

CHAPTER ONE

The Origins of Modernity and the Technological Society

DAVID J. HAWKIN

“The past is a foreign country; they do things differently there.” So begins L. P. Hartley’s novel *The Go-Between*.¹ In this epigrammatic statement Hartley summarizes the thoughts and feelings of many in the modern world, for contemporary society is very different from that which has gone before. As Jacques Ellul has said, “We are conditioned by something new: technological civilization.”² Technology has altered everything: cars have changed transportation; computers have changed communication; dishwashers and vacuum cleaners have changed work; televisions and video games have changed leisure; powerful medical drugs have changed health care. The evidence of dramatic change through technology is there for all to see. A world full of such labor-saving devices, leisure activities, and life-saving drugs and machines, if described to our grandparents, would probably have sounded utopian to them. Yet there are many who consider the modern world very dystopian. Robert Pippin, for example, avers that “Modernity promised a culture of unintimidated, curious, rational, self-reliant individuals, and instead it produced . . . a herd society, a race of anxious, timid, conforming sheep, and a culture of utter banality.”³ Many would be less grandiloquent but make a similar point by pointing specifically to increasing global conflict, an escalating ecological crisis, and an AIDS epidemic in the Third World of catastrophic proportions as examples of how, despite the many advantages the modern world has given us, we are unable to solve some of our most basic human problems.

Why is this? There are those who argue that we need to look at the origins of modernity and the technological society if we are to fully understand

the dilemma in which we find ourselves.⁴ When we do so, we see clearly that there has been a discontinuity in the Western tradition, and that the nature of this discontinuity explains much of the character of the modern world. We will accordingly turn to an examination of the origins of modernity to see how this came about.

In a well-known article, Lynn White claimed that the origins of the modern worldview, in which technological mastery is the dominant feature, can be traced back to the influence of medieval Christianity. Many of the unfortunate consequences of the modern worldview can thus be laid at the feet of Christianity, which bears a “huge burden of guilt,” for example, for the ecological crisis.⁵ White made two essential points in support of his argument. First, he claimed that Western Christianity came to emphasize more and more that salvation was to be found through right conduct. Gradually, therefore, the classical ideal in which contemplation was superior to action was abandoned, and action was elevated above contemplation. This was coupled, he further argued, with a fundamental change in the perception of nature. This change was generated by monks, who, through their investigations of the workings of nature, laid the groundwork for an explosion in knowledge of the natural world. The most prominent of these monks was Roger Bacon. The rise of a voluntarist Christianity, combined with a dramatic increase in knowledge about the way the world works, laid the foundation for the conquest of nature and ultimately led to its exploitation.

White is to be commended for his insight, for he has latched on to two of the most important developments of the medieval period. But he overextends his argument when he singles out Roger Bacon and claims that he helped to bring about an exploitative attitude to nature. Roger Bacon (ca. 1214–1292 C.E.) is one of the great medieval scholars, renowned for his works on nature.⁶ But while Roger Bacon may have investigated the workings of nature, he never suggested that nature should be exploited. Nature showed us the mind of God: to understand how it worked was to more fully appreciate how God worked. And while nature was there for human use, Roger Bacon at no time suggested that it would be appropriate to manipulate nature in a spirit of mastery and domination.

The problem with White’s argument is that, like the curate in the boardinghouse, he has chosen the wrong Bacon. Some three centuries later Francis Bacon (1561–1626 C.E.) did what Roger Bacon never did—urged humans to conquer nature “for the relief of man’s estate.”⁷ Nature must not be “a courtesan for pleasure” but a “spouse, for generation, fruit and comfort.”⁸ Similarly, White has exaggerated the extent to which contemplation and action were divorced in the medieval period. It is again Francis Bacon who finally severs the two and who attacks in a most uncompromising way

the life of contemplation, which he regarded as concerned with pointless abstractions or, as he put it, “a whirling round about.”⁹

Francis Bacon is, in fact, a key figure in the development of modernity. Although much of what he said had been said before, the way in which Bacon articulated his philosophy was quite novel and explicit. Bacon makes very clear two things: nature is for human use, and we have a duty to use it. Bacon saw himself as a pioneer and took to task those of previous generations because they had not used knowledge of the natural world for practical purposes. In a well-known passage he says:

Being convinced that the human intellect makes its own difficulties, not using the true helps which are at man’s disposal soberly and judiciously; whence follows manifold ignorance of things, and by reason of that ignorance mischiefs innumerable; he thought all trial should be made, whether that commerce between the mind of man and the nature of things, which is more precious than anything on earth, or at least than anything that is of the earth, might by any means be restored to its perfect and original condition, or if that may not be, yet reduced to a better condition than that in which it now is.¹⁰

Here Bacon lays out his agenda clearly: the “commerce between the mind of man and the nature of things” must be facilitated so that the earth may be “restored to its original and perfect condition.” Bacon is a utopian. He believes that humans can, by their own efforts, improve their “estate,” their lot in this world. But what is needed to bring this about is to jettison the baggage that has kept us back so that we have so far made only “contemptible progress.” Humans in the past had been too busy puzzling over pointless abstractions. They needed to understand that their true calling was to reestablish control over a perfectible nature. In his major writings, *The Advancement of Learning*, *Novum Organum*, and *The New Atlantis*, Bacon recounts how this is to be done.

A basic premise of Bacon’s is that the manipulation of nature could only take place when humans realized the importance of experiments and the practical application of knowledge. Thus, he rejected “the opinion, or inveterate conceit, which is both vainglorious and prejudicial, namely, that the dignity of the human mind is lowered by long and frequent intercourse with experiments and particulars, which are the objects of sense, confined to matter; especially since such matters generally require labour and investigation.”¹¹

Thus, for Bacon knowledge is practical; but even more than that, human knowledge and human power are identical (*scientia et potentia*

humana in idem coincidunt). In the preface to *The Great Instauration* he says that the “true and lawful goal of the sciences” is to endow human life with “new discoveries and powers.” He describes his ideal state in *New Atlantis* as a place where the new science results in lots of practical achievements, from the discovery of new chemical compounds and the artificial change of climate to the breeding of new species of plants and animals. In *The Advancement of Learning* Bacon describes how to set up an institution for inventors. It sounds remarkably like the Massachusetts Institute of Technology. Bacon envisages the government providing inventors with allowances for their experiments and for traveling. He also believes that there should be scholarly journals and international associations. He is, in fact, very modern: he conceives of the control and domination of nature as organized and controlled by an elite and supposedly our best weapon in the quest to improve the human condition.

There is much in the thought of Francis Bacon to dwell upon and analyze if we are to fully understand what it means to live in the age of modernity, for his writings exude its very essence. But there are two points in particular that are worth focusing on: what Bacon says about nature and what he says about contemplation.

The basic assumption in Bacon’s thinking is that nature is impersonal and inanimate and can—and indeed should—be dealt with in an objective manner. He says:

For as all works do shew forth the power and skill of the workman, and not his image; so it is of the works of God; which do shew the omnipotency and wisdom of the maker, but not his image; and therefore therein the heathen opinion differeth from the sacred truth; for they supposed the world to be the image of God, and man to be an extract or compendious image of the world; but the Scriptures never vouchsafe to attribute to the world that honour, as to be the image of God, but only *the work of his hands*; neither do they speak of any other image of God, but man.¹²

Thus, for Bacon nature has to be understood and studied as an artifact, as the work of God’s hands, not as something that has purpose and worth of its own. There is no impediment, therefore, to humans putting it to their use. The language that Bacon employs in describing how humans should use nature is very revealing. He speaks of “putting nature to the test,” for example, which is a phrase associated with torture during the Inquisition, and talks of the need to “conquer,” “woo,” “unveil,” and “disrobe” nature in order to “force” her to give up her secrets. This graphic language reflects a culture of control in which nature becomes a “virgin” awaiting domina-

tion and exploitation. Carolyn Merchant has argued that the uncritical acceptance of this Baconian language has had disastrous consequences for those of us in the modern world. The forceful taking of nature's "virgin" resources and the emphasis on domination and conquest, such evident traits in the modern world, find their origins in Bacon.¹³

Bacon draws on the Bible to support his view that nature is an artifact. Nature is a creation of God and is in no way divine or suffused with the divine. It is matter, "stuff," an inanimate resource awaiting human use. Bacon gives the impression that he has derived this view solely from the Bible, but its origins are more complex than that. Bacon could not have found fertile soil for his argument that we must change our attitude toward nature if there had not been other fundamental changes in worldview as well. In particular, a change in the attitude toward nature could not take place unless there was first a change in how one understood the contemplative life. Bacon knows this well, and that is why he attacks Aristotle and the contemplative life.

Bacon criticized Aristotle for preferring the contemplative life to the life of action. He said that the common good "decides the question touching the preferment of the contemplative or active life, and decides it against Aristotle."¹⁴ As he made Aristotle the object of his attack, Bacon managed to obscure the fact that he is attacking his own Christian tradition, which also elevated contemplation over action. As George Ovitt's *The Restoration of Perfection*¹⁵ has shown, the Middle Ages remained true to the classical Christian tradition found in such writers as Origen, Gregory of Nyssa, Cassian, and Augustine, all of whom thought that although the active life is more productive than the contemplative, the contemplative is better and greater than the active.¹⁶ Bacon is thus doing something very significant when he attacks the contemplative life and stresses the value of the active life. He is repudiating a tradition in which the life of action received its meaning from the life of contemplation. "All knowledge," Bacon asseverated, is to be referred to use and action, to "the relief of man's estate."¹⁷ He thus makes *the life of action intrinsically worthwhile for its own sake* and paves the way for a view of the world in which efficiency, pragmatism, and utility are the key virtues. In short, this was a vital step in laying the ground work for the view of the world that has led to our modern technological worldview.

Bacon's influence on later practitioners of modernity has been enormous. In his thought we have nothing less than a repudiation of a way of thinking about nature and contemplation that had endured for a thousand years in the Christian tradition. But Bacon could not have undermined this complex superstructure of Christian thought all by himself: the edifice was already crumbling and all it needed was a hammer blow to bring it all tumbling down. It will be instructive now to focus more intently on how ideas

about nature and contemplation changed before and during Bacon's time. By doing so we will understand better the nature of Bacon's achievement and see more clearly our own position in the modern world.

Nature

It is important to consider again how Bacon arrived at his conception of nature. He claimed that the idea of nature as an artifact, as the handiwork of God, was derived from the biblical doctrine of creation. God was transcendent; the world was his creation. Nature and God were thus quite separate. But more than that, so conceived nature was an object and thus devoid of will; it was in no sense a subject. Humans thus became distinguished from nature by having will, a will that they could impose on nature. In grounding his idea of nature exclusively in what the Bible says, Bacon was implying that the true understanding of nature had been eclipsed in the Christian tradition by the influence of Greek thought. Bacon's argument carried the day, and the modern world is a testament to this. Bacon was, however, so successful in propagating his views because they had some antecedents; the time had to be right. What had brought about this change in attitude toward nature?

Christianity is a syncretistic phenomenon. More particularly, it is a synthesis of neo-Platonic thought and Jewish biblical religion. These two streams of thought had radically different approaches to understanding reality. Neo-Platonic thought, derived from the works of Plato, focused on the contrast between the eternal and the temporal. The central question was how to reconcile eternal realities (the Forms or Ideas) with their spatiotemporal counterparts. Plato himself sometimes spoke as if these spatiotemporal realities *copied* eternal Forms, and at other times he seemed to suggest that spatiotemporal realities *participated* in the eternal and were expressions of it. But the fundamental point was that for Plato and his followers the good life for the human consisted in conforming to the way things really are. Thus, cosmology, the inquiry into the whole of reality, cannot be separated from questions of what is good for humans. The way humans should live is inextricably bound up with the cosmic order. This cosmic order is eternal. What we see as temporal events are but the "moving image of eternity."¹⁸ The spatio-temporal world is, in some sense, an expression of the eternal, and as such, cannot at any time "not be." It cannot have a beginning and it cannot have an end. The world is eternal, necessary, and ordered. Moreover, humans are inextricably bound up in the cosmic order that they can discern through the use of reason. Reason is what links humans to the eternal realities.

At the heart of the Jewish biblical religion, on the other hand, lies the idea of the creation of the world. A transcendent God creates the world. The world had a beginning, that is, it is contingent, and it does not participate in any way in the being of God. So in the Greek view of things the world is necessary and reflects an eternal origin, whereas in the Jewish biblical view it is contingent and has a beginning. In Greek thought the eternity of the world was not merely an assertion of temporal fact, it was a metaphysical claim of great significance. In the *Timaeus*, Plato tells of how the Demiurge creates this world by modeling it on the eternal forms. This implies that there is an intelligibility and order in the world that is itself eternal. In the *Republic*, when Socrates asks, "What is justice?" he was not looking for the list of the acts of a just person. He was looking for a definition that captured the nature of justice and was applicable to justice alone. In other words, Socrates was seeking insight into the essence of things, not into the use of words. The answer Plato gives in *The Republic* is to ground justice in the eternal order. When incorporated into the Christian tradition this "essentialist" view proved normative for a thousand years of Western philosophy.

Thus, as a synthesis of neo-Platonic thought and Jewish biblical religion, early Christianity incorporated into itself two conflicting views of creation. It is a remarkable fact that the Christian tradition was able to hold these two views together in dialectical tension for over a thousand years. But the neo-Platonic view gradually became eclipsed by the Jewish biblical view, which eventually found its secularized expression in the work of Francis Bacon. The turning point came in the Middle Ages. There were many factors involved in the transition from the medieval to the modern. Among them are the rise of the cities that eroded the feudal order and the concurrent rise of national monarchies; the expansion of trade; the dissemination of information by means of the printing press; and the voyages of discovery that widened not only the physical but also the mental horizons of the West.¹⁹ There are two movements of thought, however, that were particularly influential in bringing about an environment of thought in which the ideas of Bacon could flourish. The first important movement was that associated with the nominalists.

The Nominalists

The nominalists of the thirteenth century argued in typical medieval scholastic style that the omnipotence of the transcendent God would be compromised if he were limited by the laws of eternal reason. They did not like the Greek idea that the eternal order itself was governed by reason. This

could imply, by analogy, that God himself was governed by the laws of eternal reason, thus imposing limits on God: he could only act according to these laws. But in the Bible it is revealed that God created the world through his will. For the nominalists this made the will of God paramount. By an act of will God created the world. By an act of will he gave the commandments. The commandments are valid precisely because he willed them, not because they express some eternal Good. Such an argument removes the sanction for moral precepts from the cosmic and eternal order and locates it in the will of God alone.

It was William of Ockham (ca. 1300–1349) who gave a vital and dynamic force to nominalism. A man of powerful and rigorous intellect, he defended Christian revelation while at the same time adhering to empiricism and the logical method. He did so by separating them. The reality of God, given in revelation, was to be separated from the reality of the world, given in sensory experience. God was beyond the senses and could not be known through the senses. Ockham was aware of the thought of Thomas Aquinas (ca. 1225–1274) and disagreed with him in a fundamental way over the limits of reason. Ockham believed that Aquinas did not fully appreciate how limited reason was in its ability to know God. The mind possessed no “divine light” by which it could know God. Only concrete experience could serve as a basis for knowledge, and God was not to be found in such experience. In fact—and this was a vital point—our experience of this world, mediated to us through the senses, gave us only knowledge of concrete particulars, and inferring a separate and independent reality (such as in Platonic thought) from such particulars was mistaken. Ockham not only separates the world of sense experience from God, he also denies that through such experience one can come to know God. God can only be known through revelation. Ockham is repudiating the classical view, rooted in Platonic thought, that one can see in the world a rationality reflective of divine order. It is a very short step from this to the view in which the world has no intrinsic value of its own and is there merely for our use. The nominalist thus prepared the way for the Baconian argument that nature was a mere artifact created by God for our use. But although the nominalists were important in this development, it was the thinkers of the so-called scientific revolution who really created an environment of thought suitable for the Baconian view.

The Scientific Revolution

In 1543 two books appeared that ushered in the scientific revolution: Copernicus' *De Revolutionibus Orbium Coelestium* (*On the Revolutions of*

the Celestial Orbs) and Vesalius' *De Humanis Corporis Fabris* (*On the Fabric of the Human Body*). The fact that these two books appeared in the same year is symbolic of the two sides of the scientific revolution: the macrocosmic and the microcosmic, the abstract and the concrete, the mathematical and the empirical. Yet it was the revolution in thinking brought about by Copernicus' book that had the most far-reaching consequences. Copernicus' book repudiated the Aristotelian worldview in which the earth was at the center of the universe and instead proposed a heliocentric model. The medieval view of the world was thus severely compromised and eventually replaced by a more mechanistic understanding. In this new way of thinking the world was not permeated by the divine; neither did it reflect a divine order. It was impersonal and mechanistic and operated according to laws best described in the language of mathematics, not in the language of theology. This new way of thinking is epitomized in the work of Galileo (1564–1642).

Galileo had become convinced that Copernicus was right as early as 1594. Copernicus had been somewhat circumspect in his conclusions. Galileo was, however, a very different personality. Unlike Copernicus, Galileo saw himself rather as a kind of embodiment of a new way of thinking. He proposed to deal only with efficient causes rather than final causes. Moreover, he saw the world as a mechanism, which could be described in the language of mathematics. As he put it, the Book of Nature was written in the language of mathematics, not in the language of theology. Thus, the mathematical laws operative in nature could be demonstrated empirically or experimentally.

The importance of what Galileo was saying lay not just in proving medieval cosmology wrong, but in the way he set about his proof. Galileo set up a whole new paradigm in place of the old theological one. One could unlock nature's secrets by the use of mathematics and experiments. It was no longer necessary to look at nature through theological spectacles.

Galileo was not, in fact, able to prove Copernicus right until he came into possession of a new invention—the magnifying glass. By lining up a series of lenses Galileo came up with a telescope. And when he turned this telescope to the heavens he found the proof he needed that Copernicus was right and the medieval system (based on the thought of Aristotle) was wrong. He discovered that there were mountains on the moon and spots on the sun. This suggested that the heavenly bodies were of the same substance as earthly bodies. Moreover, Jupiter had moons. If Jupiter possessed moons, then Aristotle's notion of crystalline spheres was wrong. Moreover, as these moons orbited Jupiter they lent more proof to Copernicus's theory, for if not all heavenly bodies had Earth as their center, then it made sense that Earth may not be the center at all.

Galileo published his findings in *Sidereus Nuntius* (*The Message from the Stars*) in 1610. In this book Galileo attacked Aristotelianism and, more significantly, claimed that the Bible could not be taken literally, as it was so obviously contradicted by the Copernican understanding of the world. Galileo went on to argue that God had “written” two books: a Book of Nature and a Book of Scripture. The Book of Nature was the empirical, experiential world in which we live. Through it God revealed himself as the Creator. The world was God’s artifact and it behaved according to the laws he had designed. Humans could discover these laws and thus see how the world worked. The language of the Book of Nature was mathematics, and it was through mathematics that we could understand the workings of the world. The Book of Scripture, however, was God’s revelation through symbol and metaphor. It was open to interpretation and subject to misunderstanding. Thus, it did not give the same account of the world as the Book of Nature because it spoke a different language. But—and this is the crucial point—where the Book of Nature contradicted the Book of Scripture, it was our understanding of the Book of Scripture that had to be revised. What Galileo was implying was extremely significant: he was separating the world of faith from the world of science. This was yet another nail driven into the classical view of the world as a unity, with its concomitant view that political and social realities were rooted in divine and sacred realities. Galileo was proposing a new paradigm to replace theological inquiry: the scientific method. The issues for Galileo’s opponents, then, appeared weighty indeed. Bellarmino, a contemporary of Galileo, saw clearly what the real issue was: Galileo had separated the divine from nature. As he put it:

Rise thou up a little higher, if thou canst, and as thou observest the great splendour of the sun, the beauty of the moon, the number and variety of other luminaries, the wonderful harmony of the heavens and the delightful movement of the stars, consider: what it will be to see God above the heavens, as it were a sun, “Dwelling in the light which no man can approach unto” [1 Tm 6:16]. . . . Thus it will come to pass that the beauty of the heavens will not appear so very great, and the things that are beneath the sky will seem altogether insignificant, indeed almost nothing, and to be considered despicable and worthy of contempt.²⁰

The ultimate clash between Galileo and the Church came as a result of both Galileo’s imprudence and his impudence. In 1632, in his book *Dialogo dei due Massimi Sistemi del Mondo* (*A Dialogue on the Two Chief World Systems*), he presents his case in the form of a dialogue between

three people: Salviati, Sagredo, and Simplicio. It was ostensibly a discussion of the merits of the Copernican system. Salviati (obviously speaking for Galileo himself) was the proponent of the Copernican view; Sagredo was the impartial one who, however, was easily convinced by Salviati of the merits of the Copernican system; and Simplicio (the “simple one”) was the opponent of the Copernican view. Galileo’s propensity for diatribe and invective got the better of him in this piece of work, for he gave Salviati an utterly convincing case and made Simplicio look, as his name implies, quite simpleminded. Galileo’s mistake was to put into the mouth of Simplicio some of the arguments of the then pope, Urban VIII. Urban VIII was, in fact, a friend of Galileo, and they had spent considerable time discussing Copernicus’s views, so Galileo knew the pope’s views very well. For Galileo, to put the pope’s arguments into the mouth of Simplicio and make him look a complete fool was, to say the least, quite impolitic. When Urban VIII was finally acquainted with the contents of the book he was infuriated. Galileo was summoned to Rome to answer charges that he had openly advocated a heliocentric view of the world, which had in 1616 been declared heresy by the Church. Galileo was found guilty and forbidden to teach or write and put under house arrest. He was urged “even with the threat of torture” to retract what he had written. Galileo was an old man by now, and he begged forgiveness on his knees and dutifully said that he was wrong and that the earth did not move.

Galileo was officially confined to his house and not allowed to teach or write. But students still came to him in secret, and he continued to write and had his manuscripts smuggled to the Netherlands, a Protestant country, where he had them published. Thus, he continued to be influential, and when he died in 1642 his ideas lived on. The Scientific Revolution was in full swing, and great thinkers such as Kepler and Newton came along to further the cause of the new way of looking at things.

The full implications of the scientific revolution were perhaps not immediately obvious. It was not just that in the scientific method expounded by Galileo we had a new paradigm for understanding the world. On a deeper level, it gradually became evident that if nature sanctions nothing, then it permits everything. Whatever humans do to it, they do not violate an immanent integrity. In a nature that is contingent, that is accidental, each thing can be other than what it is without being any the less natural. Nature can no longer be seen as participating in an eternal order and providing humans with a normative understanding of how things should be. Moreover, by reducing nature to an object it becomes an impersonal artifact, devoid of will. This leaves us with a worldview in which humans alone have will, and human will thus becomes paramount. It is human will that remakes and shapes the world. Human will no longer has an ontological

grounding: it is thrown back on itself in its quest for meaning and value. Values and meaning are no longer grounded in a cosmic reality or in an eternal order, but are creations of the human will that has no reference point outside itself.

In his justly famous book, *The Legitimacy of the Modern Age*,²¹ Hans Blumenberg concurs with the argument that a precondition of the coming of the modern age was the belief that an eternal order was not reflected in nature. He also argues that the essential feature of modernity is the belief in the legitimacy of human self-assertion, which expresses itself in the will to dominate and manipulate the natural world.²² William of Ockham had made explicit the extreme implications of God's transcendence. This had created a crisis, turning God into a "hidden God" who could not be known through reason. A *Deus Absconditus* implied a "speechless" world that lacked the marks of the Divine Word (cf. Jn 1:1ff.). But this crisis also had a liberating effect. For if the intelligible order of the world can no longer be maintained, then the traditional view that there are limits beyond which human knowledge may not go is also destroyed. Thus, argues Blumenberg, curiosity was released from its constrictive boundaries, and human self-assertion was able to legitimately express itself.

Blumenberg contributes to our understanding of the modern world by explicitly linking the rise of human self-assertion with the corresponding demise of the idea that nature was a worthy object of contemplation. We have already seen how the change in the attitude to nature came about. Now we must turn to how that change was linked to a change in the status of *contemplatio* or contemplation.

Contemplation

The Gospel according to St. Luke (10:38–42) recounts the story of Mary and Martha, two sisters who invited Jesus to their home. Mary sat at Jesus' feet and listened to what he was saying. Martha, however, was distracted by her work and complained to Jesus that Mary should be helping her. But Jesus chided Martha and said that Mary had "chosen the better part" (Lk 10:42).

This story was an important text in early Christianity and medieval times. It was cited by such figures as Origen, Gregory the Great, Cassian, and Augustine in support of the argument that the life of contemplation was superior to the life of action. Dom Cuthbert Butler says: "St Augustine has no hesitation in affirming the superiority of the contemplative life over the active. This judgement he, in common with the rest of theologians, bases in the story of Mary and Martha, which forms the theme of his dis-

courses in various of the *Sermons*.”²³ Gregory the Great, similarly to Augustine, argues that although the active life is more productive than the contemplative, the contemplative is better and greater. The attitude of antiquity in general is perhaps best summed up by Julianus Pomerius: “The active life is the journeying, the contemplative life is the summit.”²⁴

This emphasis on contemplation goes back to the pre-Socratic philosophers. In an often quoted analogy, Pythagoras spoke about those who attended the Games. Some were there to make money by selling and trading. Some were there for the glory that comes from competition. And some were there just to watch. Pythagoras said that those who were merely spectators, who were just there to watch and not to make money or compete, were the ones to be emulated. Pythagoras went on to suggest that by analogy we could see the spectators as similar to those who pursued the contemplative life. Contemplation was the highest form of activity. Another pre-Socratic, Anaxagoras, was asked what he thought was the purpose of his life. He replied that he lived in order to contemplate the heavens and the stars, the sun, and moon. He was clearly talking about contemplating the cosmos.²⁵

Plato continued the emphasis on contemplation when he said that the goal of the philosophic life was to behold the Good. It was Aristotle, however, who endorsed most strongly the views of Pythagoras and Anaxagoras. Aristotle said that one obtained fulfillment through contemplation. This was because “by nature all men desire to know.”²⁶ This being the case, it follows that fulfilling this desire is one of the ends of humans. But for Aristotle, knowledge became intrinsically valuable when its object was intrinsically valuable. This condition is only fully satisfied in contemplation. Contemplation incorporates into itself not only knowledge but also admiration and wonder. In its highest form *contemplatio* is love (*eros*) of its object. As Gruner says: “In contemplation the object is loved because it is as it is and not otherwise, because it is seen to be noble and thus intrinsically worthy of love, because it is recognized that love is the only appropriate attitude that can be taken towards it, not out of duty or due to a divine command but simply because of the nature of the thing.”²⁷

Once Christianity came onto the scene, the Aristotelean conception became modified. Under the influence of neo-Platonism, Christianity redefined the object of contemplation as the transcendent God and its goal as redemption. The transcendent God who had created the world was alone worthy of worship. The world was still seen as of value, not in its own right, but as a creation of God. Nature’s harmony and beauty were still praised, but only in order to praise its creator. The value of the world was, in short, derivative and secondary.

But the status of contemplation remained unchanged. So Aquinas could insist that *vita activa est dispositio ad contemplativam*, the active life

prepares one for contemplation.²⁸ There is no question that Aquinas agrees with Aristotle that the contemplative life is higher than the active, and this position is almost universally held in the high Middle Ages. But Okham's thought threw into question the intrinsic value of the natural world. And if the world has no intrinsic value, then it is not a worthy object of contemplation. The nature and superiority of contemplation become undermined. By the time of Francis Bacon the time is ripe for the value of the contemplative life to be discredited. Bacon rejected the analogy of Pythagoras and asserted that "in this theatre of man's life it is reserved only for God and Angels to be lookers on."²⁹ Bacon, in fact, saw nothing but vanity and pride in those who extolled the life of contemplation. It was, in short, a selfish life and inferior to the life of action. In the process of inverting the importance of contemplation and action Bacon made the world, instead of being something to contemplate, raw material for humans to use.

We can perhaps see most clearly where Bacon's thought leads when we look at the thought of Thomas Hobbes (1588–1679) some fifty years after Bacon. Hobbes appropriated Bacon's notion that humans are not part of a larger harmonious whole. Hobbes pushed this further: humans are locked in a perpetual conflict with a hostile nature. In their original state humans are exposed to a life that is nasty, brutish, and short. Only human knowledge helps to ameliorate this condition. Significantly, Hobbes saw no end to this struggle to subdue nature. He says:

So that in the first place, I put for a generall inclination of all mankind, a perpetuall and restlesse desire of Power after power, that ceaseth onely in Death. And the cause of this, is not alwayes that a man hopes for a more intensive delight, than he has already attained to; or that he cannot be content with a moderate power: *but because he cannot assure the power and means to live well, which he hath present, without the acquisition of more.*³⁰

Thus, human power over nature must be continually reasserted. As Gruner says, "Here, we might say, are the beginnings of a theory of infinite scientific progress in terms of power."³¹ The question of ends is entirely limited to the alleviation of the physical hardships caused by human existence. There is no thought beyond that.

The full significance of Bacon's discrediting of the contemplative life is not, however, fully clear until much later, with the attack on belief in transcendental norms. The greatest and most profound expression of the view that there is no transcendental ground of permanence is found in Nietzsche (1844–1900). It is in Nietzsche's writings that we see most clearly the implications of emphasizing the historicity of human existence.

If it is accepted that the natural sciences have demonstrated how unnecessary it is to assume purpose in unraveling the mysteries of nonhuman nature, how much more should it apply to human nature! Humans do not have purpose—the historic sense tells us so. Nietzsche was a great admirer of the Greek tragedies because he saw in them humans inspired by nobility—they understood life had no purpose but were resolutely defiant in the face of it. Socrates destroyed Greek tragedy by maintaining that life did have purpose and that this could be revealed through rationality. Nietzsche attacks Socrates. The historic sense destroys belief in any transcendent ground of purpose. We live within horizons that are our own creations; there is no transcendental sanction for them. The horizon of the transcendent has been wiped away.

As we have seen, the way knowledge is conceived is inextricably bound up with what its end is thought to be. Contemplation was believed to be a valuable end because its object was valuable—that is, the natural world. And this natural world, it was thought, was valuable because, in the famous words of Aristotle, “all things have by nature something divine [in them].”³² The divine reveals itself in the natural sphere. Such a view made it virtually impossible to see in nature an artifact that may be remade and reshaped by humans into whatever they desire. But after the nominalists the view that nature reflected a divine order became harder to maintain, and Francis Bacon’s attack on contemplation had a receptive audience. Bacon was a turning point: after him, nature came to be seen as an object that was subject to manipulation and control by human will.

Conclusion

What has our inquiry into the origins of modernity told us about its characteristics? First, it is clear that modernity signals a break with traditional Western thinking. It is a matter of some dispute as to whether the break should be seen as a *radical* discontinuity, but it is clear that the break is significant.³³ Our analysis indicates that the most significant development leading to modernity was the rise of what Blumenberg calls human self-assertion. The notion that there is an eternal order that limits what humans can do has been jettisoned. The belief in the efficacy of human agency to determine not only the direction of events in time, but also to remake the natural world in any way we deem fit, has had paradoxical consequences, as Leon Kass observes: “Our conquest of nature has made us the slaves of blind chance. We triumph over nature’s unpredictabilities only to subject ourselves to the still greater unpredictability of our capricious wills and fickle opinions. That we have a method is no proof against our madness.

Thus, engineering the engineer as well as the engine, we race our train we know not where.”³⁴

The break with the ancient and medieval mode of philosophical inquiry, in which the focus was on the formal patterns underlying space and time, and the turn to analysis of the sensory world through mathematics and experiments, gave rise to science and technology. Science focuses on this world, a world of space and time, not on some transcendental reality, and gives us knowledge of that world. Technology combines what we have come to know about this world with practical applications of that knowledge, and does so in a unique way. Through science and technology we have gained unprecedented power to manipulate and order the world in the way we want. But what we want is no longer found in a Good grounded in an eternal order, and so, as Warren Winiarski observes: “As transcendent goals for human life are abandoned . . . human life as such is divinized, made into something transcendent; and it is thus that the sciences and the technological arts receive an imperious ordinance to gratify a proliferation of human ‘needs.’”³⁵

There lies the major irony at the heart of modernity. God and the Good have been banished, only to be replaced by Man and his goods.³⁶ “New lamps for old!” cried the evil magician in *Aladdin and the Wonderful Lamp*, and the wonderful old lamp was eagerly traded in for a new one, without it being realized that it was no bargain. In a similar fashion we have substituted new gods for old, without perhaps fully understanding what we have given up and what we have in return. Frederick Jameson has referred to the Market as that “consoling replacement for the divinity.”³⁷ But, like the Hindu god Shiva, it is a divinity with many faces, and not all of them are consoling. Globalization and technology may have brought many benefits, but they have also created many problems. In the chapters that follow we will explore some of the challenges that face us as a result of globalization and technology.

Notes

1. L. P. Hartley, *The Go-Between* (New York: Stein and Day Publishers, 1967), p. 3.
2. Jacques Ellul, *The Technological Society*, trans. John Wilkinson (New York: Vintage, 1964), p. xxix.
3. Robert B. Pippin, *Modernism as a Philosophical Problem: On the Dissatisfactions of European High Culture* (Cambridge, Mass.: B. Blackwell, 1991), p. 22.
4. There are a large number of writers who have pursued this line of inquiry. Of special note, however, is George P. Grant, who was Harold

- Coward's thesis supervisor. See his *Technology and Empire* (Toronto: House of Anansi, 1969) and *Time as History* (Toronto: CBC, 1969). On the importance of Grant's work, see Arthur Davis, *George Grant and the Subversion of Modernity: Art, Philosophy, Politics, Religion, and Education* (Toronto: University of Toronto Press, 1997) and William Christian, *George Grant: A Biography* (Toronto: University of Toronto Press, 1993).
5. Lynn White Jr., "The Historical Roots of our Ecologic Crisis," *Science* 155 (1967): 1203–1207.
 6. See David Lindberg, *Roger Bacon's Philosophy of Nature* (Oxford: Clarendon Press, 1983).
 7. Francis Bacon, *The Advancement of Learning*, in *Selected Writings of Francis Bacon*, ed. H. G. Dick (New York: Random House, 1955), bk I, p. 193.
 8. Bacon, *Advancement of Learning*, p. 194.
 9. Francis Bacon, in the *Prooemium* of *The Great Instauration*, in *The English Philosophers from Bacon to Mill*, ed. Edwin A. Burt (New York: Modern Library, 1967), p. 6.
 10. Bacon, *The Great Instauration*, p. 5.
 11. Francis Bacon, *Novum Organum*, bk. I, aphorism 83.
 12. Bacon, *Advancement of Learning*, bk. II, pp. 250f.
 13. Carolyn Merchant, *The Death of Nature: Woman, Ecology, and the Scientific Revolution* (San Francisco: Harper and Row, 1980).
 14. Bacon, *Advancement of Learning*, bk. II, p. 321.
 15. George Ovitt Jr., *The Restoration of Perfection: Labour and Technology in Medieval Culture* (London: Rutgers University Press, 1987).
 16. See Dom Cuthbert Butler, *Western Mysticism: The Teaching of Augustine, Gregory and Bernard on Contemplation and the Contemplative Life* (London: Constable, 1967), p. 160.
 17. Bacon, *Advancement of Learning*, bk I, p. 193.
 18. Plato, *Timaeus* 37d.
 19. Richard Tarnas, *The Passion of the Western Mind: Understanding the Ideas That Have Shaped Our World View* (New York: Ballantine Books, 1991), pp. 225–228.
 20. Quoted in Richard S. Westfall, *Essays on the Trial of Galileo* (Notre Dame: University of Notre Dame Press, 1989), p. 20.
 21. Hans Blumenberg, *The Legitimacy of the Modern Age*, trans. Robert M. Wallace (Cambridge, Mass.: MIT Press, 1983).
 22. Blumenberg says that "the essence of the modern age's understanding of itself" (*Legitimacy*, p. 196) is that humans assert themselves "both against and by means of nature" (*Legitimacy*, p. 318).
 23. Butler, *Western Mysticism*, p. 160.

24. Julianus Pomerius, *The Contemplative Life*, Ancient Christian Writers, vol. 4 (Cambridge: Cambridge University Press, 1947), p. 31.
25. See Gruner, *Theory and Power*, pp. 12f.
26. Aristotle, *Metaphysics* 980a, line 22.
27. Gruner, *Theory and Power*, p. 16.
28. Thomas Aquinas, *Commentary on the Third Book of the Sentences of Peter Lombard*, chap. 35, pt.1, sec. 3, par. 3.
29. Bacon, *Advancement of Learning*, bk II, p. 321.
30. Thomas Hobbes, *Leviathan*, ed. Richard E. Flathman and David Johnston (New York: W. W. Norton and Co., 1997), pp. 55f. Emphases added.
31. Gruner, *Theory and Power*, p. 55.
32. Aristotle, *Nicomachean Ethics* bk. VII, 1153b, line 33.
33. See Leo Strauss, "The Three Waves of Modernity," in *Political Philosophy: Six Essays by Leo Strauss*, ed. Hilail Gildin (New York: Pegasus, 1975), pp. 81-98.
34. Leon R. Kass, "The New Biology: What Price the Relief of Man's Estate?" in *Science, Technology and Freedom*, ed. Willis H. Truitt and T. W. Graham Solomons (Boston: Houghton Mifflin Co., 1974), p. 164.
35. Warren Winiarski, "Niccolò Machiavelli," in *History of Political Philosophy*, ed. Leo Strauss and Joseph Cropsey (Chicago: Rand McNally, 1963), p. 273.
36. By using "Man," I am agreeing with the feminist argument that the modern world is essentially a creation of the male.
37. Fredric Jameson, *Postmodernism, or, the Cultural Logic of Late Capitalism* (Durham: Duke University Press, 1999), p. 273.