Modernity and the Magician's Bargain:
Why C. S. Lewis Believed Science Must Repent

by Ken Myers

In the past few years, we have witnessed the publication of a number of books by very angry atheists. The tone of these books has been remarkably intemperate; "Jeremiad" is a term that comes to mind, but it's not an apt term to describe these books, since it suggests some higher cause being served; intoning prophets were channelling divine wrath, not simply their own, and the last thing authors like Richard Dawkins and Steven Weinberg want is to identify their complaints with some transcendent cause.

But I can't escape the irony of the tone of righteous indignation in these books. Rarely has the case for the superiority of cool rationality been made with such irrational heat. Commenting on Richard Dawkins and on a number of hysterical op-ed pieces published when the film version of *The Lion the Witch and the Wardrobe* came out, sociologist Frank Furedi observed that "the vitriolic invective hurled at Christian believers today is symptomatic of the passions normally associated with a fanatical Inquisitor."[1] Such violent rhetoric gives one little confidence in the premise that religious belief is the main source of violence in our world, and that eliminating religion would leave room for intrinsic human niceness to flourish.

Some of the anger is clearly related to the fear of religious extremism in a post-9/11 world. Many complacent secularists can't imagine that anyone in the twenty-first century would suffer a minor inconvenience in the name of religion, let alone give one's life and take a few thousand other lives along with them. Suddenly, people who had been superficially celebrating diversity and tolerance and the rational manageability of human life came face-to-face with a diversity they couldn't fathom, let alone tolerate or manage, and some of them seem to have come unhinged.

But I believe there is a deeper fear evident in the rhetorical style of many of the anti-religious screeds in the past several years. While these writers insist that belief in God is irrational, they believe firmly in the modern liberal assumption that the hope of human progress could be realized through two principal mechanisms: scientific advancement and, in sociologist Craig Gay's summary phrase, "the liberation of individuals from the repressive constraints of religion and tradition."[2] It's bad enough that religions continue to inform the *private* lives of individuals, but when religion questions science, especially the science of evolution, then all hopes of human progress are threatened.

On purely materialist assumptions, I'm not sure what grounds there could be for belief in human progress, or even in the abstraction of "human," for that matter. Even the belief that empirical knowledge is superior to theoretical knowledge requires some defense, but many of these angry atheists, like all fundamentalists, seem too cocky and too stubborn to recognize this.

We have, of course, seen this sort of thing before, in figures like T. H. Huxley, Bertrand Russell, and, more recently, Carl Sagan. In each of these instances, religion was regarded as an offense, not just because it was irrational, but specifically because it violated the form and

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[1] Frank Furedi, "The Curious Rise of Anti-Religious Hysteria," *Spiked-Online,* 23 January 2006.

[2] Craig Gay, *The Way of the (Modern) World: or, Why It's Tempting to Live as If God Doesn't Exist* (Eerdmans, 1998), 54.

consequences of a rationality that is associated with science. In the mid-twentieth century, C. S. Lewis caught the sense of irony embodied in the religious fervor maintained by materialists for that most comfortingly progressive of scientific ideas, evolution. His "Evolutionary Hymn," eminently singable to the tune "Mannheim" and inspired by the early nineteenth-century hymn, "Lead Us Heavenly Father, Lead Us," displays the paradoxes of modern scientific optimism, which greedily clings to dreams of a better future while denying the existence of any transcendent power or concept that might define "better."

Evolutionary Hymn

Lead us, Evolution, lead us
Up the future's endless stair;
Chop us, change us, prod us, weed us.
For stagnation is despair:
Groping, guessing, yet progressing,
Lead us nobody knows where.

Wrong or justice, joy or sorrow,
In the present what are they
while there's always jam-tomorrow,
While we tread the onward way?
Never knowing where we're going,
We can never go astray.

To whatever variation
Our posterity may turn
Hairy, squashy, or crustacean,
Bulbous-eyed or square of stern,
Tusked or toothless, mild or ruthless,
Towards that unknown god we yearn.

Ask not if it's god or devil,
Brethren, lest your words imply
Static norms of good and evil
(As in Plato) throned on high;
Such scholastic, inelastic,
Abstract yardsticks we deny.

Far too long have sages vainly
Glossed great Nature's simple text;
He who runs can read it plainly,
'Goodness = what comes next.'
By evolving, Life is solving
All the questions we perplexed.

On then! Value means survival-
Value. If our progeny
Spreads and spawns and licks each rival,
That will prove its deity
(Far from pleasant, by our present,
Standards, though it may well be).[3]

Lewis believed in evolution as a biological reality, but he also understood, with a depth most of our scientists can't comprehend, the power of the imagination to concoct idolatries. The idolatry promoted by evolution was what he labelled "Developmentalism," which he described as "the extension of the evolutionary idea far beyond the biological realm: it fact its adoption as the key principle of reality. To the modern man it seems simply natural that an ordered cosmos should emerge from chaos, that life should come of the inanimate, reason out of instinct, civilization out of savagery, virtue out of animalism. . . . It will be seen that this view is not incompatible with all religion: indeed it goes very well with certain types of Pantheism. But it is wholly inimical to Christianity, for it denies both creation and the Fall. Where, for Christianity, the Best creates the

[3] from Clive Staples Lewis, *Poems*, ed. Walter Hooper (New York: Harcourt Brace Jovanovich, 1964), 55.

good and the good is corrupted by sin, for Developmentalism, the very standard of good is itself in a state of flux."[4]

In addition to his recognition of the obstacle to Christian orthodoxy posed by Developmentalism, Lewis understood the danger to social and personal life of a belief in human progress pursued through the scientific conquest of nature, especially when that project of conquest denied the reality of any moral order in the nature of things established by something that is beyond Nature. While contemporary, scientistic atheists confidently affirm the possibility of human thriving *only* when claims about the importance of nonscientific values are silenced, Lewis believed that "A dogmatic belief in objective value is necessary to the very idea of a rule which is not tyranny or an obedience which is not slavery."[5]

When he wrote *The Abolition of Man* in the late 1940s, Lewis was clearly troubled by the specter of a tyranny exercised by advocates of a science cut off from the great moral tradition in both East and West, a tradition which presupposed certain moral axia which could not be defended by appeal to some higher principles. The book begins as a defense of what Lewis calls "objective value," as a critique of moral and aesthetic subjectivism. Lewis denies that one could recognize the objectivity of moral order as a detached outsider. This objective moral order can only be recognized by those who have already subjected themselves to it. It is not unlike the ways facts in science come to be known. "This thing which I have called for convenience the Tao, and which others may call Natural Law or Traditional Morality or the First Principles of Practical Reason or the First Platitudes, is not one among a series of possible systems of value. It is the sole source of all value judgements. If it is rejected, all value is rejected. If any value is retained, it is retained. The effort to refute it and raise a new system of value in its place is self-contradictory."[6] Only if one's capacity for moral perception has been shaped from *within* the story that is human morality can one aptly make any moral judgments. "An open mind, in questions that are not ultimate, is useful. But an open mind about the ultimate foundations either of Theoretical or of Practical Reason is idiocy. If a man's mind is open on these things, let his mouth at least be shut. He can say nothing to the purpose. Outside the Tao there is no ground for criticizing either the Tao or anything else."[7]

While Lewis recognized the dangers of a number of faulty philosophies that promoted subjectivism, he knew that the testimony of modern science, and the place accorded science in our social life, was the greatest threat to the Tao. Science's achievements have tended to promote *scientism*, the assumption that scientific knowledge is the only real knowledge. In his 1983 book, *The Restitution of Man: C. S. Lewis and the Case against Scientism,* Michael Aeschliman offered this summary of two essentially different modes of knowledge, one of which was being crowded out by the claims of some scientists, philosophers, and pundits: "Man the knower pursues two related but distinct kinds of knowledge. As *homo sciens,* man the knower of *scientia*, he tends to matters of fact, quantity, matter, and the physical realm; as *homo sapiens,* man the knower of *sapientia*, he shows his

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[4] "Modern Man and His Categories of Thought," *Present Concerns,* ed. Walter Hooper (San Diego: Harcourt Brace Jovanovich, 1986), 63f.

[5] Lewis, *The Abolition of Man, or Reflections on Education with Special Reference to the Teaching of English in the Upper Forms of Schools* (London: Macmillan, 1947), 46.

[6] Ibid., 28.

[7] Ibid., p. 31.

interest in the qualities of meaning, purpose, value, idea, and the metaphysical realm. If we are to have truth, neither kind of knowledge can be denied or ignored."[8]

Aeschliman's book cites a number of fellow critics of scientism, including Chesterton, Jacques Ellul, and John Henry Newman, all of whom realized, as did Lewis, the threat to human well-being in a society that insisted that all questions of meaning and purpose were private, not properly public concerns. From E. F. Schumacher's 1977 book, *A Guide for the Perplexed*, Aeschliman offers this worried prognosis: "The maps produced by modern materialistic Scientism leave all the questions that really matter unanswered; more than that, they deny the validity of the questions. The situation was desperate enough in my youth half a century ago; [but] it is even worse now because the ever more vigorous application of the scientific method to all subjects and disciplines has destroyed even the past remnants of ancient wisdom—at least in the Western world."[9]

Writing in 1985, Leon Kass expressed similar concerns when he observed that "Liberal democracy, founded on a doctrine of human freedom and dignity, has as its most respected body of thought a teaching that has no room for freedom and dignity. Liberal democracy has reached a point—thanks in no small part to the success of the arts and sciences to which it is wedded—where it can no longer defend intellectually its founding principles. Likewise also the Enlightenment: It has brought forth a science that can initiate human life in the laboratory but is without embarrassment incompetent to say what it means either by life or by the distinctively human, and, therefore, whose teachings about man cannot even begin to support its own premise that enlightenment enriches life."[10]

This paradoxical quality of modern knowledge as advanced through the social project of science was well-known to Lewis, and his awareness of it suffuses *The Abolition of Man,* not to mention many of the conversations he produced in his space trilogy. Lewis saw the self-defeating, suicidal effect of reducing the pursuit of human happiness to a project of conquering Nature. When the limits imposed by our embodied existence are seen as the most severe threats to our happiness, and when any limits imposed by traditional morality must be shucked off in the effort to defeat the limits of Nature, then what is truly human actually surrenders to Nature. As Lewis puts it, "When all that says 'it is good' has been debunked, what says 'I want' remains. . . . At the moment, then, of Man's victory over Nature, we find the whole human race subjected to some individual men, and those individuals subjected to that in themselves which is purely 'natural'—to their irrational impulses. Nature, untrammeled by values, rules the Conditioners [Lewis's term for the elites who gain power through science and technology] and, through them, all humanity. Man's conquest of Nature turns out, in the moment of its consummation, to be Nature's conquest of Man. Every victory we seemed to win has led us, step by step, to this conclusion. All Nature's apparent reverses have been but tactical withdrawals. We thought we were beating her back when

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[8] Michael D. Aeschliman, *The Restitution of Man: C. S. Lewis and the Case against Science* (Grand Rapids: Eerdmans, 1983), 48.

[9] Ibid., 50.

[10] Leon Kass, *Toward a More Natural Science: Biology and Human Affairs* (New York: Free Press, 1985), 7.

she was luring us on. What looked to us like hands held up in surrender was really the opening of arms to enfold us forever."[11]

The paradoxes and ironies of the historical trajectory of science in the West are legion, and perhaps the richest paradox is the little-appreciated fact that the dawn of modern science was not, as many today assume, the result of the sudden advent of a free, secular, and cooly rational mentality in the world, but was in fact a quest with a deeply religious, albeit idolatrous, motivation. In fact, the appearance of scientistic zealots or inquisitors, prophets of secularism behaving with religious fervor, is not evidence of a careless inconsistency. Rather, it reflects on the historical fact of science's roots in millenarian zeal.

But this story isn't just about science; it is about the ideas that animate the modern West. They are ideas we rarely examine deliberately, since they are the water we swim in. But they are worth examining much more deliberately, especially within the Church. The Church should always be wary of cultural captivity. "Worldliness" is always a grave threat to faithfulness, and worldliness is extremely hard to recognize when the Church is as thoroughly assimilated as she is today. It seems increasingly common for Christian leaders to be willing to hitch their wagons to whatever cultural trend happens to come along. There are, for example, many Christians today who speak and write enthusiastically about the necessity of the Church becoming more at home with postmodernity, whatever that might mean. Some of them can even quote Lyotard or Derrida. But few of them seem to have wrestled sufficiently with the disordering effects on the life of faith that have resulted from centuries of Christian complicity with modernity, and now they are confidently asserting the necessity of the Church's reinvention after the image and likeness of modernity's gangly daughter. Lewis was deeply aware of the disorders crippling modern culture, which is why I think he was such a successful apologist. He understood modern folly from a premodern standpoint, something postmoderns can't really do.

There is a long paragraph in the final chapter of *The Abolition of Man* that highlights some of the main features of modernity as science introduced it, along with some comments on the unhealthy cultural milieu in which science was born. It is in that paragraph that Lewis uses the term "Magician's bargain," which I have used in my title, and in which he suggests that science's triumphs may have been achieved at too great a price, and that something like repentance is needed. I have already hinted at the price he has in mind: the price of abandoning as a society the pursuit of non-scientific knowledge, knowledge of permanent things. And I have alluded to the contours of the transaction he calls the "magician's bargain," a phrase with allusions to the story of Faust. I want to look at some of the other observations and allusions in that "magisterial paragraph," as I think of it, in an effort to benefit more thoroughly from Lewis's great wisdom about the tragedy of the modern West.

Lewis begins by defending himself against the charge of being anti-science, a charge that is often leveled against anyone who suggests that some specific scientific endeavor or its consequences might have problems associated with it. It's a bit like saying that someone who opposes a policy of our government, past, present, or hypothetical, is unpatriotic. Lewis insists that the recognition of the value of knowledge is itself part of the Tao that he is defending, and that apart from that system of moral understanding, knowledge loses its inherent value. The only

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[11] Op. cit., 41f.

framework in which science might be regarded to have value is a context defined by knowledge that science itself cannot give, and since he is thoroughly committed to such a framework, more committed than are most apologists for scientism, accusing him of being anti-science is naive.

He then comments on the metaphor, "magician's bargain," "that process whereby man surrenders object after object, and finally himself, to Nature in return for power." He makes the point that the aptness of the metaphor is not arbitrary. In fact, what magicians were after is pretty much the same thing that early science was after. Let's look at an extended section of this paragraph:

> The fact that the scientist has succeeded where the magician failed has put such a wide contrast between them in popular thought that the real story of the birth of Science is misunderstood. You will even find people who write about the sixteenth century as if Magic were a medieval survival and Science the new thing that came in to sweep it away. Those who have studied the period know better. There was very little magic in the Middle Ages: the sixteenth and seventeenth centuries are the high noon of magic. The serious magical endeavour and the serious scientific endeavour are twins: one was sickly and died, the other strong and throve. But they were twins. They were born of the same impulse. I allow that some (certainly not all) of the early scientists were actuated by a pure love of knowledge. But if we consider the temper of that age as a whole we can discern the impulse of which I speak. There is something which unites magic and applied science while separating both from the 'wisdom' of earlier ages. For the wise men of old the cardinal problem had been how to conform the soul to reality, and the solution had been knowledge, self-discipline, and virtue. For magic and applied science alike the problem is how to subdue reality to the wishes of men: the solution is a technique; and both, in the practice of this technique, are ready to do things hitherto regarded as disgusting and impious—such as digging up and mutilating the dead.[12]

There is a lot of history embedded in here, and much of it, I think, is unfamiliar to most of us. Lewis's slightly shocked "you will even find people who will write about the sixteenth century" may be an understatement. Until I began researching this issue about fifteen years ago, I don't think I ever encountered the history he has in mind.

In beginning to try to understand some of that history, it's useful to remember that the term "Renaissance" means rebirth. There is about the era less a spirit of progress than one of recovery. And what was being recovered was not, contrary to the Enlightenment apologists for the Renaissance, the great secular humanism of the classical era. In fact the intellectual ferment of the period has much more to do with the relative openness to a wide variety of religious ideas than to some post-religious ideal. "Today, the Enlightenment-era positivist image of scientific knowledge marching triumphantly through the darkness and superstition of magic has definitively been laid to rest," writes historian of science Paolo Rossi in his book *The Birth of Modern Science.*[13] The

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[12] Ibid., 47f.

[13] Paolo Rossi, *The Birth of Modern Science* (Oxford: Blackwell, 2000), 26.

humanistic turn during the Renaissance was not so much the abandonment of God as it was an assertion of the divinity of Man. There was no "mere Man" evident in Renaissance humanism, but a vision of Man with divine capacities. The project of science was thus, from the beginning, a deeply religious project, which is *not* to say that it was a very Christian project, since the religious assumptions of the period were increasingly removed from orthodox Christian belief.

Central to the story of science's birth is a long-standing body of beliefs about the nature of human knowledge about Creation. In the classical world, as well as in medieval culture, history was believed to be basically a story of decline. Unbiased by beliefs in progress and evolution, thinkers of antiquity believed that the earliest knowledge one could obtain was always the best knowledge. They saw the history of mankind's understanding as one long story of decay from a primeval golden age to the bronze and iron of the present, from Adam to the present. So the closer one could get to Adam's knowledge of the world, the wiser they would certainly be. Since at least the first century, there was speculation on the nature of Adam's knowledge of the world, both before and after the Fall. Was is possible that there was some record of the primeval knowledge of Adam, knowledge with which he had controlled all the animals and had, so it was believed, miraculous powers over natural forces? Had the Flood destroyed such knowledge beyond recovery, just as the submerging of Atlantis was thought by some to have removed from us knowledge of an entire ancient race? Josephus Flavius, a first century Jewish historian, recounted an ancient legend to the effect "that the grandchildren of Adam, the sons of Seth, had inscribed this primeval knowledge on two columns, one of them made of bricks in case of an outbreak of fire, the other of stone in case of a catastrophic flood."[14]

Adam, Noah, Moses, and Solomon are key figures in such beliefs. Adam, sinless Adam before the Fall, was assumed to have had boundless knowledge, and apparently the alienation of the Fall did not take such knowledge from him, although the laziness and pride that accompanied the Fall had the effect of such knowledge being forgotten. The ninth century neo-Platonist, John Scotus Erigena, court philosopher to the grandson of Charlemange, firmly believed that "mankind's prelapsarian powers could be at least partially recovered and could contribute, in the process, to the restoration of mankind."[15] Erigena wrote that the cultivation of the mechanical arts to approach a state like Adam's knowledge was man's link to the Divine, "their cultivation a means to salvation." Not only was the pursuit of knowledge and skill in engaging Creation an aspect of the *imago Dei,* it was in fact intrinsically redemptive, it reversed the Fall in some sense.

While Erigena's ideas were not in the mainstream of Christian thought in the Middle Ages, he was not alone in this confidence about the capability of human ingenuity in the useful arts as a means of recovering mankind's perfection. That idea is evident in the writings of the eleventh- and twelfth-century Augustinian mystic, Hugh of St. Victor. "This, then, is what the arts are concerned with," he wrote, "this is what they intend, namely, to restore within us the divine likeness."[16]

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[14] Florian Ebeling, *The Secret History of Hermes Trismegistus: Hermeticism from Ancient to Modern Times* (Ithaca: Cornell University Press, 2007), ix.

[15] David F. Noble, *The Religion of Technology: The Divinity of Man and the Spirit of Invention* (New York: Alfred A. Knopf, 1997), 17.

[16] Ibid., 20.

In the middle of the twelfth century, we begin to see this confidence in human knowledge coupled with a new millenarian zeal. Joachim of Fiore, a Cistercian abbot from Calabria, and (in the words of one historian) an apocalypse consultant to three popes, began to teach with confidence that the millennium would arrive in 1260. After his death in 1202, the Franciscans picked up Joachim's enthusiasm for the dawning of a new age for the Church, and combined that confidence with the goal of using technical knowledge to achieve human perfection. Roger Bacon, who studied and taught at Oxford and Paris in the thirteenth century, was likewise committed to the Church's exploration of new technical capacities, in his case as a means of preparing to confront the Antichrist. Similar apocalyptic motivations would, over the next few centuries, also serve to inspire the beginnings of programs of global exploration.

Throughout the Middle Ages, if you had asked those seeking the sources of primeval knowledge where it most likely could have been preserved, the most common answer was Egypt. In the early Christian period, Egypt was widely venerated as the most ancient of cultures. Historian Francis Yates writes that, by the early Renaissance, "The belief that Egypt was the original home of all knowledge, that the great Greek philosophers had visited it and conversed with Egyptian priests, had long been current, and, in the mood of the second century, the ancient and mysterious religion of Egypt, the supposed profound knowledge of its priests, their ascetic way of life, the religious magic which they were thought to perform in the subterranean chambers of their temples, offered immense attractions."[17] Even the odd writing forms we know as hieroglyphics was assumed to be a kind of spiritual language. Remember that the mystery of the hieroglyphic wasn't solved until after the Rosetta Stone was discovered in 1799. That confidence of wisdom from ancient Egypt came to a climax in the work of some key figures of the Italian Renaissance in the mid fifteenth century.

Throughout the 1430s, an ecumenical council of bishops met in Basel, Ferrara, and Florence. Among the Council's notable topics of discussion was an effort to heal the great schism that had divided the Eastern and Western churches since 1054. Eastern bishops and the Eastern Emperor had some practical reasons to try to heal the breach, looking nervously at the growing power of the Ottoman Turks. In1438, the Council was relocated from Basel to Ferrara so as to accommodate more delegates from the Eastern Church, and in April of that year, a contingent of over 700 Eastern church leaders arrived in Ferrara for the first session of the Council in its new location.

The next year, the Council reconvened in Florence, in part due to the civic-and commercial-minded negotiations of Cosimo de' Medici, the great Italian merchant prince and notable patron of the arts and letters. Cosimo attended all of the lectures offered by the Greek scholars at the Council, including those given by the Plato scholar George Gemistus Pletho. Apparently, these lectures so impressed Cosimo that, at the age of 50, he became an eager admirer of Plato. (It's important to remember that Plato's works were virtually unavailable in the West in the early fifteenth century, and few people had a working knowledge of Greek.) Cosimo had been commissioning agents to acquire various ancient manuscripts for some time, and he now set out to build up the Greek section of his library, aided by the increased availability of manuscripts as the tide of those Turks rose in the East. In 1462, Cosimo established a new Platonic Academy at

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[17] Frances A. Yates, *Giordano Bruno and the Hermetic Tradition* (Chicago: University of Chicago Press, 1964), 5.

Careggi in the Tuscan hills near Florence. There he installed one of the greatest scholars of the century, Marsilio Ficino, with the task of preparing a complete Latin edition of all available works of Plato. Ficino had barely begun work when, in 1463, Cosimo urged him to set aside Plato's *Dialogues* in favor of working on a newly acquired manuscript from a thinker who towered over Plato in his reputation for brilliance, Hermes Trismegistus.

As I said earlier, the Renaissance was a backward-looking enterprise. If you're setting out to recover the fonts of knowledge and wisdom, you need to be facing upstream, and the further upstream, the better. While we tend to look back to Plato and Aristotle as great originators, in the fifteenth century it had been long assumed that the Athenian philosophers were relatively uninformed latecomers. For centuries, it had been assumed that if you could ever discover the writings of the legendary Hermes Trismegistus, sometimes believed to be a contemporary of Moses, you were almost back to Adam himself. And that's exactly what Cosimo had in his hands when he told Ficino to put those second-rate *Dialogues* aside: a manuscript recently brought back from Macedonia claiming to be the first fourteen books of the *Corpus Hemeticum.*

Hermes Trismegistus, the assumed author of these books, had been a legendary figure in Europe for over a millennium. He shows up in some of the patristics, and is condemned by Augustine in *The City of God* for promoting idolatry and magic. He was sometimes identified as the teacher of Moses, sometimes as the incarnation of the Egyptian god Thoth and the god Mercury, often as the source of the philosophies of Greece. He is credited by some as the inventor of music and writing. Trismegistus, by the way, means "thrice blessed," because Hermes was believed to have been the greatest philosopher, the greatest priest, and the greatest king, an interesting echo of the threefold offices attributed to Christ. As Francis Yates writes, "A large literature in Greek developed under the name of Hermes Trismegistus, concerned with astrology and the occult sciences, with the secret virtues of plants and stones and the sympathetic magic based on knowledge of such virtues, with the making of talismans for drawing down the powers of the stars, and so on. Besides these treatises or recipes for the practice of astral magic going on under the names of Hermes, there also developed a philosophical literature to which the same revered name was first attached."[18]

Hermes is often identified as a key figure in the transmission of Adamic knowledge. For example, one sixteenth-century book asserted that "The primeval knowledge was written down by Adam's sons on two tablets of stone, 'on which all the natural arts were engraved and recorded in mysterious, obscure characters that they called hieroglyphs.' After the Flood, a large part of this knowledge managed to survive in Egypt, but it was also passed along by Moses to the 'children of Israel.' Hermes was the wisest of the Egyptians, and also the incarnation of primeval Adamic knowledge."[19]

Another sixteenth-century work claimed: "As the first king in Egypt, Ham, son of Noah, wrote a description of alchemy, kept it safe in the Chest of the Flood, and afterward brought it back to Egypt; and, after him, his son Migraim and his adviser Hermes at that time taught the same. For those who understood the art of gold reckon its antiquity to be great; indeed, they claim that Adam, the first man, was the originator of the Philosophers' Stone, and they indicate that

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[18] Ibid., 2.

[19] Ebeling, op. cit., 78.

God made its model by means of the tree of the knowledge of good and evil; and also that the preparation of gold was pursued by King Ninus and his consort Semiramis; and that, among the Egyptians, it was written down by Hermes in hieroglyphic, that is, sacred, picture writing."[20]

Historian Francis Yates suggests that "it is probable that Hermes Trismegistus is the most important figure in the Renaissance revival of magic. Egypt was traditionally associated with the darkest and strongest magic, and now there were brought to light the writings of an Egyptian priest which revealed an extraordinary piety. . . . The extraordinarily lofty position assigned to Hermes Trismegistus in this new age rehabilitated Egypt and its wisdom, and therefore the magic with which that wisdom was associated."[21] When Lewis talks about the sixteenth and seventeenth centuries being the high noon of magic in Europe, he is describing the effects of Ficino's translation of the *Corpus Hermeticum.* Astrology, numerology, and alchemy were common practices among figures often assumed to be pioneers of science. We forget that Johannes Kepler was not only a brilliant mathematician and astronomer but also a court astrologer who believed that the movements of the planets had profound effects on human life. (We still have about 800 horoscopes that Kepler drew up for his patrons.) Isaac Newton had as much in common with Albus Dumbledore as with Stephen Hawking, being deeply committed to the pursuit of various alchemical and occultic research. Even Copernicus is believed by some scholars to have cited, if only in passing, Hermetic texts to clarify his heliocentric understanding of the Solar System.[22]

C. S. Lewis is clearly correct: "The serious magical endeavour and the serious scientific endeavour are twins: one was sickly and died, the other strong and throve. But they were twins. They were born of the same impulse." And how might we explain that impulse? Here it is useful to look at the work that Ficino began translating in 1463, the *Hermetic Corpus,* which contained an account of the Creation story which differs significantly from the account in Genesis. As Stephen McKnight summarizes it, the Hermetic account of Creation contains a strong "emphasis on man's capacity for godlike knowledge and on knowledge as the means of salvation."[23] Here it echoes ideas we saw in Erigena and others. But it goes far beyond the idea of recovering the *imago Dei.* In this story, a divine messenger known as Pimander urges Hermes: "Unless you make yourself equal to God, you cannot understand God: for the like is not intelligible save to the like. Make yourself grow to a greatness beyond measure, by a bound free yourself from the body; raise yourself above all time, become Eternity; then you will understand God. Believe that nothing is impossible for you, think yourself immortal and capable of understanding all, all arts, all sciences, the nature of every living being. . . . If you embrace in your thought all things at once, times, places, substances, qualities, quantities, you may understand God."[24]

This aspiring to be as God shows up in Ficino's own magnum opus, the *Platonic Theology,* begun around 1470. Ficino argues there that man "is endowed with a genius, as I would put it, that is almost the same as that of the Author of the heavens, and that man would be able to make the

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[20] Ibid., 116.

[21] Yates, op. cit. 18f.

[22] Ebeling, op. cit., 101.

[23] Stephen A. McKnight, *The Modern Age and the Recovery of Ancient Wisdom: A Reconsideration of Historical Consciousness, 1450-1650* (Columbia: University of Missouri Press, 1991), 33.

[24] Ibid., 34.

heavens in some way if he only possessed the instruments and the celestial material, since he does make them now, although out of other material, yet very similar in structure."[25] Stephen McKnight comments: "The position that Ficino is taking is truly extraordinary even by Renaissance standards. In the biblical stories of creation, man is twice punished for attempting to gain the knowledge and the power to be like God. Ficino, on the other hand, maintains that man's comprehension of the world is so completely comparable to God's that he could make the heavens if he only possessed the instruments and the celestial material. . . . This ability to emulate God even extends to the capacity to work miracles: 'The human mind vindicates to itself a right to divinity not only in forming and shaping matter through the methods of arts, as we have said, but also in transmuting the species of things by command, which work is indeed called a miracle. . . . Here we marvel that the souls of men dedicated to God rule the elements, call upon the winds, force the clouds to rain, chase away fogs, cure the diseases of human bodies and the rest. These plainly were done in certain ages among various peoples, as poets sing, historians narrate, and those who are the most excellent of philosophers, especially the Platonists, do not deny, the ancient theologians testify, above all Hermes and Orpheus, and the later theologians also prove by word and deed.'"[26]

"The entire striving of our soul is that it become God.," claims Ficino. "Such striving is no less natural to me than the effort of flight is to birds."[27] "[T]he immense magnificence of our soul may manifestly be seen from this, that he will not be satisfied with the empire of this world, if, having conquered this one, he learns that there remains another world which he has not yet subjugated. . . . Thus man wishes no superior and no equal and will not permit anything to be left out and excluded from his rule. This status belongs to God alone. Therefore he seeks a divine condition." Ficino later asserts that Man has the power to acquire knowledge to change fate, to shape his own destiny.[28]

Here I think we begin to see the origins of the idea Lewis introduces in our magisterial paragraph, an idea that serves as a wonderful summary of the spirit of modernity. "There is something which unites magic and applied science while separating both from the 'wisdom' of earlier ages. For the wise men of old the cardinal problem had been how to conform the soul to reality, and the solution had been knowledge, self-discipline, and virtue. For magic and applied science alike the problem is how to subdue reality to the wishes of men." It's not hard to find remarkably arrogant claims made in the name of science and technology today, claims about our ability to control nature, to reinvent human nature more to our liking. Those aims have become entirely secularized today, or at least they seem to have. But in the fifteenth century, they were presented by a priest in the Catholic Church (Ficino was ordained in 1473) as a path of redemption.

Stephen McKnight identifies six principle elements of Ficino's view of man, elements that demonstrate the debts he owed to the Hermetic writings, and which clearly invite us to pursue the project of subduing reality to the wishes of men:

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[25] Ibid., 46.

[26] Ibid., 47.

[27] Ibid.

[28] Ibid., 48.

1. The yearning to be like God, implanted in us by God, is the strongest of human drives and motivations.
2. To be like God means being free of control or domination by any force or factor. [Note that there is no evidence of love as a central attribute of God, or or piety.]
3. Self-control or governance is acquired through knowledge. The ignorant can only participate in the lower levels of existence; the wise man uses his participation as a means of knowing and mastering the lower orders and conditions of life.
4. Only man has the ability to dominate the created order and alter his fate.
5. Knowledgeable participation in the world is man's means of self-divinization. Man demonstrates his godlike knowledge and creativity through his mastery of the world.
6. Man's physical attachment to the world is not a threat to man's immortality; in fact, his dominion as a terrestrial god is the beginning of his union with God and his gaining of immortality."[29]

I don't mean to suggest that Ficino entertained the idea of displacing God. But neither did the builders of the Tower of Babel explicitly set out to abandon God, nor did Aaron and the makers of the golden calf seem to entertain the idea of practicing idolatry.

A footnote. In the early seventeenth century, *The Hermetic Corpus* was determined to have been, not the product of prehistoric Egypt, but writings from the second and third century A.D., with affinities to the writings of certain Gnostic sects. Hermes Trismegistus probably never existed.

By the time we come to one of Ficino's heirs, Francis Bacon, we are quite a bit removed from the more mystical aspects of the Hermetic writings. Bacon seems a much more practical figure, which may not actually be a good thing, for his separation of the spiritual and the material may have hastened the secularization of science.

Lewis calls Francis Bacon the chief trumpeter of the new era, in recognition of the role that Bacon had in laying the foundations for an apologetics for science. Certainly Bacon never intended the Abolition of Man. Far from it. In his classic, pithy statement about the redemptive possibilities of science, Bacon wrote: "For man by the fall fell at the same time from his state of innocency and from his dominion over creation. Both of these losses however can even in this life be in some part repaired; the former by religion and faith, the latter by arts and sciences." As in Erigena and Hugh of St. Victor, "arts" refers to the mechanical and practical arts, what we would today call technology. the means of which we might achieve "the relief of man's estate." Later Bacon established some boundaries for the pursuit of knowledge as power: "Only let the human race recover that right over nature which belongs to it by divine bequest, and let power be given it; the exercise thereof will be governed by sound reason and true religion."

This sounds like a plausible and noble theological basis for science. And yet there are some problems with the way Bacon formulated this. The main problem is the dichotomy that Bacon reintroduces between the *spiritual* effects of the Fall, that is the loss of innocence and the

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[29] Ibid., 48f.

corrupting of the relationship with God, and the material, *physical* effects of the Fall, the loss of dominion and the new experience of the pain and struggle of natural disorder.

Religion will remedy one of these losses, and technical skill will remedy the other. But one has to ask if the mastery over nature granted to Adam can best be understood simply as a technical mastery, or if it was an enactment of and a blessing for his loving and obedient posture toward God. William Leiss, in his book *The Domination of Nature,* asks just this question: ". . . Bacon, together with virtually all of his readers—failed to notice the necessity of demonstrating one crucial aspect of his argument, namely, that it is through the progress of the arts and sciences that 'mastery of nature' is achieved. . . . Why is the recovery of the divine bequest not the result of moral progress rather than scientific progress?"[30] Leiss points out that most earlier Christians believed that "it was their exemplary moral life, not their superior scientific knowledge, which was believed to be the basis of their restoration of that dominion over the animals possessed by Adam." However, we know that there was this minority view, nourished by the Hermetic writings, that the recovery of primeval knowledge was inherently redemptive.

On the more orthodox view, Adam's dominion was not something separable from his walking with God; it was both a blessing and an expression of that faithfulness. In Genesis 1:28, dominion is bestowed in the form of a *blessing.* By defining mastery over nature as something achievable apart from that faithfulness, Bacon, in the judgment of William Leiss, "unwittingly charted a course for later generations which led to the gradual secularization of this idea. His contention that science shared with religion the burden of restoring man's lost excellence helped create the climate in which earthly hopes flourished at the expense of heavenly ones."[31]

Leiss credits Bacon with "forming the modern consciousness of the idea of mastery over nature,"[32] and he claims that Bacon wasn't just adapting this old theme to a new social context, "but rather was attempting to transmute it into a wholly different form, a form appropriate for the age of secular science and technology that was dawning."[33] But is it fair to accuse Bacon of so radically altering the understanding of dominion as set forth in Genesis 1:28? Certainly Lewis seems to think so, in suggesting that subduing nature to the wishes of men is a dramatic departure from the way of the Tao which encouraged subduing the self to the shape of reality as the path of godliness.

The research of Jewish historian Jeremy Cohen on the premodern interpretation of the dominion text by Jews and Christians seems to confirm the fact that Bacon was in fact doing something new. Cohen writes that "Ancient and medieval readers of the Bible did not discount the conferral of dominion in the second half of the primordial blessing, and they often posed numerous questions to define its limits and implications. Yet with a handful of rare and sometimes questionable exceptions, they never construed the divine call to master the earth and rule over its animal population as permission to interfere with the workings of nature—selfishly to exploit the

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[30] William Leiss, *The Domination of Nature* (Montreal: McGill-Queen's University Press, 1972), 52f.

[31] Ibid., 53.

[32] Ibid., xii.

[33] Ibid., xiii.

environment or to undermine its pristine integrity."[34] One might say, in Christian terms, that the bestowal of rule was an invitation to mirror the rule of God in Christ, our great King. Human rule of the earth was mediatorial rule, and our kingship should mirror Christ's kingship who rules as a suffering servant and sacrificial shepherd, not as a self-interested dictator. This was rule as stewardship, not tyranny.

We see such a view in Calvin's commentary on Genesis 2:15, in which we are told that the Lord God put Adam in the Garden to tend and to keep it.

> Moses now adds, that the earth was given to man, with this condition, that he should occupy himself in its cultivation. Whence it follows, that men were created to employ themselves in some work, and not to lie down in inactivity and idleness. This labour, truly, was pleasant, and full of delight, entirely exempt from all trouble and weariness; since, however, God ordained that man should be exercised in the culture of the ground, he condemned, in his person, all indolent repose. Wherefore, nothing is more contrary to the order of nature, than to consume life in eating, drinking, and sleeping, while in the meantime we propose nothing to ourselves to do. Moses adds, that the custody of the garden was given in charge to Adam, to show that we possess the things which God has committed to our hand, on the condition, that being content with a frugal and moderate use of them, we should take care of what shall remain. Let him who possesses a field, so partake of its yearly fruits, that he may not suffer the ground to be injured by his negligence; but let him endeavour to hand it down to posterity as he received it, or even better cultivated. Let him so feed on its fruits, that he neither dissipates it by luxury, nor permits it to be marred or ruined by neglect. Moreover, that this economy, and this diligence, with respect to those good things which God has given us to enjoy, may flourish among us; let every one regard himself as the steward of God in all things which he possesses. Then he will neither conduct himself dissolutely, nor corrupt by abuse those things which God requires to be preserved.[35]

It is notable that even in his application of this pre-Fall text to a post-Fall world, Calvin's principal concern is with stewardship, not with the possibility of recovering primeval knowledge to recover power over nature. Calvin knew that the great challenge for Man was the struggle to re-form the mind, the will, and the heart so as to enable righteous obedience, not the pursuit of power. This is radically different from the aims of Bacon, whom Lewis credits as believing that "The true object is to extend Man's power to the performance of all things possible. He [Bacon] rejects magic because it does not work, but his goal is that of the magician."[36]

Lewis ends this paragraph with a wonderfully wise observation about the dynamics of social and cultural movements, and a final assessment of the fate of science:

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[34] Jeremy Cohen, *"Be Fertile and Increase, Fill the Earth and Master It": The Ancient and Medieval Career of a Biblical Text* (Ithaca: Cornell University Press, 1989), 309.

[35] John Calvin, *Genesis* (Edinburgh: Banner of Truth Trust, 1965), 125.

[36] Lewis, *Abolition of Man,* 48.

> No doubt those who really founded modern science were usually those whose love of truth exceeded their love of power; in every mixed movement the efficacy comes from the good elements not from the bad. But the presence of the bad elements is not irrelevant to the direction the efficacy takes. It might be going too far to say that the modern scientific movement was tainted from its birth: but I think it would be true to say that it was born in an unhealthy neighbourhood and at an inauspicious hour. Its triumphs may have been too rapid and purchased at too high a price: reconsideration, and something like repentance, may be required.[37]

The efficacy of movements comes from good elements, but the direction the efficacy takes often comes from the bad elements. This insight is, for me, worth the whole essay. But applied specifically to the history of science, it is of particular importance for Christians. We have, I think, been too glib in our highlighting the good elements in the advent of modern science: its belief in a knowable and good creation, its confidence in the powers of human perception and the formation of knowledge, its belief that dominion over the world was a proper human enterprise. That's all very nice, on paper. But without taking into account the obvious motivations of power that Lewis identifies and which are so palpable in the documents from the period, we will never understand the relatively swift secularization of science, the role that science has played in the secularization of the West more generally, and the deep hostility evidenced by many scientists toward Christianity. This dynamic of the coexistence of good and bad elements in cultural movements is echoed in the life of Francis Bacon. A brief biographical sketch of Bacon by Maurice Cranston prepared for the *Encyclopedia of Philosophy* ends with this paragraph:

> Bacon's manner of death was much in character. He went out one winter's day to stuff a chicken with snow to see how long the cold would preserve the flesh. He caught a cold but retired to a damp bed in the best room of a nobleman's house in preference to a dry bed in a more modest room. This led to his death from bronchitis. The debts he left were colossal. He had always lived on a grand scale, excusing his extravagance, as well as his ambition and his corruption, by saying that he needed to live splendidly to hold power and that he needed power to do good in the world.[38]

I am reminded of a remark by Marion Montgomery, that the opposite of love is not hate but power. Whenever we make doing good in the world into a grand abstraction, we run the risk of assenting to any number of bad bargains. Whenever doing good in the world is detached from the difficult project of striving to *become* good, of learning to embrace the limits that are proper to our nature and our specific vocation, we are placing ourselves in the path of judgment.

In the book of Genesis, in the chapter before that mystical realm of Egypt is first introduced, we have a sobering story about the first grand technological project, a great city and a

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[37] Ibid., 48f.

[38] *Encyclopedia of Philosophy,* ed. Paul Edwards (New York: Macmillan, 1967), vol. 1, 236.

great tower that would, in a way, immortalize the children of men. God's assessment of this noble project is not very positive: "This is only the beginning of what they will do. And nothing that they propose to do will be impossible for them." This sort of pursuit was not a way of undoing the effects of the Fall and the Curse that God could bless.

It is possible that we are now living in an auspicious hour for the reconsideration and the repentance that Lewis commended, for the reconsecration of the great gift of science. The challenges presented by environmental problems, by biotechnology, and by the sexual revolution of the late twentieth century have brought forth in the Church a new level of thoughtfulness about the meaning of the human and the relationship of the human to the rest of Creation. There is a possibility for a reorientation of science and technology, of the orderly knowing of and engagement with the cosmos, that, as Alister McGrath's book title, *The Reenchantment of Nature,* suggests, leaves room for the recognition that creation is not meaningless raw material awaiting our unlimited projects. Perhaps then we would be postmodern in a real and very constructive way.

If we regard Creation as just something to be mastered or manipulated to fulfill human desires, we lose sight of the way in which human well-being can be ordered by thoughtful engagement with Creation. When science becomes secularized, separated from faithfulness to God in Creation, then our life of fellowship with God becomes too spiritualized. And when control of nature becomes the highest vocation for human beings, a vocation honored in social, political, and economic structures, then will is easily regarded as the most important of human attributes, and human willing the most important force in the cosmos.

In his book, *Resurrection and Moral Order,* Oliver O'Donovan insists that our dominion over creation is not that of a godlike being outside of creation, but of a steward placed in a Garden to tend and keep it. And that implies boundaries to our wills: "Man's monarchy over nature can be healthy only if he recognizes it as something itself given in the nature of things, and therefore limited by the nature of things. For if it were true that he imposed his rule upon nature from without, then there would be no limit to it. It would have been from the beginning a crude struggle to stamp an inert and formless nature with the insignia of his will. Such has been the philosophy bred by a scientism liberated from the discipline of Christian metaphysics. It is not what the Psalmist meant by the dominion of man, which was a worshipping and respectful sovereignty, a glad responsibility for the natural order which he both discerned and loved."[39]

We were created to glorify God and enjoy him forever. We do this as embodied creatures called to tend the earth and keep it, called to stewardship of God's world, creatures whose nature has been shaped to flourish within certain boundaries. The essence of sin is to deny such boundaries. And to the extent that the social project that we call "science" is committed to ignoring or denying all boundaries, that project must be condemned. As Lewis said, something like repentance is needed. Science can be, in fact should be, pursued in a way that honors God and respects our true vocation in the world; but this can only happen with a level of humility and reverence that challenges the hubris of modern culture.

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[39] Oliver O'Donovan, *Resurrection and Moral Order: An Outline for Evangelical Ethics* (Grand Rapids: Eerdmans, 1986), 52.

Appendix
The Magisterial Paragraph

"Nothing I can say will prevent some people from describing this lecture as an attack on science. I deny the charge, of course: and real Natural Philosophers (there are some now alive) will perceive that in defending value I defend *inter alia* the value of knowledge, which must die like every other when its roots in the *Tao* are cut. But I can go further than that. I even suggest that from Science herself the cure might come. I have described as a 'magician's bargain' that process whereby man surrenders object after object, and finally himself, to Nature in return for power. And I meant what I said. The fact that the scientist has succeeded where the magician failed has put such a wide contrast between them in popular thought that the real story of the birth of Science is misunderstood. You will even find people who write about the sixteenth century as if Magic were a medieval survival and Science the new thing that came in to sweep it away. Those who have studied the period know better. There was very little magic in the Middle Ages: the sixteenth and seventeenth centuries are the high noon of magic. The serious magical endeavour and the serious scientific endeavour are twins: one was sickly and died, the other strong and throve. But they were twins. They were born of the same impulse. I allow that some (certainly not all) of the early scientists were actuated by a pure love of knowledge. But if we consider the temper of that age as a whole we can discern the impulse of which I speak. There is something which unites magic and applied science while separating both from the 'wisdom' of earlier ages. For the wise men of old the cardinal problem had been how to conform the soul to reality, and the solution had been knowledge, self-discipline, and virtue. For magic and applied science alike the problem is how to subdue reality to the wishes of men: the solution is a technique; and both, in the practice of this technique, are ready to do things hitherto regarded as disgusting and impious—such as digging up and mutilating the dead. If we compare the chief trumpeter of the new era (Bacon) with Marlowe's Faustus, the similarity is striking. You will read in some critics that Faustus has a thirst for knowledge. In reality, he hardly mentions it. It is not truth he wants from his devils, but gold and guns and girls. 'All things that move between the quiet poles shall be at his command' and 'a sound magician is a mighty god.' In the same spirit Bacon condemns those who value knowledge as an end in itself: this, for him, is to use as a mistress for pleasure what ought to be a spouse for fruit. The true object is to extend Man's power to the performance of all things possible. He rejects magic because it does not work, but his goal is that of the magician. In Paracelsus the characters of magician and scientist are combined. No doubt those who really founded modern science were usually those whose love of truth exceeded their love of power; in every mixed movement the efficacy comes from the good elements not from the bad. But the presence of the bad elements is not irrelevant to the direction the efficacy takes. It might be going too far to say that the modern scientific movement was tainted from its birth: but I think it would be true to say that it was born in an unhealthy neighbourhood and at an inauspicious hour. Its triumphs may have been too rapid and purchased at too high a price: reconsideration, and something like repentance, may be required."[40]

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[40] C. S. Lewis, *The Abolition of Man*, 47f.