human nature’s inherent patterns of behavior, but men’s natural inclinations and modes of relating to the world. A prominent theme in *The New Organon* is the uselessness of previous scientific approaches. Bacon traces these to human nature, which, in light of his confession of faith, we can think of as following the laws of behavior that have been corrupted by the fall.

Bacon traces the causes of error to four “idols:” those of the tribe, cave, marketplace, and theatre.[[19]](#endnote-19) Idols of the tribe are the elements of human nature and intellect that impede the mind’s access to truth. The mind is not a passive recipient of truth but allows its tendencies and preferences to corrupt discovery. Some examples of this natural tendency are the mind’s inability to be content with uncaused brute facts, its desire to impose order and regularity on everything it observes, and to impose human purposes on nature.[[20]](#endnote-20) In short, it is human nature for men to see what they want to see, and thus the unaided intellect is not a reliable guide to truth.

These tendencies are common to men and universal in their effects. Idols of the cave, by

contrast, are those particular influences on each individual that stand in the way of an accurate

understanding of nature. Some people are affected by education, upbringing, or chance events[[21]](#endnote-21)

so as to develop a taste for either novelty or tradition, logic or observation, or become attuned to either differences or similarities. The susceptibility to be carried away by particular effects is only made possible by the nature common to all men, so the idols of the cave should be understood as *particular* effects of the *universal* idols of the tribe.

The idols of the marketplace[[22]](#endnote-22) are the results of communication and life together,

especially language. Words, which are the primary means of understanding nature, can never

accurately reflect it and thus have a tendency to lead us astray. Harmful words are those that refer to things that do not exist or misrepresent the nature of things. “First mover” is given as an example of the first kind, and “wet” as an example of the second.[[23]](#endnote-23)

The fourth set of idols, those of the theatre, explicitly refers to mistaken philosophies and rules of proof, but a careful look shows that these philosophies are effects of the first three idols. Our desire for neat and orderly systems, our individual preferences and inclinations, and the vagaries of language result in poor abstractions from nature under the guise of systematic philosophies. A primary target here is Aristotle, who is accused of making up his mind before conducting experiments, and using them as post hoc justifications of his dialectical conclusions.

Bacon admits that Aristotle’s intellectual powers surpass those of everyone else, but without a proper method to mitigate these tendencies, Aristotle’s entire undertaking was hopeless.

Bacon’s critique of the idols is important to the argument of this chapter for two reasons. It points *towards* important elements of his inductive method, which will be discussed below, but it does not only do that. It also points *back* towards the fall. As a result of the fall, human and non-human nature became subject to different natural laws. If we take seriously Bacon’s attribution of the name “nature” to the laws governing the behavior of natural objects, we can say that the very “natures” of things changed. Human nature – i.e. the way humans behave *naturally* – has been corrupted by the fall in important ways that render men unable to exercise their right over the rest of creation. His doctrine of the idols can therefore be read as his account of what this looks like in the actual practice of investigating nature. As we will see below, in *The New Organon*’s account of all hitherto scientific practice it is akin to blind wanderings that occasionally happen upon a truth or a useful discovery. It is not due to the skill or method of the inquirers, but dumb luck.

**Baconian Method as a Labour-Saving Device**

The image of blind wanderings is not the only one Bacon uses to highlight the difference between his method and previous modes of natural inquiry. In the preface to the New Organon he describes the futility of even the strongest men attempting to move an impossibly heavy obelisk. Without the proper tools it will not budge; indeed an observer would regard the men’s attempt to move the weight as lunacy. It is not a matter of the strength (at least within the limitations of the human body) or number of men. The obelisk will not be moved unless tools or mechanical devices are devised that can channel and multiply human strength in the proper ways and towards the desired end. *Tools*, not *strength*, will allow men to accomplish the task. In so many words, this is Bacon’s vision for how his scientific method will unlock the hidden secrets of nature. Due to the fall’s corruption of human and non-human nature, men cannot sufficiently know the inner workings of nature to exercise their right over it. What is needed is a tool to channel their energies and prevent them from falling subject to the four idols. This section will briefly describe Bacon’s method before turning to an analysis of some of the images by which he articulates its importance.

A reinterpretation of nature was required before Bacon’s scientific and socio-political goals could be accomplished. We must therefore highlight some of the more important points in Bacon’s ontology of nature in order to see how his scientific method was designed to facilitate mastery.

We can best grasp the logic of Bacon’s ontology by beginning with his statement of “the task and purpose of human Power,” which is “to generate and superinduce on a given body a new nature or new natures.”[[24]](#endnote-24) *The New Organon* reinterprets nature as a collection of bodies that behave and take on attributes in accordance with laws of nature. These laws, once understood, can be harnessed to bring about desired effects. It should be stressed that it is not particularly important for Bacon *why* the laws of nature are what they are or *how* a particular law brings about a certain effect; the important thing to understand is simply *that* a certain cause has the effects that it does.

In addition to speaking of nature as the realm over which man must exercise his right of dominion, Bacon speaks of simple and compound *natures*. Simple natures are qualities or attributes, like colour, texture, and solidity. Compound natures are substances themselves, understood by Bacon as combinations of simple natures. The element gold, for example, is a compound nature consisting of the simple natures “tawny-coloured,” “heavy with a certain weight,” “not volatile,” and so on.[[25]](#endnote-25) The implication here is that a thing is nothing but a collection of attributes. Compound natures are brought together by the various laws of act – Bacon’s term for laws of behavior – that create the desired individual simple natures. It follows that knowing the laws of act allows one to create any new compound nature. Bacon calls this his first axiom of the transformation of bodies.

His second axiom “penetrat[es] into the secret recesses of things,” to quote Carolyn Merchant.[[26]](#endnote-26) Nature consists of simple and compound natures, both of which are eminently observable, but also of what Bacon calls latent processes and structures. Beneath the physical attributes that we perceive are hidden motions of unobservable elementary particles, of which the simple natures are merely epiphenomenal. Rather than deciphering the laws of act that correlate with given simple natures, Bacon’s second axiom attempts to understand the workings of these elementary particles themselves, specifically the way in which they generate simple natures, with an eye to potential knowledge of how to generate multiple simple natures at once. This axiom would create gold not by imposing its constituent simple natures on a given body, but would learn the process by which nature herself generates gold out of its elementary substances – that is, the specific molecular transformations bodies undergo to become gold. Bacon’s approach takes from both axioms, which suggests that they are ideal types or heuristic devices meant to demonstrate what is at stake, not either/or approaches to the mastery of nature. The relevant implications for our purposes are that Bacon conceives of nature as a series of attribute-bearing objects. The goal he hopes his method will achieve is to allow men to understand either how to impose the desired simple natures upon objects of their choosing (first axiom) or how to replicate the latent processes by which nature herself produces compound natures (second axiom).

Bacon’s inductive method is crafted to suit the goal of human power, quoted above as the ability “to generate and superinduce on a given body a new nature or new natures.”[[27]](#endnote-27) That is, it is not designed to understand the logic connecting various causes and effects, or how all things work together to create a well-order cosmos, but only to generate the knowledge required to make nature do what men want it to do. The preceding discussion reveals that this is accomplished by the knowledge of the causes of simple natures and the unobservable latent structures. He seeks this knowledge by a rigorous enumeration of instances of the presence or absence of simple natures. The goal is to find the necessary and sufficient causes of each, and to eliminate spurious causes. Bacon demonstrates its use by meticulously enumerating every known natural occurring instance of heat; this is called the “table of existence and presence.”[[28]](#endnote-28) His next step is to enumerate a list of instances that are similar to these but do not produce heat; this is the “table of divergence, or of closely related absences.”[[29]](#endnote-29) Whereas the table of existence and presence includes the *sun’s* rays, the second table notes – incorrectly, as is now known – the fact that the *moon’s* rays do not provide heat. This narrows down the source of heat by indicating that not all rays of light from heavenly bodies are hot.

The third table – the “table of degrees”[[30]](#endnote-30) – records instances in which the nature is present either potentially or to a certain degree. Bacon’s reason for enumerating these instances is that “a nature is not accepted as a true form [i.e. cause] unless it always decreases when the nature itself decreases, and likewise always increases when the nature itself increases.”[[31]](#endnote-31) For example, he distinguishes between the extreme heat of fires and the mild warmth of living creatures. Enumerating greater and lesser degrees of a given nature provides even greater specificity in correlating it with prior causes. These three tables constitute the first stage of Bacon’s method, the “presentation of instances to the intellect.”[[32]](#endnote-32) They indicate that he is looking for things, events, or conditions that are perfectly correlated with heat. The three tables together enumerate the instances of heat, the closely related absences of heat, and conditions of greater and lesser heat.

The next task is to “exclude” all natures or instances that do not correlate with the nature under investigation. This exclusion, or elimination, of all spurious causes is the basis of Stephen Gaukroger’s term “eliminative induction.”[[33]](#endnote-33) Because the goal is exact correlation, natures that increase when the given nature decreases, or vice versa, are to be excluded. For the effect *heat*, he rejects natures such as heavenly nature, light, texture, and rarity, since there is at least one falsifying instance of heat being present when each of these is not.

The goal, as we have seen, is knowledge of laws of act or behavior. Bacon is here inferring causality from perfect correlation, and at one point he claims that a single falsifying instance is enough to disprove a causal law.[[34]](#endnote-34) Precise knowledge of each and every instance that has a correlative relationship with a given nature is as good as knowledge of the causes of that nature. Viewed from within the goal of manipulating natural processes, perfect correlation is all that is necessary.

To connect this lengthy discussion of his scientific method to the argument of this chapter, I will briefly consider some of the images through which Bacon depicts his method. Recalling the prior discussion of the fall and the four idols, the method of eliminative induction was explicitly designed to make up for man’s natural (more accurately, we could say, post-fall) inability to adequately understand nature’s inner workings. The specific ways in which it makes up for this inability is presented in the following ways.

At many points he refers to the method as an aid to the senses: “Neither the bare hand nor the unaided intellect has much power; the work is done by tools and assistance.”[[35]](#endnote-35) This means at least two things. First, knowledge of unobservable latent structures cannot be gained by unaided observation alone, but is best attained by making nature undergo “the trials and vexations of art.”[[36]](#endnote-36) It is only by putting nature in certain positions and subjecting it to particular pressures that can we exact the kind of knowledge of it that can be made useful. Second, the method of strictly recording all presences and absences assists the intellect in forming proper conclusions from what is observed and recorded. We can put this another way by saying that Bacon’s method provides assistance to the understanding by *regulating* it.[[37]](#endnote-37)

It regulates by imposing harsh rules. That is, even though his method will liberate mankind by opening up new possibilities for innovation and thereby unleashing human potential, it does this by imposing strict constraints on what is inferred from what we observe. He makes this point with an oft-repeated image of the scientist as a blind wanderer, collecting observations as they suit his fancy but lacking an orderly schema or set of rules to guide him towards useful observations.[[38]](#endnote-38) Such a person may chance upon a true or useful discovery, but an organized plan of regulating and tabulating observations is much more likely to produce reliable knowledge of the laws of act.[[39]](#endnote-39)

Perhaps the most memorable piece of imagery to this effect is Bacon’s statement that “we do not need to give men’s understanding wings, but rather lead and weights, to check every leap and flight.”[[40]](#endnote-40) As we recall from the four idols, a natural inclination is to immediately jump from a few observations to metaphysical flights of fancy like innate purposes and forms. Bacon’s method, by contrast, forces the scientist to gather more observations, and indeed use those observations to produce further research questions that require their own observations, and so on. The method is specifically designed to encourage the scientist to gather observations in an orderly manner and to avoid large inferences from a small dataset.

A similar way of making the same point is Bacon’s comparison of his method to a road. The imagery of lead and weights is used to highlight the superiority of Bacon’s method to Aristotle’s method of natural inquiry; the road imagery serves the rhetorical purpose of downplaying Bacon’s claim to intellectual superiority. His method is a particular road, as was Aristotle’s; moreover, one’s ability to reach the destination is more a function of the road taken than the skill of the traveller. In the preface to *The New Organon*, Bacon writes that “if we maintained that we achieve better results than the ancients while following the same road as they, we should not by any skill with words be able to avoid setting up a comparison or contest in intellectual capacity or excellence.”[[41]](#endnote-41) The very title of *The New Organon* – that is, the replacement of Aristotle’s organon – signals that Bacon is in fact setting up a contest between himself and the ancients. It is not a contest of *intelligence*, though, but of *tools or instruments*. The main selling point of Bacon’s method is that, like any tool or labour-saving device, it can be put to good use by almost anyone regardless of intelligence. Bacon thus makes the success of the modern scientific enterprise hang on the method, or road, used, not the capacity of individual scientists.

Aphorism 1.82, which opens by presenting the method as a road better suited to lead men into truth and utility, introduces another image of the method as lamp. The illumination metaphor is easy enough to grasp, though the combination of conceptualizing his method as both road and lamp is a unique mixing of metaphors: as good as the road is, the way must still be lit. The specific way in which following his method is akin to a lamp hearkens back to his gloss on the order of creation: God first created light and brought order to the universe, and only then created tangible and useful things. The highly regularized way in which his method constrains the intellect – with “lead and weights,” as it were – produces many insights which have no direct practical use but serve to guide future researchers towards experiments that *will* produce useful knowledge.

The consequences of faithfully following his method are summed up in the opening parable of many strong men failing to move a heavy obelisk. Bacon’s method is akin to a device that can move heavy objects. It is worth dwelling on this metaphor, as it highlights the relationship between human intellectual capacity, his scientific method, and its character as a labour-saving device. Bacon does not in this example describe the hypothetical “tools or machines” (p. 29) he imagines moving the obelisk, but it is not out of the question that something like pulleys or wedges would fit the bill.[[42]](#endnote-42) Common to simple machines like these is the concept of mechanical advantage, or the amplification of force. By the effective use of gear ratios or similar means, a normal amount of force can move an immense weight a small distance or a small weight a great distance. One can imagine a team of men easily moving the obelisk with a well-designed pulley or ramp system. This is the orienting depiction of Bacon’s method of eliminative induction. Understanding the latent structures and processes of nature is an immense task, impossible for the unaided intellect alone – akin to moving an obelisk by hand. However, by forcing scientists to remain within a carefully prescribed series of experiments, tabulations, and observations, slow and steady progress may be made towards unleashing the full power of nature in order to remove the burden of work brought on by the fall.

**Conclusion**

This chapter has attempted to deepen our understanding of Bacon’s project of technological mastery. It takes as its starting point the common view that Bacon was instrumental in laying the groundwork for modern technological science as we know it. It does not address the dispute over whether modern science has produced more harm than good, important as that question is.[[43]](#endnote-43) Rather, it has sought to shed light on the importance of a theme that never received a systematic discussion in any of Bacon’s scientific works yet remains impossible for the careful reader to ignore. The biblical themes of creation, fall, and the hope for Sabbath rest are interspersed throughout Bacon’s corpus, such that when taken seriously new light is shed on his project. Bacon depicts a world over which men have the right to rule but which nevertheless resists their best efforts. His novel scientific method is therefore presented as the means whereby God’s original plan for creation can be restored and men can rest from their labour. Adam and Eve’s sinful desire for moral knowledge drastically – and tragically – increased the amount of work required to conquer nature; Bacon’s charitable desire for scientific knowledge can reduce the burden of work and allow the human race to enter into God’s promised Sabbath rest. That the curse of the fall is the main problem to overcome is borne out by the final sentences of *The New Organon*, which in closing I quote at length:

For by the Fall man declined from the state of innocence and from his kingdom over the creatures. Both things can be repaired even in this life to some extent, the former by religion and faith, the latter by the arts and sciences. For the Curse did not make the creation an utter and irrevocable outlaw. In virtue of the sentence ‘In the sweat of thy face shalt thou eat bread’, man, by manifold labours (and not by disputations, certainly, or by useless magical ceremonies), compels the creation, in time and in part, to provide him with bread, that is, to serve the purposes of human life.[[44]](#endnote-44)

1. Stephen Gaukroger, *Francis Bacon and the Transformation of Early-Modern Philosophy* (Cambridge: Cambridge University Press, 2001); John Henry, *Knowledge is Power: How Magic, the Government and an Apocalyptic Vision inspired Francis Bacon to create Modern Science* (Cambridge: Icon Books, 2003). [↑](#endnote-ref-1)
2. See, for example, F.H. Anderson, *The Philosophy of Francis Bacon* (Chicago: University of Chicago Press, 1948), quoted in Benjamin Farrington, *The Philosophy of Francis Bacon* (Chicago: University of Chicago Press, 1964), 16. [↑](#endnote-ref-2)
3. Straussian commentaries are manifold, but the following are emblematic of this approach: Richard Kennington, *On Modern Origins: Essays on Early Modern Philosophy*, Edited by Pamela Krauss and Frank Hunt (Lanham: Lexington Books, 2004), Laurence Lampert, *Nietzsche and Modern Times: A Study of Bacon, Descartes, and Nietzsche* (New Haven: Yale University Press, 1993), and Robert K. Faulkner, *Francis Bacon and the Project of Progress* (Lanham: Rowman & Littlefield Publishers, 1993). [↑](#endnote-ref-3)
4. Faulkner, *Francis Bacon*, 226. [↑](#endnote-ref-4)
5. Stephen A. McKnight, *The Religious Foundations of Francis Bacon’s Thought* (Columbia: University of Missouri Press, 2006). See also Kennington, *On Modern Origins*, 1-14, for an interpretation of Bacon’s scientific project that pays attention to his use of the bible. [↑](#endnote-ref-5)
6. Howard B. White, *Peace Among the Willows: The Political Philosophy of Francis Bacon* (The Hague: Martinus Nijhoff, 1968); Jerry Weinberger, *Science, Faith, and Politics: Francis Bacon and the Utopian Roots of the Modern Age* (Ithica: Cornell University Press, 1985). [↑](#endnote-ref-6)
7. Francis Bacon, *The New Organon*, Edited by Lisa Jardine and Michael Silverthorne (Cambridge: Cambridge University Press 2000 [1620]), 24. [↑](#endnote-ref-7)
8. Ibid. [↑](#endnote-ref-8)
9. Ibid. [↑](#endnote-ref-9)
10. Saint Augustine, *Confessions*, Translated by Henry Chadwick (Oxford: Oxford University Press 1998 [400]), 8.51; Saint Augustine, *The City of God*, Translated by Henry Bettenson (London: Penguin Books 2003 [427]), 1091. [↑](#endnote-ref-10)
11. Bacon, *The New Organon*, 12. [↑](#endnote-ref-11)
12. See also in Bacon’s *Advancement of Learning* [1605]: “The first acts which man performed in paradise [that is, before the fall] consisted of the two summary parts of knowledge; the view of creatures, and the imposition of names.” Francis Bacon, *The Major Works*, Edited by Brian Vickers (Oxford: Oxford University Press 2002), 149-150. [↑](#endnote-ref-12)
13. Bacon, *The New Organon*, 24. [↑](#endnote-ref-13)
14. Brian Vickers’ editorial note to “A Confession of Faith” in Francis Bacon, *The Major Works*, Edited by Brian Vickers (Oxford: Oxford University Press 2002), 560. [↑](#endnote-ref-14)
15. Bacon, *The Major Works*, 108. It is worth noting here that this depiction of the world as being composed of material objects acting according to external laws of nature is significantly different than the classical teleological view. This component of Bacon’s thought is beyond the scope of this chapter but is nevertheless worth drawing attention to. [↑](#endnote-ref-15)
16. Saint Augustine, *The City of God*, 575. Obviously this is not a complete account of Augustine’s theory of original sin. For more, the reader is referred to *City of God* books XIII-XIV, *Confessions* Book VIII. ix-xi, and William E. Mann, “Augustine on Evil and Original Sin,” in *The Cambridge Companion to Augustine*, Edited by Eleonore Stump and Norman Kretzmann. (Cambridge: Cambridge University Press 2001), 40-48. [↑](#endnote-ref-16)
17. John Calvin, *Institutes of the Christian Religion, volume one*, Translated by Ford Lewis Battles (Louisville: Westminster John Knox Press 2006 [1559]), 251. [↑](#endnote-ref-17)
18. McKnight regular describes Bacon’s project as concerning “the relation of humanity to nature and to God.” McKnight, *Religious Foundations*, 46-47. This dual emphasis on man’s reconciliation to nature (through technology) and God (through Christian salvation) is a repeated theme in McKnight’s work. [↑](#endnote-ref-18)
19. Bacon, *The New Organon* 1.29-30. All references to *The New Organon* itself, as opposed to the various introductory materials included with it, are to the book and aphorism number. [↑](#endnote-ref-19)
20. Bacon, *The New Organon*, 1.45-50. [↑](#endnote-ref-20)
21. Bacon, *The New Organon* 1.53. [↑](#endnote-ref-21)
22. Jardine and Silverthorne point out in a textual note that “marketplace,” despite being the traditional translation,

    obscures the meaning. A more literal term would be “forum” or “townsquare”: “the place where men meet and talk

    and reinforce each others’ ‘idols’.” Bacon, *The New Organon*, 48n20. [↑](#endnote-ref-22)
23. Bacon, *The New Organon*, 1.60. [↑](#endnote-ref-23)
24. Bacon, *The New Organon*, 2.1. [↑](#endnote-ref-24)
25. Bacon, *The New Organon*, 2.5. [↑](#endnote-ref-25)
26. Carolyn Merchant, *Autonomous Nature: Problems of Prediction and Control from Ancient Times to the Scientific Revolution* (New York: Routledge 2015), 91. [↑](#endnote-ref-26)
27. Bacon, *The New Organon*, 2.1. [↑](#endnote-ref-27)
28. Bacon, *The New Organon*, 2.11. [↑](#endnote-ref-28)
29. Bacon, *The New Organon*, 2.12. [↑](#endnote-ref-29)
30. Bacon, *The New Organon*, 2.13. [↑](#endnote-ref-30)
31. Bacon, *The New Organon*, 2.13. [↑](#endnote-ref-31)
32. Bacon, *The New Organon*, 2.15. [↑](#endnote-ref-32)
33. Gaukroger, *Francis Bacon*, 138. [↑](#endnote-ref-33)
34. Bacon, *The New Organon*, 2.18. [↑](#endnote-ref-34)
35. Bacon, *The New Organon*, 1.2; see also 1.21, 1.67, 1.126. [↑](#endnote-ref-35)
36. Bacon, as quoted in Merchant, *Autonomous Nature*, 81. [↑](#endnote-ref-36)
37. Bacon, *The New Organon*, 1.126. [↑](#endnote-ref-37)
38. Bacon, *The New Organon*, 1.82. [↑](#endnote-ref-38)
39. Bacon, *The New Organon*, 1.47, 1.70, 1.73, 1.108, 1.126. [↑](#endnote-ref-39)
40. Bacon, *The New Organon*, 1.104. [↑](#endnote-ref-40)
41. Bacon, *The New Organon*, p. 29; see also 1.61, 1.76, 1.82. [↑](#endnote-ref-41)
42. Bacon, *The New Organon*, p. 29. [↑](#endnote-ref-42)
43. This itself would require a lengthy treatment, beginning with the effects of particular technological devices, leading into a treating of the overall ecological effect of modern technology, and culminating in a reflection on the ontological transformations ushered in by technological thinking. The reader is directed to the following sources: Carolyn Merchant, *Autonomous Nature*; C.S. Lewis, *The Abolition of Man* (New York: Simon & Schuster 1996 [1994]); Martin Heidegger, *The Question Concerning Technology and other Essays*, Translated by William Lovitt (New York: Harper 1977); George Grant, *English-Speaking Justice* (Toronto: House of Anansi Press 1974) & *Technology and Justice* (Concord: House of Anansi Press 1986). [↑](#endnote-ref-43)
44. Bacon, *The New Organon*, 2.52. [↑](#endnote-ref-44)