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"Relief of Man's Estate": The Theological Origins of the Modern Biomedical Project

Todd T. W. Daly

Department of Theology, Urbana Theological Seminary, Champaign, IL 61822, USA; tdaly@urbanatheologicalseminary.org

Abstract: In recent years, medicine has been increasingly described as "Baconian", in reference to the scientific methodology laid out by Francis Bacon (1561–1626), who, in criticizing Aristotle's natural philosophy, called for cultivating useful knowledge in order to eradicate disease and extend human life by attenuating aging. Contemporary medicine is often described as "Baconian" insofar as it is devoted to the relief of suffering and the expansion of choice. These two features continue to exert pressure on medicine to expand understandings of both suffering and wellness. Recent attempts to reclassify human aging as a disease, for instance, bear witness to the Baconian impulse. In this article, I discuss and critique the religious origins of Bacon's call for a new kind of practical rationality in service of improving humanity, showing that they were deeply theological and considerably informed by events recorded in the biblical book of Genesis. I will also argue that the theological nature of Bacon's program, while theocentric in nature, suffers from inattention to Christology, which challenges Bacon's theology and the Baconian Project. Attending to Christological concerns modifies Bacon's approach to bioethics, which recognizes both the fallenness of creation and the power of medicine to address the human condition, especially human aging.

Keywords: Aristotle; Francis Bacon; Baconian science; longevity; Incarnation

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1. Introduction

In recent years, medicine has been increasingly described as "Baconian", in reference to Francis Bacon (1561–1626), who, in criticizing Aristotle's natural philosophy, called for cultivating useful knowledge in order to eradicate disease and extend human life by slowing human aging. Indeed, contemporary medicine has been described as "Baconian" to the degree that it aims at relieving suffering and expanding choice. In this article, I will discuss the theology that animated Bacon's vision by examining Bacon's own writings, before offering a Christological critique, which might question contemporary attempts to attenuate human aging, while recognizing the power of medicine to alleviate suffering within Bacon's theological framework.

2. Bacon's New Program for Science

Modern thought, it has been said, began with a rejection of the Aristotelian perspective on the natural world and our understanding of it (Baillie 1951, p. 18). Francis Bacon (1561–1626) was one of the key critics of an Aristotelian natural philosophy that was devoted to cultivating a theoretical understanding (*theôria*) of nature culminating in wonder. Aristotle's contemplation had no end beyond contemplation itself, for it was rooted in the intellect—that highest element within the human creature that shares something of the divine—and was therefore pleasurable for its own sake (Aristotle 2000, 1177b, p. 195). For Aristotle, contemplation echoed the activities of the gods, and has been rightly described as a form of intellectual worship (Aristotle 2000, 1177a-b; Foster 1957, p. 34). Because he held that the cosmos was directed by a first principle—described as the unmoved mover of the cosmos or thought thinking itself—human contemplation paradigmatically consisted in

the systematic understanding of the cosmos (and nature) by referring to the cosmos's first principles and final causes (Aristotle 1984a, 1072b, line 20, p. 1695). Hence, when reflecting on the natural world and artifacts, Aristotle held that a complete understanding required identifying its multiple causes. Any explanation that did not include a thing's material, efficient, formal, and final causes was insufficient for the kind of pleasurable contemplation that was its own reward. To claim to fully explain a wooden bed, for instance, by referring only to its material cause, being made of wood, without also accounting for the particular arrangement and purpose of the bed, was an inadequate description. If being made of wood were the true nature of the bed, noted Aristotle, we might expect that planting the bed in the ground would eventually give rise to another bed (Aristotle 1984b, 193b, 7–12, p. 330).[1]

To have complete knowledge of something, however, Aristotle asserted that one must account for the four causes of any artifact or thing in nature: the material, formal, efficient, and final causes (Aristotle 1984b, 194b, 16–35, pp. 331–32). These identify, respectively, the (1) material of which something is made, (2) the essence of a thing—that which makes something what it is, and not something else, (3) the source of change (or motion) or coming to rest, and (4) the purpose, or *telos*, "that for the sake of which a thing is done" (Aristotle 1984b, 194b, 33, p. 332).[2] According to Aristotle, we do not know something fully until we grasp the "why", the primary cause of a thing. Thus, a statue, for instance, may be made of bronze (the material cause) and have been shaped by a sculptor (efficient cause). The final cause of walking, for instance, is one's health; it answers the question "Why is he walking about?" (Aristotle 1984b, 194b, 34, p. 332). But for Aristotle, the study of nature also required discerning the essence of things, that is, their formal causes. The virtuous individual searched out these causes, and in so doing cultivated *theôria*, culminating in wonder. In other words, natural philosophy was a self-consciously contemplative and speculative enterprise, which entertained no thought of intervening in nature's operations (Serjeantson 2017, p. 347; Velcurio 1588).

Francis Bacon (1561–1626) found Aristotle's natural philosophy intolerable and is often credited as an instrumental figure in the development of contemporary scientific method. Bacon was neither a scientist nor a philosopher, but a lawyer and a long-serving Member of Parliament who had intense interests in natural philosophy and knowledge as a whole. The astronomer and polymath Sir John Herschel (1792–1871) credited Bacon (and Galileo) with dispelling the darkness that had eclipsed the study of nature since Archimedes (287–212 BCE). Before Bacon, "natural philosophy . . . could hardly be said to exist" (Herschel 1831, p. 105). In particular, it was the "grand and fertile principle" of inductive inquiry, which was rightly credited to "our immortal countryman Bacon" (Herschel 1831, p. 114). Certainly, Bacon's call for the cultivation of inductive knowledge was at the same time a rejection of Aristotle's rational, deductive approach. Indeed, Bacon found Aristotle's natural philosophy to be "dogmatic and magisterial", and too detached from the conditions and maladies that affect everyday life. "The philosophy of Aristotle", charged Bacon, "has laid down the law on all points . . . so that nothing may remain that is not certain and decided: a practice which holds and is in use among his successors" (Bacon 1858b, 1.69, p. 69). Instead, Bacon argued for the cultivation of *useful*, inductive knowledge to serve the interests of humanity. This inductive approach to nature occupied the middle ground between experimental observation on the one hand and mere reason on the other. Bacon likened those of the former approach, the "men of experiment", to ants who collected raw material, but only to store it up. Those of the latter group, the rationalists or "men of dogma", however (followers of Aristotle), were like spiders "who make cobwebs out of their own substance" (Bacon 1858b, 1.95, p. 93). Better to learn from the bee, said Bacon, who gathers from flowers and transforms pollen into honey. The bee utilized both the experimental and the rational, offering a way forward: "Therefore, from a closer and purer league between these two faculties, the experimental and the rational, (such as has never yet been made) much may be hoped" (Bacon 1858b, 1.95, p. 93). Specifically, Bacon hoped

that his new method would enable human beings to exercise expansive dominion over nature, uncovering all operations, both great and small (Bacon 1857b, p. 222).

Contrary to Aristotle's method of natural philosophy, Bacon asserted that the cultivation of useful knowledge required seeking out only the material and efficient causes of things. The pursuit of formal and final causes, with their focus on essence and purpose, hindered diligent inquiry into material and efficient causality "to the great arrest and prejudice of further discovery" (Bacon 1857a, 2, p. 358). To conclude, for instance, that eyelids serve as a fence for one's eyes, or that the purpose of skin is to defend internal organs against the extremities of heat and cold, is to engage in "metaphysics" (Bacon 1857a, 2, p. 358). In other words, Bacon called for an inductive pursuit of physics unencumbered by metaphysical concerns. Indeed, "the inquisition of Final causes is barren, and like a virgin consecrated to God produces nothing" (Bacon 1858f, 3.5, p. 365). As long as final causes were present in natural philosophy, they would continue to muddy the waters and hinder the development of *useful* knowledge attainable through the study of material and efficient causes alone.

In this separation of the physical from the metaphysical, we find an expression of the "two books" doctrine, the book of nature and book of God. The former was the domain of practical science and the latter concerned things divine. With this new approach, Bacon believed the book of nature could be opened, enabling humanity to discover and improve upon the operations of the world, while the book of Holy Scripture—the Bible—rightly concerned the things of God (Bacon 1857b, pp. 218–24). Though separate, these domains were not at odds with one another. "There is no such enmity between God's word and his works" (Bacon 1857a, 2, p. 486). In fact, this separation benefited *both* fields of inquiry; the establishment of boundaries was necessary, as the books of nature and of God required methods unique to each domain. Just as the pursuit of formal and final causes in natural philosophy hindered the cultivation of useful knowledge, so too anyone trying to discern the nature or will of God by inquiring into sensible and material things "shall dangerously abuse himself" (Bacon 1857b, p. 218). While this new division between the physical and metaphysical might be described as one key development in the secularization of science, this was hardly the case for Bacon himself.

Indeed, as will become clear, Bacon's rationale for this new kind of science was grounded in his Christian faith. Though it might appear that Bacon's separation of metaphysics from physics concerned freeing up scientific inquiry from religious dogma, his primary target was the dogma of Aristotle. At the same time, however, there is little doubt that Bacon's scientific program was motivated by a theological view of the world and humanity's place in it (Willey 1949, p. 29; Briggs 1996, pp. 176–77). To cite a few examples, Bacon believed his era was witnessing the fulfillment of Daniel's Old Testament prophecy, that "many shall go to and fro, and knowledge shall be increased" (Dan 12:4). Bacon believed that by his time, the world had been thoroughly traversed by voyages of exploration (i.e., many going to and fro), concluding that "the advancement of the sciences, are destined by fate, that is, by Divine Providence, to meet in the same age" (Bacon 1858b, 1.93, p. 92). His description of abandoning the Aristotelian way in favor of a humble, questioning, inductive science is suffused with religious imagery. Aristotelian thought, with its dogmatic, moribund certainty, must be cast away as an "Idol" in favor of the new inductive way, "the understanding thoroughly freed and cleansed". Drawing on Jesus' words in Matthew 18:3, Bacon described the inductive way with salvific language. Admission to both the kingdoms of man and God demanded epistemic humility: "the entrance into the kingdom of man, founded on the sciences, being not much other than the entrance into the kingdom of heaven, where-into none may enter except as a little child" (Bacon 1858b, 1.68, p. 69). Finally, in the preface to *The Great Instauration*, Bacon himself prayed to the Father, Son, and Holy Ghost, that they might "vouchsafe through my hands to endow the human family with new mercies" (Bacon 1858c, p. 20).[3] Beyond these occasional references, however, Bacon's program was grounded in a theological history framed by the creation, fall, and the promised return of Christ. His arguments for a new scientific methodology

assumed that humanity's power and sovereignty must be *recovered*, as these were forfeited by Adam in the Garden of Eden. Bacon's call to use science to "relieve man's estate" was to regain paradise.

Bacon's Theological Milieu

Though Bacon's call for a new scientific methodology involved disentangling metaphysics from physics in investigating nature, he nevertheless situated science within a Christian framework, which provided a *telos* to guide inquiry. As will be shown, much hinges on Bacon's reading of Genesis and a theology that was at odds with that of Aristotle. As we consider Bacon's theological understanding and how it informed his new science, it will be useful to briefly consider the theological milieu that enabled Bacon to argue for a restoration of the power and sovereignty first enjoyed by Adam before the fall. Here, the Protestant Reformation impacted Bacon's thought in several ways. In particular, Bacon was working with a doctrine of God and God's relationship to the created order that differed from Aristotle's god (Baillie 1951).[4] Specifically, God's free decision to create and preserve a world entirely dependent on God's wisdom and will while simultaneously remaining utterly distinct from the world, opened up conceptual space for interpreting creation on its own terms. As T. F. Torrance (1913–2007) has noted, "God has kept the Godward side of nature hidden, that is, He has kept final causes or the ultimate law of nature 'within His own curtain,' [quoting Bacon] but whatever is not-God is laid open by God for man's investigation and comprehension" (Torrance 1969, p. 69; Bacon 1857b, p. 220). It was this separation of causes (the formal and final from the material and efficient) that motivated Bacon in "the pursuit of natural science as a religious duty" (Torrance 1965, p. 66). In addition, unlike older Greek deductive science that closely tied the divine with the natural, the Reformation emphasis on God's covenant with Adam also opened up space for humanity, as created in God's image (Gen 1:26–27; 9:6), to work with and on creation (Baillie 1951, pp. 26–29).

Another key Reformation development concerns the interpretation of Scripture. As will be shown, Bacon interpreted the Genesis creation accounts literally, reflecting Martin Luther's (1483–1546) insistence that the true sense of Scripture can be disclosed through its literal sense (Luther 1970, pp. 146, 241). Prior to the Reformation, the spiritual senses of Scripture—the allegorical, moral, and prophetic/future senses—were considered more important than the literal.[5] Natural objects in biblical stories were often treated as symbols (Harrison 1999, p. 97). For example, God's command to exercise dominion over the beasts in Genesis (1:26–28) was often internalized to stress exercising dominion and control over the unruly passions of the body. Jerome (347–420) could identify various beasts with the "irascible and concupiscible passions" (Jerome 1975, p. 11). In the West, Augustine (354–430) taught that the beasts signify the soul's affections, and that the body's unruly impulses are "animals" that can be trained to serve reason when restrained (Augustine 1991, 13.21, p. 291). As Peter Harrison (1999, p. 91) has observed, God's command to subdue and rule in Genesis 1 "was frequently interpreted by the church fathers to mean dominion over the rebellious beasts within", whether lust, or other fleshly appetites". But the Reformation privileged the literal interpretation of Scripture, allowing Bacon to interpret Adam's original state and fall literally. A literal reading of the Bible helped generate a natural or immanent reading of nature (Spencer 2023). Exercising dominion was no longer about *self*-control but the control of *things*. Hence, in the hands of the Protestant Reformers, "the biblical narratives of creation and Fall . . . cannot be read other than enjoining upon the human race the necessity of re-establishing its dominion over nature" (Harrison 1998, p. 208). This contextual background helps illuminate the theology behind Bacon's call for science to "relieve man's estate", which relied heavily on the opening chapters of Genesis.

3. The Theology behind Bacon's Arguments

3.1. Prelapsarian Adam as Proto-Scientist

At the core of Bacon's argument for a new kind of science to relieve suffering was the doctrine of the fall, namely, that Adam's sin (Genesis 3) had adversely affected both humanity and nature. The fall served as the backdrop to Bacon's program of restoring humanity, as much as was possible, to its original state, where Adam had a "reasonable soul" in innocence, freedom, and sovereignty (Bacon 1859a, p. 221). While the theme of human sovereignty over creation was hardly unique to Bacon, his interpretation of how this sovereignty was to be exercised was unique.

From the beginning, Bacon depicted Adam and Eve as investigators of nature's laws as established by God. Proverbs 25:2 figured prominently in his understanding of Genesis: "It is the glory of God to conceal a thing, but it is the glory of the King to find it out" (Bacon 1857b, p. 220). Prelapsarian Adam and Eve were portrayed as proto-scientists whose God-given (Gen 2:15) work consisted in contemplation. However, Bacon described this contemplation as seeking out the laws of nature through "exercise and experiment", not out of necessity or as an act of labor, but as a "matter of delight in the experiment" (Bacon 1857a, 1, p. 296). Specifically, Adam's power was visible in the acts of identifying and naming the animals (Gen 2:19–20), for to name something was to exercise power over it—not as a mystical incantation—but in identifying a creature's true function and use (Bacon 1858b, 2, p. 120; Bacon 1857b, p. 239). Adam's activity here is akin to Bacon's understanding of formal causes as investigating the essence of a thing (Matthews 2017, pp. 61–62). All of these activities would have been carried out with ease had the first couple continued to obey God. Creation was not yet the object of God's curse (Gen 3:14–19) and would have yielded up her secrets with very little effort without, however, any need to put such knowledge to practical use. But the nature and purpose of this work would change after Adam and Eve sinned against God.

3.2. The Fall and Knowledge

By transgressing God's explicit command not to partake of the fruit of the tree of knowledge of good and evil (Gen 2:16–17), incomprehensible as this decision was, Adam and Eve forfeited both their innocence and their dominion over nature. Though the fall disrupted human fellowship with God and with one another, Bacon was primarily interested in humanity's relationship with nature. While human understanding was now "depraved by custom and the common course of things", Bacon did not think the mind to be irreparably damaged by sin, but capable, with the correct method, of uncovering nature's workings.[6] The loss of dominion over nature had more to do with God's curse on nature than on the depravity of the mind or a loss of innocence. Rather, he interpreted God's curse as a partial revocation of nature's laws as originally established by God (Bacon 1859a, p. 221). Though humanity fell both from innocence and 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. For creation was not by the curse made altogether and for ever a rebel, but in virtue of that charter "In the sweat of thy face shalt thou eat bread [Gen 3:19]", it is now by various labours . . . at length and in some measure subdued to the supplying of man with bread; that it, to the uses of human life. (Bacon 1858b, 2.52, p. 248)

Bacon thus read God's denouncement as a *divine charter*. Though the fall occasioned this twofold loss of innocence and dominion, *both* could be partially recovered by religion and sciences, respectively.

3.3. The Great Recovery

Bacon set forth his vision for the renewal of creation in *The Great Instauration*—a term used in the Vulgate to describe both the rebuilding of the temple following Babylonian captivity (2 Kings 12:2) and Christ's activity of summing up all things in himself (Eph 1:10).[7] He believed that cultivating useful knowledge through inductive science would enable

humanity to return to the Garden of Eden, described as "a restitution and reinvesting (in great part) of man to the sovereignty and power . . . which he had in his first state of creation" (Bacon 1857b, p. 222). The Bible contained not only instructions for recapturing innocence, but also supplied the grounding and vision not simply to read nature but to also *interrogate* it, to "put the question to nature" (Tovey 1952, p. 573; Foster 1957, pp. 56, 58). This was not, contrary to some divines, a prideful or exploitative venture (Willey 1949).[8] In his *Valerius Terminus*, Bacon insisted that "*all knowledge is to be limited by religion, and to be referred to use and action*" (Bacon 1857b, p. 218). He explicitly rejected imposing any human ideal or template on nature. "God forbid", declared Bacon, "that we should give out a dream of our own imagination for a pattern of the world" (Bacon 1858c, pp. 32–33). For in relying on our own ideals, "we create worlds, we direct and domineer over nature, we will have it that all things *are* as in our folly we think they should be, not as seems fittest to the Divine wisdom" (Bacon 1858d, p. 132). Indeed, to reshape nature according to human desire would inevitably *distort* man's interpretation of nature and perpetuate the transgression of Adam and Eve (Bacon 1858d, p. 132).[9] The end to which this new inductive knowledge was to be put, as mentioned earlier, was human sovereignty, human power. But for Bacon, this power was to be directed by love.

The phrase "knowledge is power" is an oft-cited, and not entirely inappropriate, description of Bacon's program; however, it fails to fully capture Bacon's thought (Bacon 1859b, p. 253).[10] The pursuit of useful knowledge, as we have seen, was to be guided by religion. Drawing again on the language of "charter", Bacon described this instauration as relieving the condition of humankind, ever-aware, however, of the seductive power of the very knowledge by which the human estate could be redeemed:

> But yet evermore it must be remembered that the least part of knowledge passed to man by this so large a charter from God must be subject to that use for which God has granted it; which is the benefit and relief of the state of society and man; for otherwise all manner of knowledge becometh malign and serpentine, and therefore as carrying the quality of the serpent's sting and malice it maketh the mind of man to swell; as the scripture saith excellently, *knowledge bloweth up, but charity buildeth up* [1 Cor 8:1]". (Bacon 1857b, pp. 221–22)

Echoing the Apostle Paul's encomium on love (1 Cor 13), Bacon rejected any notion of "both power and knowledge such as is not dedicated to goodness or love" (Bacon 1857b, p. 222). Such love was "goodness put in motion" (Bacon 1857b, p. 217). Notably, Bacon's vision of this instauratio was both expansive and exhaustive; the increase in practical knowledge would range from "a discovery of all operations and possibilities of operations from immortality (if it were possible) to the meanest mechanical practice" (Bacon 1857b, p. 222).[11] Once again, Bacon's call for a new kind of science was aimed at interrogating fallen nature in order to restore what was lost through sin. Insofar as it was an activity to be guided by love (charity) and humility in "relieving man's estate", his program had implications for the practice of medicine.

3.4. Bacon and Medicine

Bacon believed that his new inductive, experimental form of science could make significant progress against the conditions of fallen, bodily existence, which was marked by various diseases and maladies that shorten life. He argued that medicine was in desperate need of an infusion of useful knowledge, being a science "more professed than laboured, and yet more laboured than advanced" (Bacon 1858f, 4.2, p. 383). Indeed, it often did more harm than good, and failed in exercising any kind of sovereignty over the body. Those who did express confidence in medicine were of "a vain and flattering opinion" (Bacon 1857a, 2, p. 377). He railed against those who too readily pronounced a disease "incurable" and hoped to stir up eminent physicians to take up this work (Bacon 1858f, 4.2, p. 387). Bacon hoped that the expansion of practical knowledge would lead to cures for diseases previously thought to be incurable, bringing longer life in its wake.

But Bacon was not content with merely curing disease; he also called for an expansion of medicine to include inquiry into the human aging process itself in order to greatly extend life. Here, we find an early expression of concern over death by aging, which is increasingly considered a problem for modern medicine. Bacon was no less critical of physicians for their lack of interest in trying to understand the processes of human aging itself. "But the lengthening of the thread of life itself, and the postponement for a time of that death which gradually steals on by natural dissolution and the decay of age", asserted Bacon, "is a subject which no physician has handled in proportion to its dignity" (Bacon 1858f, 4.2, p. 383). Were physicians to devote themselves to slowing aging, they would see themselves as "instruments and dispensers of God's power and mercy in prolonging and renewing the life of man" (Bacon 1858a, p. 215). Though Bacon acknowledged God's sovereignty in determining the length of life and the promise of eternal life as God's gift, he saw no theological obstacle to pursuing longevity:

> For although we Christians ever aspire and pant after that land of promise, yet meanwhile it will be the mark of God's favour if in our pilgrimage through the wilderness of this world, these our shoes and garments (I mean our frail bodies) are as little worn out as possible. (Bacon 1858a, vol. 5, p. 215)

While Bacon's writings contributed little useful knowledge into the causes of aging, his *History of Life and Death* (1623) contained his apologetic for life-extension research with expansive inquisitiveness into potential influencing factors. Following the lead of the Church Fathers Augustine and Jerome, Bacon interpreted the genealogical accounts in Genesis literally (Bacon 1858a, pp. 243–44). His unfinished *New Atlantis* (1627) was an allegory brimming with Old Testament symbolism and eschatological imagery, where scientists were described with sacerdotal language (McKnight 2006). Some have claimed that Bacon was discreetly obsessed with the prolongation of life (Serjeantson 2017, p. 357). Even more tempered voices acknowledge Bacon's quest to slow aging was the first and highest objective of his new program (Rees 1996), remaining a consistent theme throughout his entire corpus (Gemelli 2012). Bacon situated his call for a new kind of science by drawing on his own Christian understanding of the world. By cultivating useful knowledge through the experimental, inductive interrogation of nature, he believed that we could regain that original power and sovereignty over nature enjoyed by Adam in the garden, with the near eradication of disease and significantly longer—if not indefinite—lifespans.

4. An Assessment

Before offering a critique of Bacon's arguments for slowing human aging, the tremendous advances in medicine that have followed from his method of scientific inquiry should be acknowledged. The inductive, experimental approach to science has led to several remarkable inroads to the mitigation of disease, leading to longer, healthier life. The scorn that might follow any declaration of disease as "incurable" is a testament to Bacon's persuasive power. At the same time, however, history has shown that Bacon's program to "relieve man's estate" has thrived without the particular theological moorings that grounded Bacon's own project. The twin tenets of expanding choice and eliminating suffering have proven amenable to several metanarratives. The "Baconian Project" often serves as a shorthand notation for Promethean efforts to eliminate all forms of suffering through technology, *especially* efforts to slow human aging (McKenny 1997, p. 2), and finds its most radical expression in transhumanism. And yet, it appears that Bacon's own call for slowing aging in hopes of recovering the antediluvian lifespans of the biblical patriarchs, which spanned centuries, is no less melioristic than that of transhumanist philosophy. Indeed, some have observed that Bacon's program challenged the divinely imposed boundary of death in ways that were more pagan than Christian (Serjeantson 2017).[12] Though Bacon acknowledged the promise of the resurrection of life to come, it appears that he perceived little tension between this life and the next.

At the same time, however, it is clear that Bacon's program was theologically grounded in his particular reading of the Bible. And while he framed his new science in the context

of the metanarrative of Scripture and interpreted the fall primarily as a loss of sovereignty, his description of regaining power—understood as "goodness put in motion"—fails to consider whether there are some kinds of suffering that should *not* be treated. Bacon's program is susceptible to the same criticism often leveled against the Baconian Project, namely, that it displaces moral convictions concerning suffering and death in favor of relieving suffering (McKenny 1997, p. 21). Bacon, in effect, lumps in aging with disease as a fair candidate for scientific intervention.[13] A related corollary concerns unspoken assumptions about viewing the body as primarily an object of manipulation through the cultivation and application of practical knowledge—even as Bacon asserted that the pursuit of this knowledge was to be guided by charity for God's glory.

Bacon's interpretation of aging as a problem for science made sense in his reading of Scripture. His concepts of power and sovereignty relied on the metanarrative disclosed in the Bible and the historical context that influenced its interpretation. This is not to say that there was something necessarily wrong with his particular interpretation of power as manipulating nature in order to relieve suffering. Bacon's insistence that we interrogate nature, or "put the question to nature" in order to re-establish power over creation, is not entirely inappropriate if nature is fallen. Moreover, he was sharply critical of humanity imposing its own ideals on to creation. And yet, as Bacon framed the religious purposes for his science, questions remain concerning the nature of human aging, embodiment, and whether aging should be slowed in the name of relieving suffering. At what point, for instance, does relieving the human condition transmogrify into relieving the condition of being human? Does Bacon's theology provide any insight here?

Beyond Bacon's literal interpretation of Genesis, part of the problem may lie with Bacon's appeal to the first Adam in making his case for the great instauration. Though his depiction of prelapsarian Adam as an experimenter may reflect our seemingly limitless desire to understand nature in order to remake it, a more Christological understanding of humanity, the fall, and redemption of creation entails a consideration of the *last* Adam, Jesus Christ (1 Cor 15:45), who came to remedy the sin and death brought into the world by the first Adam (Rom 5:12–21; 1 Cor 15:45–57). Moreover, as Christian theologians and ethicists have argued, the Chalcedonain confession that Jesus Christ is God in the flesh (Jn 1:14), fully human without ceasing to be divine, presents not only the clearest picture of God, but the sharpest portrait of what it means to be human. Karl Barth (1886–1968) forcefully asserted that "the ontological determination of humanity is grounded in the fact that the one man among all others is the man Jesus" (Barth 1960, p. 132). Jesus Christ is the "Archimedean point" from which true knowledge of humanity might be established (Barth 1956, p. 117). While there are certainly no direct or formulaic moves from Christ's humanity to ours, the Incarnation is God's affirmation of creatureliness, human limitedness, and embodiment (O'Donovan 1994). Critically, Christ's humanity speaks to the appropriateness of aging and finitude; such features of human existence are appropriate to our humanity.

This is not to say that there are no theological warrants to forestall aging. For the Christian Scriptures also bear witness to Jesus' life, his acceptance of suffering even as he relieved the suffering of others, by curing disease and even bringing the dead back to life (Mk 5:35–43; Lk 7:11–17; Jn 11:1–44). And yet, Jesus Christ, the last Adam, presents an example of power and sovereignty by submitting to God and the cross (Phil 2:5–11).[14] Reflections on the person of Jesus Christ may then identify limits to projects of redemption through technology, though once again there are no clear formulaic moves from Christ to the human condition. In addition, the Incarnation underwrites the nature of embodiment and the body's role in the formation of character, offering a corrective to the contemporary Baconian discourse of easing suffering and expanding choice under the assumption that all suffering is inimical to human flourishing.

How then might a consideration of Christology change Bacon's program, particularly his goal of greatly extending the human lifespan by slowing aging? The Incarnation would at least temper the degree of commitment to such a project and perhaps expectations concerning the appropriate length of life. Insofar as the Incarnation draws attention to the

nature of embodiment and practices that are faithful to both the *goodness* and fallenness of the human body, it challenges assumptions that the body is little more than an object for manipulation, that individuals are little more than "managers of their own biology" (Brock 2010, p. 334). There are few easy answers here as slowing aging is morally ambiguous within a Christian framework. The tension between this life and the next remains. In fact, it may be that an emphasis on Christology—the last Adam—only strengthens that tension, accentuating the ambiguity. Elsewhere, I have argued that Barth's Christology offers some insights to the nature of embodiment and time as it relates to slowing aging, which serve as a corrective to Bacon's theology, without, however, definitively resolving the issues (Daly 2021, chap. 5).

The modern scientific program that bears Bacon's name has often been used as a placeholder for Promethean expressions of the human will over and against nature. The twin tenets of expanding choices and the elimination of suffering are amenable to multiple metanarratives of the good life. For Bacon, the cultivation of useful knowledge to relieve human suffering was theologically grounded in the Christian metanarrative, though focused primarily on Genesis and the first Adam. While much good has come from the inductive science that Bacon called for, his arguments for slowing aging to extend life significantly were influenced by his focus on the first Adam to the exclusion of the second, Jesus Christ. The Incarnation, then, may serve as a counterbalance to more expansive attempts to extend the human lifespan by reminding Christians that aging is appropriate to the human condition, and that some forms of suffering may preclude attaining longer life. Finally, the Incarnation invites Christians to reconsider the teleological question, asking what human bodies are *for*, before considering how medicine might be enlisted in the service and health of the body.

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Notes

1 At best, Aristotle quipped, the bed might rot and eventually produce the shoot of a tree.

2 Aristotle's teleology did not seek out a doctrine of any overarching pattern in the universe, or necessarily seek after the purpose of objects outside themselves, that is, teleology was often internal to the object.

3 Briggs (1996, p. 176) observes that "Bacon's religious metaphors seem to be more than casual exploitations of the familiar religious vernacular".

4 Cf. Baillie (1951, p. 18): "The real reason why both Bacon and Descartes broke with the authority of Aristotle was a reason of faith rather than a reason of science. . . [T]hey found themselves working with a different conception of God and of His relation to the world".

5 According to John Cassian (360–435), the fourfold interpretation of scripture included (1) the literal, (2) allegorical, (3) moral or tropological, and (4) anagogical senses. The allegorical teaches us what to believe (faith), the moral what to do (love), and the anagogical where we are headed (hope). Cf. (Harrison 1998).

6 Bacon, however, did not espouse the doctrine now known as "total depravity". There are varying perspectives on the noetic effects of sin in the Christian tradition. Admittedly, the phrase "total depravity" is somewhat misleading.

7 As Charles Whitney (1989) has noted, the Latin instauratio was usually associated with the re-establishment of religious rites.

8 As Willey (1949, p. 31) observes, "At the very outset of *The Advancement of Learning* Bacon is confronted with the mediaeval conception of natural science as the forbidden knowledge. It is objected, he says, by divines, that 'knowledge puffeth up,' that it 'hath somewhat of the serpent,' that (in a word) it was the original cause of the Fall of man".

9 Against the general suspicion the cultivation of knowledge was akin to pride, Bacon responded that Eve's sin was indeed pride, but in "over-inquiring" about *moral* knowledge—knowledge of good and evil (Bacon 1858b, 2.52, p. 248).

10 Bacon was criticizing those who claim that God's (fore)knowledge outstrips God's power.

[11] At the same time, however, Bacon (1858d, p. 47) held that nature was still controlled by God's laws, and thus posed some limits to human power. Elsewhere, he asserted that nature cannot be commanded except by being obeyed (Bacon 1858c, p. 32). Bacon also likened nature to a musical instrument in need of careful tuning (Bacon 1858e, 11, p. 721).

[12] This assessment, however, is based solely on Bacon's pseudonymous *Valerius Terminus*.

[13] Bacon (1858b) did, however, criticize the pursuit of longevity as one's ultimate goal, including those who relied on specific diets to lengthen life.

[14] This *kenosis*, or "emptying" (Phil 2:7), does not mean that Jesus Christ set aside certain divine attributes, but rather speaks of emptying by addition—Christ taking on fallen human nature.

References

Aristotle. 1984a. Metaphysics. In *The Complete Works of Aristotle: The Revised Oxford Translation*. Edited by Jonathan Barnes. Princeton: Princeton University Press, vol. 2, pp. 1552–728.

Aristotle. 1984b. Physics. In *The Complete Works of Aristotle: The Revised Oxford Translation*. Edited by Jonathan Barnes. Princeton: Princeton University Press, vol. 1, pp. 315–446.

Aristotle. 2000. *Nicomachean Ethics*. Translated and Edited by Roger Crisp. Cambridge: Cambridge University Press.

Augustine. 1991. *Confessions*. Translated by Henry Chadwick. Oxford: Oxford University Press.

Bacon, Francis. 1857a. Of the Dignity and Advancement of Learning: Bk. I–II. In *The Works of Francis Bacon*. Edited by James Spedding, Robert L. Ellis and Douglas D. Heath. London: Longman and Co., vol. 3, pp. 253–491.

Bacon, Francis. 1857b. Valerius Terminus. In *The Works of Francis Bacon*. Edited by James Spedding, Robert L. Ellis and Douglas D. Heath. London: Longman and Co., vol. 3, pp. 215–52.

Bacon, Francis. 1858a. History of Life and Death. In *The Works of Francis Bacon*. Edited by James Spedding, Robert L. Ellis and Douglas D. Heath. London: Longman and Co., vol. 5, pp. 213–335.

Bacon, Francis. 1858b. The New Organon. In *The Works of Francis Bacon*. Edited by James Spedding, Robert L. Ellis and Douglas D. Heath. London: Longman and Co., vol. 4, pp. 39–248.

Bacon, Francis. 1858c. The Great Instauration. In *The Works of Francis Bacon*. Edited by James Spedding, Robert L. Ellis and Douglas D. Heath. London: Longman and Co., vol. 4, pp. 5–33.

Bacon, Francis. 1858d. The Natural and Experimental History for the Foundation of Philosophy. In *The Works of Francis Bacon*. Edited by James Spedding, Robert L. Ellis and Douglas D. Heath. London: Longman and Co., vol. 5, pp. 131–34.

Bacon, Francis. 1858e. Of the Wisdom of the Ancients. In *The Works of Francis Bacon*. Edited by James Spedding, Robert L. Ellis and Douglas D. Heath. London: Longman and Co., vol. 6, pp. 703–64.

Bacon, Francis. 1858f. Of the Dignity and Advancement of Learning: Bk. II–VI. In *The Works of Francis Bacon*. Edited by James Spedding, Robert L. Ellis and Douglas D. Heath. London: Longman and Co., vol. 4, pp. 275–498.

Bacon, Francis. 1859a. Confession of Faith. In *The Works of Francis Bacon*. Edited by James Spedding, Robert L. Ellis and Douglas D. Heath. London: Longman and Co., vol. 7, pp. 215–26.

Bacon, Francis. 1859b. Religious Meditations. In *The Works of Francis Bacon*. Edited by James Spedding, Robert L. Ellis and Douglas D. Heath. London: Longman and Co., vol. 7, pp. 243–54.

Baillie, John. 1951. *Natural Science and the Spiritual Life*. Oxford: Oxford University Press.

Barth, Karl. 1956. Church Dogmatics. In *The Doctrine of the Word of God*. Edited by Geoffrey W. Bromiley and Thomas F. Torrance. Edinburgh: T. & T. Clark, vol. 1, Part 2.

Barth, Karl. 1960. Church Dogmatics. In *The Doctrine of Creation*. Edited by Geoffrey W. Bromiley and Thomas F. Torrance. Edinburgh: T. & T. Clark, vol. 3, Part 2.

Briggs, John Channing. 1996. Bacon's Science and Religion. In *The Cambridge Companion to Francis Bacon*. Edited by Markku Peltonen. Cambridge: Cambridge University Press, pp. 172–99.

Brock, Brian. 2010. *Christian Ethics in a Technological Age*. Grand Rapids: W. B. Eerdmans.

Daly, Todd T. W. 2021. *Chasing Methuselah: Theology, the Body, and Slowing Human Aging*. Eugene: Cascade.

Foster, Michael B. 1957. *Mystery and Philosophy*. London: SCM Press.

Gemelli, Benedino. 2012. The History of Life and Death: A "Spiritual" History from Invisible Matter to Prolongation of Life". *Early Science and Medicine* 17: 134–57. [CrossRef] [PubMed]

Harrison, Peter. 1998. *The Bible, Protestantism, and the Rise of Natural Science*. Cambridge: Cambridge University Press.

Harrison, Peter. 1999. Subduing the Earth: Genesis 1, Early Modern Science, and the Exploitation of Nature. *The Journal of Religion* 79: 86–109. [CrossRef]

Herschel, John. 1831. *A Preliminary Discourse on the Study of Natural Philosophy*. London: Longman.

Jerome. 1975. *Commentariorum in Hiezechielem*. Corpus Christianorum Series Latina, 75; Turnholti: Brepols.

Luther, Martin. 1970. The Babylonian Captivity of the Church. In *Three Treatises: From the American Edition of Luther's Works*. Translated by Albert T. W. Steinhäuser. Philadelphia: Fortress Press, pp. 113–260.

Matthews, Steven. 2017. *Theology and Science in the Thought of Francis Bacon*. London and New York: Routledge.

McKenny, Gerald P. 1997. *To Relieve the Human Condition: Bioethics, Technology, and the Body*. Albany: State University of New York Press.

McKnight, Stephan A. 2006. *The Religious Foundations of Francis Bacon's Thought*. Columbia: University of Missouri Press.

O'Donovan, Oliver. 1994. *Resurrection and Moral Order: An Outline for Evangelical Ethics*, 2nd ed. Grand Rapids: W. B. Eerdmans.
Rees, Graham. 1996. Bacon's Speculative Philosophy. In *The Cambridge Companion to Francis Bacon*. Edited by Markku Peltonen. Cambridge: Cambridge University Press, pp. 121–45.
Serjeantson, Richard. 2017. Francis Bacon's Valerius Terminus and the Voyage to the "Great Instauration". *Journal of the History of Ideas* 78: 341–68. [CrossRef] [PubMed]
Spencer, Nicholas. 2023. *Magisteria: The Entangled Histories of Science and Religion*. London: Oneworld.
Torrance, Thomas F. 1965. *Theology in Reconstruction*. Grand Rapids: W. B. Eerdmans.
Torrance, Thomas F. 1969. *Theological Science*. London: Oxford University Press.
Tovey, George V. 1952. Toward a New Understanding of Francis Bacon's Reform of Philosophy. *The Philosophical Review* 61: 568–74. [CrossRef]
Velcurio, Johannes. 1588. *Commentariorum libri iiii in Universam Aristotelis Physicen*. London: George Bishop.
Whitney, Charles. 1989. Francis Bacon's Instauratio: Dominion of, and over, Humanity. *Journal of the History of Ideas* 50: 371–90. [CrossRef]
Willey, Basil. 1949. *The Seventeenth Century Background: Studies in the Thought of the Age in Relation to Poetry and Religion*. London: Chatto and Windus.