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THE GOSPEL OF EVE:
FRANCIS BACON, GENESIS, AND THE *TELOS* OF MODERN SCIENCE

ABSTRACT:

At the dawn of the scientific revolution, Francis Bacon declared its goal: to recover the estate of Adam and restore man's prelapsarian dominion over nature. Bacon's analogy makes little sense as a rationale for scientific inquiry, however, since Adam's distinguishing virtue in the opening verses of Genesis was his incurious obedience. The animating spirit of science has always been the impudent curiosity of Eve, who conversed with the serpent and dared, in defiance of the threat of death, to taste the fruit from the Tree of Knowledge. As we apply the fruits of scientific inquiry to the creation of new technologies, this contrast between the mythical mother and father of our species takes on a fatal significance. If we aim to recover the estate of Adam, we put science in the service of an incurious domination of nature that will end in catastrophe. Conversely, when we follow the example of Eve, we engage in a dialogue with nature inspired by that transcendent curiosity which Einstein identified as 'the cosmic religious sense.' Informed by this ethos, the sustaining goal of science is not to master nature or banish death, but to deepen our understanding of nature, and our engagement with life.

The name and logo of Apple, Inc. were first inspired by Steve Jobs' fruitarian diet, and his desire for a moniker that would be "fun, spirited . . . and get us ahead of Atari in the telephone book." (Isaacson 2011: 63). In spite of its humble beginnings, the Apple trademark [Figure 1] would become one of the most recognized corporate logos on earth before the end of the twentieth century (Klara 2011). Whatever its original intent, the silhouette of an apple marked by a single bite is an image that draws more than a little bit of its power from a tacit invocation of the Genesis tale. It may seem fitting that an image connoting the forbidden fruit of the Tree of Knowledge would become one of the most recognized icons of the information revolution, but it should not be surprising. In the earliest days of the scientific revolution in the seventeenth century, the myth of Adam and Eve provided ample inspiration to Sir Francis Bacon [Figure 2] and to the founders of the Royal Society, as they attempted to promote the advancement of scientific research on a scale that they believed would transform the world. For Bacon, the ultimate goal of scientific research was nothing less than to restore the full dominion over nature that Adam enjoyed before the Fall of Man. In the twenty-first century, as a global ecological crisis compels us to reevaluate the Baconian dream of subjugating nature, we must also reexamine the religious tropes that he employed to justify that dream. In particular, the story of Adam and Eve offers two quite distinct models of scientific inquiry, which entail radically different ways of thinking about nature.

Bacon's name is often associated with his conviction that knowledge is power, and with his determination to systemize the acquisition of nature's well-kept secrets for the central purpose of attaining power over nature. This description of Bacon is largely accurate, but it is also colored by the spectacular success of state-sponsored research programs, such as the Royal Society of London for the Improvement of Natural Knowledge, that Bacon never lived to see. It is worth remembering that in Bacon's time his proposals for state-sponsored scientific research were rejected repeatedly by the courts of both Elizabeth I and James I, as well as by such esteemed confidants as the pioneering Oxford scholar Sir Thomas Bodley. Even when the realm was in imminent danger, as when England faced the threat of invasion by Spain in the late sixteenth century, royal authorities were more likely to entertain the mystical promises of alchemists who claimed that they could fill the coffers of the treasury with gold than to hear Bacon's pleas for funding methodical experimentation to advance the applied sciences (Farrington 1963: 34-40).

Bacon knew that his vision of scientific research would only take flight after he had effected a fundamental change in the way his own generation or a future generation saw the world. Bacon proved equal to this task. Though he could only speculate about the power of science to transform the world, he knew from experience about the power of

metaphors to transform the thinking of his fellow human beings. Bacon's experimentation with every metaphor at hand to advance his cause is testament to both his imagination and to his rigorous empiricism. From the literature of sixteenth century England, he took the template of Thomas More's *Utopia*, tore out its ruminations about the abolition of private property, and replaced it with vision of an island kingdom committed to state funded research and the production of useful technologies. This new utopia, which Bacon described in the *New Atlantis*, promised to solve the problem of destabilizing poverty not by cutting the pie into more even slices, but by expanding it indefinitely through science and technology. Though this was a manuscript that he did not live to finish, the vision that he sketched in this fantastic traveler's tale has lost none of its power. Observing contemporary discussions about the transformation of nature, the historian of science Rosalind Williams has argued that the phrase 'human empire,' which Bacon coined in the *New Atlantis*, remains at least as descriptive as any neologisms such as the 'Anthropocene' (Williams 2013: 18).

In addition to stealing a trope or two from Thomas More, Bacon reached back further and ransacked the classical world in search of handy metaphors. From the Romans he took the idea of the *instauratio.* This was the practice of beginning a great enterprise again after consulting with the oracles, and it furnished the title for Bacon's work *The Great Instauration*, in which he argued that the pursuit of knowledge required a new beginning based not on textual authority but on the direct study of nature. From the classical tradition, Bacon borrowed with abandon, reinterpreting the stories of Daedalus, Atalanta, Diomede, and Proteus, among many others to illustrate both the ethos and the enormous rewards of scientific research. As he attempted to persuade elites in Renaissance England to invest in empirical research, Bacon knew that classical mythology would hold a strong appeal for his audience. In 1609, he published *The Wisdom of the Ancients*, "directly interpreting eleven of the thirty-one fables in terms of newly emergent science" (Pesic 1999: 83).

It was in the Bible, however, that Bacon found the most enduring metaphors, and those with the greatest potential to lend religious and political legitimacy to his cause for the broadest possible audience. In 1611, the King James Bible made the story of creation as depicted in Genesis more widely available to ordinary English speakers than it had ever been before. As literacy grew steadily in England and its colonies over the course of the next three centuries, it would be this depiction of Adam and Eve that would become the most widely referenced, not only in religious contexts, but also in popular culture. For generations, cultural conservatives have cited Genesis as a stable model for the divinely sanctioned relationship between men, women, and nature. There is some irony in this. Like the earliest forms of matter described by the Big Bang theory, this text is highly unstable. In its first reference to the creation of the sexes, Genesis 1:27 states, 'So God created man in his own image, in the image of God created he him; male and female created he them.' Some seventeenth-century commentators used this language to fashion the intriguing argument that Adam was originally a hermaphrodite, but the third person plural pronoun here clearly denotes two individuals, one male, one female, each 'in the image of God.' Several verses later, a more patriarchal narrative emerges. Woman, having been created in the first chapter of Genesis in the image of God, is somehow

created again in the second chapter, this time out of Adam's side. Identified as 'woman, because she was taken out of man,' in Genesis 2:23, she is relegated to a lesser status, even before her encounter with the serpent and the Tree of Knowledge.

As a sort of junior partner to God, Adam is deputized before the Fall to rule all of creation and to assign the correct name to every living thing on earth. Because his ability to name his fellow creatures and his God-given right to exercise dominion over them go hand in hand, his naming of woman underlines his tacit dominion over her. After the Fall, he will name her again, calling her 'Eve' for the first time. Adam's vocation for naming the elements of creation, including his helpmate, was seen as the earliest example of an activity resembling science depicted in the Bible. In a primeval antecedent to the *Systema Naturae* of Linnaeus, Adam attempts to bring order to the chaos of nature by dividing all he sees into a set of clear and namable categories.

The idea of an Adamic language assigning an unequivocal and correct name to everything in nature continued to inspire natural philosophers during the seventeenth and eighteenth centuries and was cited by Linnaeus himself as a model for his elaborate taxonomy of living things (Fara 2003: 29). A decade after his death in 1778, the Linnean Society was formed to "carry on his botanical work in the same mingled spirit of Christian reverence, natural piety, and practical enterprise" (Worster 1994: 33). Since the Darwinian revolution, we have become accustomed to thinking of the natural sciences and the Genesis tale as being diametrically opposed, but this obscures a key ancestral trait that they share. The power to name things, supported by the claim that those names are unambiguously accurate, would become essential to the political and social authority of science in the modern age.

When Bacon alluded to Genesis, he invited readers to contemplate the position of complete ease and dominion over nature that Adam and Eve enjoyed before the Fall, and he promised that through the methodical and empirical study of nature, it would be possible to attain that state once again. Playing on the old proverb that 'truth is the daughter of time' Bacon promised that the new form of knowledge derived from scientific research would be the 'son of time' or *Temporis Partus Masculus* or 'the male birth of time' (Farrington 1963: 31). Although Bacon did not live to see the founding of the Royal Society in 1660, he was credited by its founders as their chief inspiration. As if to affirm Bacon's vision of methodical science as 'the male birth of time,' no woman would be admitted to the ranks of the Royal Society until the spring of 1945 (Ogilvie and Harvey 2003: 804).

The second half of the twentieth century saw a gradual rise in the number of women recognized for their scientific work, and it was also during this period that Bacon's framing of scientific inquiry as a tool for the domination of nature would become subject to growing criticism from a wide array of scholars. A passionate rejection of Bacon's stated goal in *Novum Organum* of 'the dominion of the human race itself over the universe' was articulated by such Frankfurt School critics as Max Horkheimer and Theodor Adorno in the late 1940s, and further developed by Carolyn Merchant and the founders of the eco-feminist movement in the 1980s and '90s. These authors presented a

bold critique of Bacon's approach to science, but they tended to conflate Bacon's shortcomings with a broader sense of despair about what science itself had become in the twentieth century, condemning it as a cultural construct tied to the power of patriarchy and colonialism. In his book, *The Serpent's Gift,* the noted scholar of religious studies Jeffery Kripal points to the constricting nature of this constructivist approach to knowledge: 'If Kant's Enlightenment shouts 'Dare to know!' the motto of postmodernism sometimes becomes 'How dare you know!'' As this postmodern critique of science has gained ground, Kripal observes that 'Knowledge has in effect become a form of evil, a sin, and the petty God of Genesis is now joined by the petty gods of every other religion and culture in a desperate attempt to keep us all locked in a thousand premodern gardens of imagined ethnic, religious, and political purity.' Alluding to the violence spawned by religious fundamentalism, Kripal muses that he 'can think of few worlds more dangerous than this one' (2007: 10).

If we are disturbed by the excesses of anti-rational rhetoric and violence in our own time, we must not forget that much of it has come as a reaction the purportedly rational rhetoric and violence of the mid-twentieth century. In the Cold War decades, the horrors of American war in Vietnam and the mad logic of the nuclear arms race made the pretensions of technocracy a natural target for cultural critics of all stripes. Unfortunately, the crucial distinction between the blithely optimistic *scientism* that colored the rhetoric of both state propaganda and corporate ad copy in the mid-twentieth century and the inquisitive practice of *science* itself was often lost in the mix. As a practicing scientist, Rachel Carson, was thoroughly prepared to highlight this distinction. When Robert White-Stevens, the glib spokesman for American Cyanamid donned a white lab coat and told television viewers in 1962 that 'the modern scientist believes that man is steadily controlling nature' Carson was able to expose his argument as scientifically unsound (Des Jardins 2010: 286). White-Stevens had attempted to portray Carson as a hysterical woman and an enemy of modern science, but she responded with a calm analysis of the environmental impact of DDT and other chlorinated hydrocarbons that was well supported by peer-reviewed research. Though she could write like a poet, her strategy for combatting corporate pseudo-science about the 'control of nature' was to rebut it with the most current science about the complexity of ecological systems (Lear 1997: 447-452).

In subsequent decades, such appeals to the authority of scientific research were undermined by a growing tendency to conceptualize the enterprise of science itself as little more than a cultural construct. However, as long as one is careful to make the distinction between the practice of science and the rhetoric of science, it is possible to discern what is valuable in both the cultural critique of Western science that gathered so much force in the late twentieth century, and in the practice of science itself. Carolyn Merchant's *Reinventing Eden* shines a bright light on how Christian ideas about divinely sanctioned patriarchy and man's dominion over nature shaped the evolution of Western science from the seventeenth century through the twentieth (2003). On the other hand, the value of scientific inquiry in advancing the cause of gender equality has been wonderfully illustrated in Kimberly A. Hamlin's book *From Eve to Evolution*. Tracing the parallel histories of science and feminism in the late nineteenth century, Hamlin explores how the advent of Darwinian evolution provided new leverage for feminists in

the United States in their struggle to attain equal rights for women, precisely because it eroded the credibility of arguments, rooted in traditional interpretations of the Genesis story, that women must be subservient to men (2014).

What is missing from the conversation about science and Genesis to date is a discussion of how the story of Eve exemplifies the audacity of science at least as much as the oft-told tales of Prometheus and Faust. When the pathfinding scientist Marie Curie named her younger daughter Eve, perhaps she was thinking of this connection (Quinn 1996: 211). For the most part, however, the parallels between Eve's experiment and experimental science has been overlooked, even among feminists who are committed to challenging traditional interpretations of Genesis. The celebrated 1970s feminist slogan 'Eve Was Framed' illustrates this oversight [Figure 3] (*LIFE*, August 13, 1971). Even as it rejects the old argument that Eve was responsible for the 'Fall' of the human race, this declaration fails to question the premise of the Fall itself. The arguments presented by Carolyn Merchant in *Reinventing Eden* are more nuanced, but do not quite escape this confining assumption. In chapter three of *Reinventing Eden*, Merchant points to Lucas Cranach's 1526 painting *Adam and Eve* [Figure 4] as yet another image that 'made Eve responsible for the loss of Eden' (2003: 53). In the last chapter of *Reinventing Eden*, Merchant finds a hopeful alternative to such narrative imagery in the 1990 painting *Adam & Eve* by Teresa Fasolino [Figure 5] in which 'both humans hold the apple; the snake is absent' (2003: 242).

The contrast between these two images illustrates the pitfalls of attempting to bowdlerize the Genesis story in the name of feminism, or any other cause. Cranach's painting revels in the tension between what Eve already knows – and what Adam does not know yet – as the serpent hovers over both of their heads. In Fasolino's painting there are ample good intentions, but all of the dramatic tension has been drained away by the artist's removal of the serpent and revision of the narrative. This is a great loss. The serpent is essential to the power of this story, as is the fact that one human being, Eve, made a choice to converse with the serpent and taste the fruit of knowledge in defiance of both divine authority and the authority of Adam.

Embracing Eve's quest for knowledge, rather than denying or diluting her choice, could well lead to a new instauration, not only for the cause of gender equality, but also for science itself. According to the founders of the Royal Society, the supreme model of science was not the subversive curiosity of Eve, but the obedient and practical cataloging of things practiced by Adam. Adam did not speak to any of the animals in Eden, as Eve notoriously did, but named them and ordered them. As the Anglican cleric and cofounder of the Royal Society Thomas Sprat declared:

> This was the first service which Adam perform'd to his *Creator*, when he obey'd him in mustering, and naming, and looking into the *Nature* of all his *Creatures*. This had been the only *religion*, if man had continued innocent in *Paradise*, and had not wanted a redemption (Almond 1999: 36).

In other words, Adam's subordinating approach to nature, exemplified by his naming the animals in Genesis, was exalted over Eve's inquisitive approach to nature, exemplified by her conversation with the serpent. To invert this order by honoring Eve's style of inquiry is not to privilege a 'feminine' as opposed to a 'masculine' epistemology. Rather, it is to privilege a receptive as opposed to a domineering approach to nature, predicated on wonder and engagement rather than ownership and control.

For Bacon, as he attempted to sketch the potential of science in the early seventeenth century, it was paradoxically necessary for men to understand nature before they could dominate it. In one of his more widely cited remarks on the subject of experimentation, Bacon seems to present the process of investigating nature as indistinguishable from the process of dominating it when he observes in *The Great Instauration* that, "the nature of things betrays itself more readily under the vexations [*vexationes*] of art than in its natural freedom" (Pesic 1999:88). In other texts, however, Bacon points to a paradoxical tension between learning the laws of nature and applying those laws to the control of nature. His shortest and most memorable example of this paradox is his declaration in *Novum Organum* that "Nature, to be commanded must be obeyed" (Peltonen 1996:182) Nonetheless, once humanity possessed the necessary practical knowledge, there would be no real limit to its power. Bacon's stated goal in *Novum Organum* was nothing less than 'the dominion of the human race itself over the universe (McKnight 2006: 97).' The environmental historian Donald Worster has observed that, "In the Baconian ideology, by a startling yet clear progression, the good shepherd of Christian tradition had become a scientist and technocrat. Science offered the means for building a better sheepfold and creating greener pastures" (Worster 1994: 30). This goal of controlling nature, though originally framed in religious terms was easily secularized. In the mid-nineteenth century, the young nihilist depicted in Turgenev's *Fathers and Sons* expresses a thoroughly secular version of Bacon's idea when he declares proudly, "Nature is not a temple but a workshop, and man's the workman in it" (Turgenev [1862] 1965: 116).

Whether it is framed in religious or secular terms, Bacon's goal of controlling nature has become increasingly untenable in both theory and practice. If we think about this goal in light of more recent scientific discoveries such as Darwinian evolution and Heisenberg's uncertainty principle, Bacon's rhetoric appears not merely megalomaniacal but more than a little bit absurd. How can a species that is a product of nature 'control' the very processes of nature from which it has emerged? And even if such a goal made sense, how could human beings, given the role of contingency and complexity inherent in every natural process, even begin to plan a strategy for the control of nature? Bacon's ambition for the role of experimental science in human history was bold in its expression and unprecedented in its ambition, but very little of what he wrote about nature was based on a solid understanding of science, even by the standards of the seventeenth century. Francis Bacon was wrong about the major scientific questions of his time, rejecting the Copernican revolution and dismissing the groundbreaking magnetic research of his fellow Englishman William Gilbert as something akin to medieval alchemy (Ferris 2011: 46). Furthermore, while other pioneers of science, such as Giordano Bruno and Galileo,

made history by defying authority, Bacon was careful throughout his career to cultivate the best possible relations with both the court and the clergy of the Church of England. The science he envisioned would be both sponsored by state authority and accountable to it, a value reflected in the very name of the institution he inspired, i.e., The Royal Society.

In his own reflections on the *telos* of science, Albert Einstein took a very different approach from the founders of the Royal Society, and one that was much closer to the example set by Eve than by Adam. Einstein defined a sense of wonder about nature not as an expression of the will to power but as a manifestation of what he called 'the cosmic religious sense.' Seeking knowledge about nature was a divine calling, but one that would necessarily defy the canons of established religion. Einstein observed that:

> The religious geniuses of all times have been distinguished by this cosmic religious sense, which recognizes neither dogmas nor God made in man's image. Consequently there cannot be a church whose doctrines are based on the cosmic religious experience. It comes about, therefore, that precisely among the heretics of all ages we find men who were inspired by this highest religious experience; they often appeared to their contemporaries as atheists, but sometimes also as saints. Viewed from this angle, men like Democritus, Francis of Assisi, and Spinoza are near to one another (Einstein 1931: 49).

Einstein's celebration of radical curiosity contains an implicit warning that none of this is for the faint of heart. Contrary to Bacon's promise, the pursuit of fundamental knowledge about the cosmos and about ourselves cannot be a path to the stability and ease that Bacon had imagined as the restored estate of Adam.

Einstein's own life presents a wonderful example of the instability inherent in scientific exploration. Resisting the randomness implicit in quantum physics, he famously protested to Niels Bohr that he would 'never believe for a single moment' that God 'plays dice' with the universe (Dukas 1979: 68). However, Einstein lived long enough to see Bohr's interpretation emerge as the dominant paradigm in physics while his own attempts at a unified field theory had all come to naught. Though the direction of twentieth-century physics had not led toward the stable model that Einstein had preferred, the quest itself remained everything to him. In the last year of his life he wrote that he had never believed in a personal God, but that, 'If there is something in me which can be called religious it is the unbounded admiration for the structure of the world so far as our science can reveal it' (Dukas 1979: 43). Although some of Einstein's discoveries about the nature of matter proved essential to the advent of nuclear weapons, this was a part of his legacy that caused him anguish and deep sense of responsibility rather than pride (Rowe and Schulmann 2007: xxix). His approach to science had little in common with the Baconian project of studying nature in order to control it. Einstein's driving motive was a personal admiration for the beauty of the cosmos, even when its elusive nature had defied his most cherished expectations.

By the second half of the twentieth century, it became apparent to many that the Baconian project of mastering nature was not only wrongheaded, but profoundly dangerous. As a scientist herself, Rachel Carson rejected the philosophy of controlling nature not as patriarchal but as scientifically unsound. In *Silent Spring*, Carson declared, 'The 'control of nature' is a phrase conceived in arrogance, born of the Neanderthal age of biology and philosophy, when it was supposed that nature exists for the convenience of man' (Carson 1962: 297). And yet, more than half a century after Carson published *Silent Spring*, it appears that we have not quite escaped 'the Neanderthal age of biology and philosophy' as schemes for the control of nature continue to proliferate. While transhumanist enthusiasts such as Ray Kurzweil dream of engineering eternal life for those who can afford to augment their brains and bodies, other cultural provocateurs such as Stewart Brand make the case for deliberately engineering our climate (Kurzweil 2005; Brand 2009). While Kurzweil and Brand exhibit ample and intelligence and declare their good intentions, both of these fantasies spring from a Baconian mindset in which the will to knowledge and the will to power are essentially indistinguishable. Against such notions of an air-conditioned planet peopled by immortal cyborgs, Eve's dialogue with the serpent and her pursuit of knowledge for its own sake offer a welcome counter-narrative.

To praise Eve's pursuit of knowledge for its own sake, however, raises this question: What kind of knowledge did the first woman unlock? Because Eve's punishment is tied to sex and reproduction (i.e., Eve's 'curse' in Genesis 3:16 '…in sorrow thou shalt bring forth children; and thy desire shall be to thy husband, and he shall rule over thee.') Kripal holds the position that this knowledge was probably sexual in nature. On the other hand, Milton's *Paradise Lost* depicts Adam and Eve as both innocent *and* sexual before the Fall. After they both taste the fruit they are aware of their nakedness and their sex takes on a new nature that Milton describes as sinful. No doubt the expansion of consciousness engendered by tasting the fruit from the Tree of Knowledge would change the experience of sex, but only because it would change the experience of virtually everything. On a fundamental level, Eve's experiment was nothing more than to choose heightened awareness over placid ignorance. The same choice still hovers before us in the present, fraught with the same risks Eve faced as she listened to the serpent and plucked the fruit from the tree.

For millennia the power of the Genesis story has been its claim to explain the origin of virtually everything, from sex to death to agriculture. It is very likely of course that human beings had already discovered sex, death, and agriculture long before anybody began to tell this tale. So the better way to think about the Eve story is not as a work of history but as an extraordinarily powerful work of literature. Among the vast tribe of the literal-minded, which includes both militant atheists and reactionary fundamentalists, it is a great demotion for any story to pass from the realm of history to literature. For those who understand, as Bacon did, the extraordinary power of metaphors, this is not a demotion for the Eve story, but a considerable promotion. History is the story of things that only happened once. Great literature tells us the story of things that happen all the time, forming part of the human condition. This is precisely what the

Genesis tale is. Again and again in human affairs, we struggle to create some sort of order out of chaos, and when we do we seek to protect that order with some form of authority. No form of order can be permanent, however, and no form of authority can endure for very long before it is challenged, not only by disobedience but also by new forms of knowledge that throw its very legitimacy into question. Every scientific revolution has followed this pattern that the mathematician John Casti has called, in an arch nod both to Milton and Kuhn, 'Paradigms Lost' (1990).

According to the ethos of theocracy, Eve's sins are disobedience and a wayward curiosity. According to the ethos of science, these should be recognized as her cardinal virtues. What Milton called disobedience was merely Eve's refusal to accept the word of others about the Tree of Knowledge and the nature of its fruit. What he and other orthodox Christians have condemned as a wayward curiosity is closer to what Einstein described as 'the cosmic religious sense.' Religion scholar Elaine Pagels argues that some gnostic Christians praised Eve's pursuit of fundamental knowledge about the human condition, in stark contrast to her condemnation by more orthodox Christians such as Tertullian and Augustine (1988:68). Pagels identifies one gnostic text, the *Hypostasis of the Archons*, as presenting a counter-narrative that 'describes Eve as the spiritual principle in humanity who raises Adam from his merely material condition' (1989: 31). In this reading, Eve's quest for knowledge did not instigate the Fall, but rather began a process of spiritual ascent (or, we might say, *evolution*) for the human race.

Among the myriad apocryphal texts that preceded the establishment and enforcement of Nicene Christianity, only a small fragment remains of the one entitled *The Gospel of Eve*. Cited in a fourth century commentary by the sainted Bishop Epiphanius of Samalis, who condemned the sect as unorthodox, this fragment of text has since been cited by various religious nonconformists over the centuries, from mystics to advocates of science and women's equality. In the 1880s, the prominent New York freethinker and feminist D. M. Bennett lamented, 'It is greatly to be regretted that we have so little of this curious book preserved' (Bennett 1881: 639). The fact that a nineteenth century freethinker such as Bennett should find inspiration in the fragments of this gnostic religious text should not be surprising. In her magisterial history of human doubt both within and without various religious traditions, Jennifer Michael Hecht shines a bright light on the many ways in which the struggles of mystics against orthodoxy in the ancient world have paralleled the struggles of scientists and secularists against religious authority in more recent times (Hecht 2003: 189-192; 206-212). Nineteenth century freethinkers who advocated women's equality and freethought found ample reason to praise the earliest opponents and victims of orthodoxy, from persecuted gnostic sects to the martyred Hypatia of Alexandria (Dzielska 1996: 11). Hence, the prominent British atheist Charles Bradlaugh named his daughter Hypatia, while his American contemporary, D. M. Bennet, was fascinated by the gnostic *Gospel of Eve* (Hecht 2003: 416).

In his two-volume work, *The Gods and Religions of Ancient and Modern Times*, Bennett quoted the surviving fragment from *The Gospel of Eve* as follows:

> I was planted on a lofty mountain, and lo! I beheld a man of great stature and another who was mutilated. And then I heard a voice like unto thunder. And when I drew near, he spoke to me after this wise: I am thou and thou art I. And wheresoever thou art there am I, and I am dispersed through all. And wheresoever thou willest, there canst thou gather me; but in gathering me thou gatherest thyself (Bennett 1881: 639).

Like many texts produced by the political, cultural, and religious ferment of the early Christian era, this fragment is both intriguing in its imagery and maddeningly obscure in its meaning. In the broadest sense, however, it seems to suggest a fundamental identity between the mind of an inquiring person (i.e., the narrator) and a mysterious 'voice like unto thunder.' If this voice is taken as divine, it reflects a divinity that is enmeshed in the fabric of the universe and within ourselves. There is a beguiling affinity between this unfolding conception of divinity and the process of discovery through science. The deity alluded to by *The Gospel of Eve* remains as obscure as the historical circumstances under which the text itself was composed, but it bears at least some similarity to what Einstein described in 1929 as 'Spinoza's God, Who reveals Himself in the lawful harmony of the world' (Rowe and Schulmann 2007: 16). If the divine is immanent in oneself and in the fabric of the universe, Eve's experiment with the fruit from the Tree of Knowledge is not the beginning of sin and death, but a step closer to an understanding of, and identity *with*, creation: 'I am dispersed through all. . . . in gathering me thou gatherest thyself.'

This affinity between the story of Eve and the spirit of inquiry was not lost on some of the women who first spoke out for the cause of feminism. In 1790, a few years after Kant had framed Horace's dictum *Sapere Aude* as the defining motto of the Enlightenment, the pioneering American feminist Judith Sargent Murray praised Eve as the nobler character in Genesis precisely because she dared to know. In her 1790 essay 'On the Equality of the Sexes' Murray declared of Eve that 'a laudable ambition fired her soul' and that ambition was quite simply 'a thirst for knowledge.' Adam, in an act of acquiescence that must challenge the notion that men were the nobler and stronger sex, chose the path of disobedience 'merely in compliance with the blandishments of a female' (Murray 1995: 13). Judith Sargent Murray's defense of Eve's superior curiosity was echoed during the first half of the nineteenth century by other feminists such as Sarah Grimké and Elizabeth Cady Stanton (Hamlin 2014: 31). However, as long as these feminists accepted the general premise that the Genesis story described the Fall of the human race from a state of harmony with God and nature, the idea that Eve's motivations were somehow nobler than Adam's could not fundamentally change the terms of the debate. Whatever her motivations had been, Eve remained the first to commit the original sin of disobedience. In the second half of the nineteenth century, when Darwin's theory of evolution offered a clear alternative to the Genesis story, Elizabeth Cady Stanton, in step with a younger generation of feminists, was happy to leave the story of Eve behind and embrace what she saw as a more scientific basis on which to make the argument for women's equality (Hamlin 2014: 48-53).

And yet the Genesis tale retains its force. Bacon's intuitive understanding of the power of a great story inspired his use of Greek mythology to make the case for science,

though none of his contemporaries took any of the Greek myths to be literally true. In our own time, we need not accept the literal truth of the Genesis story to appreciate its power as a parable about the nature of science. The story of Eve and the Tree of Knowledge describes the birth of science, encapsulating the key phases of a scientific experiment from observation and hypothesis to peer review a single verse: “And when the woman saw that the tree *was* good for food, and that it *was* pleasant to the eyes, and a tree to be desired to make *one* wise, she took of the fruit thereof, and did eat, and gave also to her husband with her; and he did eat” (Genesis 6:3, King James Version).

Even the ‘punishments’ that result from this act point to an epochal expansion of human knowledge. The fact that Eve’s primary curse is painful childbirth (‘in sorrow shalt thou bring forth children’) points to a correlation confirmed by evolutionary biology: childbirth is more painful for human females because of the extraordinary size of the human brain (Martin 2013: 131). Adam’s primary punishment (‘in the sweat of thy face shalt thou eat bread’) suggests not merely the advent of work but the invention of agriculture. Though big brains do make childbirth painful and agriculture does involve a lot of hard work, neither of these developments can sanely be reckoned as constituting a ‘Fall’ for our species. Our oversized brains helped us develop agriculture, and agriculture has made it possible to refine every other accouterment of civilization, including wonderful and perplexing parables such as the Genesis tale. Instead of regarding Eve’s choice as a fatal transgression, we should see it as the beginning of a great and unfolding experiment in the life of the universe.

For fundamentalists, the opening verses of Genesis possess the power to close the debate about who we are and where we came from. Skeptics and explorers should cherish this tale for precisely the opposite reasons. Charles Darwin once observed that, “without doubting there can be no progress” (Darwin [1871] 2004: 167). The story of Eve’s doubting the repeated warnings about the Tree of Knowledge illustrates this point quite nicely. In his recent book on Adam and Eve, the literary scholar Steven Greenblatt has observed – and confessed – that: “Millions of people in the world, including many who grasp the underlying assumptions of modern science, continue to cling to the peculiar satisfaction that the ancient story provides. I do.” Greenblatt ties this “peculiar satisfaction” to the idea that Eve’s “deliberate action” and “not an impersonal mechanistic process of random mutation . . . determined the shape of our lives” (Greenblatt 2017: 299). Of course, the idea of “deliberate action” points to yet another question. The problem of free will (which those philosophers classed as “mysterians” believe we will never be able to answer) is a riddle that also begins with Eve’s choice to taste the fruit of the Tree of Knowledge.[1]

Precisely because it involves the mystery of human choice and its consequences, the story of Eve’s experiment still possesses a tremendous power to pose new questions about who we are and where we are going. Plenty of ink has already been spilt

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[1] Among the thinker who are classed as “mysterians” for their position on free will, Martin Gardner listed himself, along with contemporaries such as Noam Chomsky, Thomas Nagel, and Jerry Fodor (Gardner 1996: 427).

concerning the question of what sort of knowledge Eve discovered, and the related question of why that knowledge was forbidden. However, these questions have a multitude of companions. For example, if the language that Adam spoke when he named the plants and animals of Eden has been exalted as perfect and true, what about the tongue that Eve spoke when she conversed with the serpent? What sort of language would enable us to converse with nonhuman nature, as opposed to merely naming and classifying its menagerie? What worlds might such a language open up to us?[2] If seeing and naming were the forms of knowing that Adam invented, what does it mean that Eve discovered another form of knowing that involved tasting the fruit from the Tree of Knowledge and ingesting its substance? We will probably never find a definitive answer to any of these questions, just as we have never found a clear pattern in the digits of *pi* or the golden ratio. Like these essential but irrational numbers, the story of the woman, the serpent, and the tree is both mystifying in its refusal to be reduced to a simple formula, and inspiring in its constant recurrence in our experience of nature.

Every time we pursue knowledge for its own sake, we are continuing Eve's experiment. If we find ourselves in the walled garden of an established paradigm, we may be tempted to accept the structure of that paradigm with resolute faith in order to maintain the security of our confinement. Or we may listen to the subtleties of nature, as Eve listened to the subtle voice of the serpent, and test the premises that uphold the established order of things. This experiment always leads to our exclusion from the garden. If we would seek to return, we see a flaming sword in our path that illuminates this fact: you cannot *un*-know, by some act of will or even by the sincerest contrition, what you have come to know. Conversely, however much we come to know, we will not be able to banish mystery, as each tenuous extension of the borders of knowledge immediately expands of the frontiers of the unknown.

What, we might ask, is the Gospel of Eve? How do I know? In all seriousness, that is it: *How do I know?* or, for parties of two or more, *How do we know*? It is a declaration of both humility and faith. Humility about the limits of our knowledge and faith that it might be possible to know. In its humility it avoids the dead end of dogmatic certainty. In its faith, is eschews the arid wastelands of radical skepticism and complete relativism. It is worthy of being called a gospel because it offers us the good news that we can know more about the cosmos, but, unlike other gospels, it does not offer a path to some paradise, either here on earth or in the great beyond. The simple actions of Eve in Genesis are a stunning illustration of her gospel: if you find yourself within a paradigm that purports to be complete, test its limits immediately. If you find yourself in a paradise that purports to be eternal, look for the exit.

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[2] In the 1960s, Elisabeth Mann Borgese considered this question in some depth, but the answer remains nearly as elusive today (Borgese 1968).

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