

Bacon's *New Atlantis* and the Contexts of Science

By U. Milo Kaufmann

Abstract

Despite the deserved acknowledgement of Francis Bacon as uniquely important in the late Renaissance encouragement of applied science with the associated emphasis upon empirical knowledge, the common judgment must be qualified by noticing the evident limitations upon any science-based optimism implicit in the fable of *New Atlantis*. It is also true that Bacon's epistemology is much more inclusive than a strict empiricism would imply. A lingering question posed by his utopian fable is how the science of new Atlantis is implicitly regenerative of the human person and community.

Keywords

epistemology, knowledge, Bensalem, Renaissance, Bacon, science, empiricism, utopia, *New Atlantis*, revelation, providence



Introduction

New Atlantis, written two years before Francis Bacon's death in 1626¹ and published posthumously, is a work of three parts which in its modern editions have often had its first two parts slighted. One can perhaps forgive *The Norton Anthology of English Literature*, so late as the sixth edition, the expedient of printing only the concluding description of Salomon's House. Less pardonable is the only too frequent scholarly appeal to Bacon as an uncritical apostle of science

¹ Francis Bacon (1561-1626) trained at Cambridge, was appointed as English Attorney General and then Lord Chancellor, and eventually was created Viscount St. Alban, though in the year of that act (1621) he was impeached for the accepting of bribes. He served 36 years in the House of Commons. His major works promoting science are *Novum organum* (the claim of the title putting his work on a par with that of Aristotle) and *The Great Instauration*, both published in 1620. He is remembered as well for his *Essays* of 1597, 1612, and 1625.

with the optimistic vision of Salomon's House cited as definitive evidence, when in fact the qualifications upon the scope and promise of science which Bacon had voiced throughout his career he carefully incorporates into *New Atlantis* as the limiting contexts expounded at length in the opening two parts of the fable. The first section firmly locates Bacon's island utopia in the framework of human history, especially as that history has incorporated contingency and catastrophe, and the second section gives us the ambiguously paradisaical shape of the Bensalemite society on the island. In these sections Bacon in fact details three limiting contexts for the new science, and in listing them I indicate the outline of the discussion which follows: (1) The context of human history, for which Bensalem's environing ocean is the primary symbol, provides a hedge upon science understood as a new source of hope, or secular providence; (2) the context of revealed and traditional knowledge, presented in the details of how the new Atlantis shares faith with Europe, qualifies science understood as empirical knowledge; and (3) the context of contemporary fallen Europe, represented in the person of the narrator and his party, and previously known to the new Atlantis as the Old World which it has regularly observed while itself going unobserved, qualifies science understood as elite community.

History as Context for Science

Taken by itself, the concluding section of *New Atlantis* can be made to support brightly optimistic forecasts for the human enterprise. An extreme example is the use made by Adrian Berry in his euphoric tract for science, *The Next Ten Thousand Years*. Predicting ineluctable progress for our species over the coming millennia, Berry titles his first chapter "The New Atlantis," and in it cites Bacon to support notions which are surely the opposite of what Bacon's fable, taken in its entirety, shows. I quote from Berry:

The revolution wrought by Bacon must be seen as the single most important "revolution" that has ever occurred in human society. With several volumes

of essays and a novel [i.e., *New Atlantis*] he set in motion a chain of events that today has gathered an inexorable momentum. Wars and economic recessions cannot for long turn it aside. He has set us on a course from which there is no retreat.²

One might suppose that Berry would take caution from the mere fact that Bacon chose to call his precarious utopia a new “Atlantis,” with all the minatory resonance that name carries, but his optimism is not to be so easily checked. In his appeal to Bacon’s tale, Berry places special weight upon the announced objectives of Salomon’s House: “To seek the knowledge of Causes, and secret motions of things; and the enlarging of the bounds of Human Empire, to the effecting of all things possible.”³ And we must admit that here and elsewhere Bacon does recognize the enormous promise of science. In the *Novum organum* (1620) he had insisted that the “true and lawful goal of the sciences is none other than this: that human life be endowed with new discoveries and powers.”⁴ Moreover, in an unguarded moment he appears to say that nothing other than science provides ground for confident expectation. “There is no hope except in a new birth of science; that is, in raising it regularly up from experience and building it afresh; which no one (I think) will say has yet been done or thought of.”⁵ And in a later comment in the same work, in language which suggests that at least the central image of *New Atlantis* is already in his mind, he says that

even if the breath of hope which blows on us from the New Continent were fainter than it is and harder to perceive; yet the trial [. . .] must by all means be made. For there is no comparison between that which we may lose by not trying than by not succeeding; since by not trying we throw away the chance

² Berry 222-23.

³ Bacon, *New Atlantis* 70. The edition I am using, edited by J. Weinberger, gathers *The Great Instauration* and *New Atlantis* into one volume. Weinberger reprints the standard text of Spedding, Ellis, and Heath’s edition.

⁴ Bacon, *Philosophical Works* 280. For this and all succeeding references to Bacon’s discursive works on science I use *The Philosophical Works of Francis Bacon*, reprinted from the texts and translations with notes and prefaces prepared by Ellis and Spedding, edited by John M. Robertson.

⁵ *Philosophical Works* 288.

of an immense good; by not succeeding we only incur the loss of a little human labor.⁶

It is such prophetic vision which the historian John Herman Randall can cite as Bacon's real contribution to the history of science. Though Bacon, primarily because of his own weakness in mathematics, could not and did not lay out the precise course that experimental science would take, he did fix the optimism of the new method. "He was an inspired prophet of the basic intellectual tendencies of the modern age. He proclaimed [. . .] our faith in the power of science and technology to enhance the daily lot of man."⁷

Now while Bacon's belief in the promise of science is evident in the presentation of Salomon's House in the last section of *New Atlantis*, there is good reason to suppose that the center of gravity for the whole is to be found elsewhere. Part of the reason is stylistic. The prose of the closing section is perfunctory and tedious, a construction upon uninspired lists and unrelieved anaphora which break off before any final end is reached. The fact is that Bacon had made his point about applied investigation many times before, and not surprisingly the narrative life in this tale is to be found earlier in the story where Bacon the artist is more clearly at work.

I suggested above that the opening section is dominated by history and the sea. A summary of the relevant details will make this point evident. We learn that the narrator's party had set out from Peru with a year's provisions, only to become lost in the vast wilderness of the Pacific. When they had given up hope, they came upon the land of Bensalem. The narrator shortly thereafter calls his group together and makes a speech: "My dear friends, let us know ourselves, and how it standeth with us. We are men cast on land, as Jonas was out of the whale's belly, when we were as buried in the deep; and now we are on land, we are but between life and death."⁸

⁶ *Philosophical Works* 293.

⁷ Randall 240.

⁸ Bacon, *New Atlantis* 43.

Soon the governor of Bensalem provides the rescued party a short history of his island. He includes an account of the original Atlantis and how its proud enterprises were overtaken by the “Divine Revenge” in a great inundation. Quite naturally, he brings in reference to the even earlier flood survived by Noah and his family. Noah’s flood is referred to again later by the narrator as he mentions the residents’ special honor for Adam and Noah, both of whom had peopled the world.

It is significant that throughout his adult life Bacon accepted as true the notion that men had reached high levels of civilization more than once in the past, only to fall through pride. James Spedding touches on this in a nineteenth-century preface to *New Atlantis*:

In 1609 when he [Bacon] published the *De spaiientia veterum*, he was inclined to believe that an age of higher intellectual development than any the world then knew of had flourished and passed out of memory long before Homer and Hesiod wrote; and this upon the clearest and most deliberate review of all the obvious objections, and more decidedly than he had done four years before when he published the *Advancement of Learning*.⁹

Surely it is neither caprice nor inadvertency that Bacon’s fable is named as it is. The title directs one’s attention to the substance of the opening section, indeed to one of the overarching themes of the work. No permanent guarantees inhere in the scientific enterprise. It is as precarious as ever proved to be the first Atlantis or the antediluvian culture. If the context of history implies anything, it is that science must ever be an island, threatened by contingency and by the perils of pride and condign judgment. The surrounding, impinging ocean in this tale—the ocean of Atlantis, of Noah, of Jonah, and of our travelers who almost perish before they happen upon Bensalem—is the sign and seal of Bacon’s honesty in describing the future of applied knowledge. If there are guarantees to be savored, of a certainty

⁹ Spedding in Bacon, *Philosophical Works* 711.

they inhere neither in science nor in the fathomless nature which science engages.¹⁰

Revealed and Traditional Knowledge as Context for Science

It is a modern commonplace to identify Bacon as a reducing valve in the history of epistemology. The typical, if ill-informed, claim is that Bacon proposed utility and power as the proper ends for knowledge, with the empirical methods of science the only ones to be honored. I cite one example from the many that could be given. Huston Smith, in his *Beyond the Post-Modern Mind*, says, "Bacon tied truth to inductions arrived at in 'a certain way,' the way of experiment or the method of 'natural philosophy.' Nothing deserves the credentials of truth that is not arrived at by this one useful and sovereign method."¹¹ But just as we should not take the promise of Salomon's House apart from the threat implicit in ocean and human history, so we dare not divorce the narrow epistemology of applied science from what the fable declares to be other primary ways to the truth.

On this Bacon is unequivocal. Prior to the description of Salomon's House we are given an entire framed story which is a kind of epistemological parable. In brief, before the events of the Christian New Testament had fully played out, the dwellers of a coastal city of the new Atlantis witness a prodigy on the sea. They are extraordinarily inducted into belief. The governor who talks of this sums it up: "And thus was this land saved from infidelity (as the remain of the old world was from water) by an ark, through the apostolic and miraculous evangelism of St. Bartholomew."¹²

It is apparent that Bacon is at pains to elaborate access to truth other than the empiricism of science. The ark which figures so significantly in the story, while

¹⁰ That fine poet/anthropologist Loren Eiseley has also commented upon the significance of the island/ocean configuration, though he is concerned not so much with the dangers of pride, contingency, and the unyielding obscurity of nature as he is with the persistent difficulty of doing good science. Men, even scientists, he observes, find rigorous experimentation hard to sustain. "In this sense science is not natural to men at all. It has to be learned, consciously practiced, stripped out of the sea of emotions, prejudices, and wishes in which our daily lives are steeped" and "[e]ven the professional scientist frequently confines such activity to a specific discipline and outside of it indulges his illogical prejudices" (19).

¹¹ Smith 167.

¹² Bacon, *New Atlantis* 46-49.

incidentally reinforcing the context of perilous ocean, implies both revealed and traditional modes of knowledge. It is of course the vehicle of divinely-given knowledge, but it is also the emblem of continuity in human tradition. Tradition has survived catastrophe in the past and may be expected to do so again, the repository of those nonce yet central and constitutive human experiences which do not remain accessible for verification.

In his larger discussions of epistemology Bacon does indeed allow for a variety of modes of knowing. In his *De augmentis scientiarum* Bacon makes clear that he accepts as sources of authentic knowledge both sense experience and revelation. The knowledge of man, he declares,

is as the waters. Some waters descend from above, and some spring from beneath; and in like manner the primary division of sciences is to be drawn from their sources; for which some are above in the heavens, and some here below. For all knowledge admits of two kinds of information; the one inspired by divine revelation, the other arising from the senses.¹³

A bit later, in the same passage, Bacon observes that

the Heathen [. . .] in that excellent and divine fable of the Golden Chain concede that men and gods were not able to draw Jupiter down to earth; but contrariwise, Jupiter was able to draw them up to Heaven. And therefore it were a vain labour to attempt to adapt the heavenly mysteries of religion to our reason. Fitter it be that we raise our own minds to the adorable throne of heavenly truth.¹⁴

As Bacon canvasses the domain of knowledge he not only makes an initial distinction among all kinds by virtue of sources, whether supernatural or natural, but goes on to divide into three parts each of these two spheres according to the cognitive faculty employed. Bacon understands the three relevant faculties to be

¹³ Bacon, *Philosophical Works* 453.

¹⁴ Bacon, *Philosophical Works* 456-57.

memory, imagination, and reason. In this fashion, human knowledge, whether of supernatural or natural origin, can be divided into History, Poesy, and Philosophy (or Science).¹⁵

This carefully differentiated epistemological scheme is a necessary condition for grasping the import of any particular claim Bacon makes for the ways to truth. Adrian Berry, for example, takes delight in showing how Bacon fathers the new era by setting aside the profitless speculative and teleological concerns of the philosophers before him.¹⁶ But this is to miss the point, as C. D. Broad is at pains to demonstrate:

Bacon holds that the existence of teleology in Nature is an obvious fact, and that the investigation of final causes is a perfectly legitimate branch of Natural Philosophy. It has, however, been misplaced; for it belongs to the division of Natural Philosophy which Bacon calls *Metaphysics* and not to that which he calls *Physics*.¹⁷

The elaborate narrative of how the new Atlantis came to share faith with Europe is, then, not only Bacon's judicious demonstration that the autonomous new science as practiced on the island need be no threat to traditional society, but also Bacon's depiction of that commodious epistemology which he honors everywhere in his prose. The empirical knowledge promised by the new method rigorously employed may indeed carry the promise of unimaginable new material goods, but it is only one kind among several, and not even the most important of the several. Science, Bacon insists, is to be ordered by religious and ethical ends. A new providence science may be, but only to serve and fill out the superordinate divine providence. There is peril in the new knowledge, for it opens a fountain "such as it is not easy to discern where the issues of streams thereof will take and fall." Since this is the case, Bacon finds it "good and necessary to establish the channel "to rule and guide the course of the waters." His canalizing principle is

¹⁵ I am following the useful summary in Broad 10-11.

¹⁶ This is, I believe, a fair interpretation of Berry's entire opening chapter in *The Next Ten Thousand Years*.

¹⁷ Broad 14.

“*That all knowledge is to be limited by religion, and to be referred to use and action.*”¹⁸ In concluding his preface to *The Great Instauration* Bacon elaborates the point.

I would address one general admonition to all; that they consider what are the true ends of knowledge, and that they seek it not either for pleasure of the mind, or for contention or for superiority to others, or for profit, or fame, or power, or any of these inferior things; but for the benefit and use of life; and that they perfect and govern it in charity.¹⁹

Yet, having noticed Bacon’s concern to acknowledge the governing and orienting roles of religious and ethical ends not grounded in the empirical, one must concede that these offices are not detailed in *New Atlantis* as they might have been. Bacon’s fable is not so clear in presenting the practical outworking of his commodious epistemology as it is in reminding us of the shape of that epistemology. The articulation of science and context remains imperfect, a defect in argument which holds true also for the last context I shall be considering.

Contemporary Fallen World as Context for Science

New Atlantis sets science within a social context, albeit a context, Professor Judah Bierman has observed, from which it is essentially free. Though Bierman’s argument is by no means the most recent contribution to the analysis of Utopian ideals, his conclusion does provide a point of departure for the present discussion. He observes:

What made the image [of Salomon’s House] so powerful was the creation of a separated place whose inhabitants had no other function in the city, and a class whose activities played no direct part in the daily routine of the society. To this institution he also gave a large measure of autonomy, so that as a

¹⁸ Bacon, *Philosophical Works* 186, italics Bacon’s.

¹⁹ Bacon, *Philosophical Works* 247.

self-directing group the brotherhood also generated values. While it is certainly true that isolation from other societies is characteristic of most utopias, the isolation of this elite and the institution it operates within its own society constitutes Bacon's unique contribution to Renaissance utopian speculation.²⁰

Bierman explains that we tend to understand the isolation and autonomy of the scientists in their own society as Bacon's affirming the necessary separation of the political from the scientific, "But we can also read the arrangement of these structures to say that so far as science is creative discovery, it cannot flourish within the shadow of places devoted to other purposes."²¹ In these comments Bierman gives a wholly positive construction of the "alienation" or separation of the scientific enterprise, and of the "elite" who sustain it, from political and religious restraints. But surely we cannot afford to leave the matter there, not simply because Bierman's term *elite* conjures up so many painful episodes in the history of science since Bacon's time, but also because Bacon himself does not allow of such a clean divorce of science from the larger ends of economy.

I find it natural to discuss the isolation and elitism of Bacon's scientific community in terms of yet another context implied in the fable itself. In this case it is the context of the then-contemporary fallen Europe, represented by the narrator and his party and well known to the Bensalemites through their long-term observation of the Old World. What Bacon presents us with is one of the last of the Renaissance's earthly paradises. In this example, the paradise (we must assume) is a place where man has been regenerated (we must assume) by the sweet influences of science itself. Yet by the circumstance of the gulf that lies between regenerate Bensalem and fallen Europe, we are presented with two perplexing questions—how, in fact, *is* science regenerative, and why has this momentous truth had no part to play in Bensalem's transactions with the Old World.

In *New Atlantis*, there is no escaping the fact that the narrator and his party find

²⁰ Bierman 500.

²¹ Bierman 500.

the islanders to be categorically different from themselves. The compassion and generosity of the natives are so unstinting that the rescued men conclude they “have come to a land of angels, which did appear to us daily and prevent us with comforts, which we thought not of, much less expected.”²² When the narrator declares that “it seemed to us that we had before us a picture of our salvation in heaven” we recognize that we are dealing with yet another version of the earthly paradise. Bacon, however, complicates the picture by encouraging the inference that it is science which has made the difference between the new Atlantis and Europe. Both realms are shaped by religion, but the Europeans who observe the island find the residents so different as to be all but angelical.²³

Indeed, the radical asymmetry between fallen Europe and regenerate Bensalem is present from the outset of the fable. The precautions taken by the natives when the mariners first arrive are typical. The illness on the ship must not be allowed to infect the island, and that illness is representative of all the evils of the outside world which Bensalem cannot allow free play among themselves. Bensalem, as the name implies, is an island of peace in a world of strife. And what is most remarkable about this spiritual otherness is that it must be attributed to the new science, an enterprise devoted to power and control over nature.

Bacon, of course, is by no means alone among Renaissance Christians in attributing redemptive power to knowledge. Milton, to mention the paradigmatic case, can make the undoing of the Adamic Fall the central concern of education.²⁴ But in Bacon’s case we are made to believe that in fact it is knowledge *as power* which constitutes the undoing of the Fall. In his *Valerius terminus*, Bacon had proclaimed that “the true end of knowledge” is nothing less than “a restitution and reinvesting (in great part) of man to sovereignty and power [. . .] which he had in

²² Bacon, *The New Atlantis* 45.

²³ Bacon, *The New Atlantis* 50, 65.

²⁴ See the opening of his tract *Of Education*.

his first state of creation."²⁵ If, as Francis Yates can remind us, the whole point of Bacon's "great instauration" was to recover the Adamic condition of both innocence and sovereignty,²⁶ we are perhaps not bumptious in inquiring where Bacon may have worked out the means by which the pursuit of knowledge as power not only proved to be uncorrupting but in fact redemptive. But while the question may be raised, the answer Bacon offers is disappointing. The reader of *New Atlantis* finds that the entire population of Bensalem, and not merely its scientific elite, has been regenerated by the benefice of the new knowledge, but neither here nor elsewhere does Bacon show how such an effect might be wrought. To complicate this omission in the fable we have the provocative contrast posed between the natives and the visiting Europeans. The tension goes unresolved.

That tension is also present in a larger juxtaposition which the story encourages. The community of Bensalem has long observed Europe while going unnoticed itself. Francis Yates can make good use of this detail in elaborating the Rosicrucian element in Bacon's fable—we are alerted to this link when we learn that the governor of the Stranger's House wears a red cross on his turban, and it is true enough that the Rosicrucian Brotherhood preserved, as Bensalem does in Bacon's fable, a politic obscurity in its dealings with Europe.²⁷ I would claim that this detail is more important for what it suggests about Bacon's conception of the new science than for whatever link it may indicate between Bacon and Renaissance Rosicrucianism. In this circumstance, as in the bold contrast between the shipwrecked party and the island's natives, we have posed the perplexing issue of how the regenerate scientific society shall be reconciled with the remainder of the world. To Bacon's credit, we must admit that he keeps that wider world before us. Still, full reciprocity with Europe is apparently unthinkable and the tale, which breaks off unfinished, seems incapable of including any very plausible suggestion as to how the events of the story will avoid producing a lasting alteration of the

²⁵ Bacon, *Philosophical Works* 188.

²⁶ Yates 119.

²⁷ Yates 126-217.

precarious isolation.

The issue is important, for the tension between science as elite community and the larger world has plainly been a fact of history since Bacon's time. Will Durant, in an essay published in 1929, appeals to the Baconian model in words which succeeding decades have rendered heavily ironic. The problem yet to be solved, he suggests, is that of man's understanding and mastery of himself. If only another Bacon, he speculates, "should come to map out" this territory, and "clarify the proper methods and objectives of its attack," would any one of us, "knowing the surprises of history and the pertinacity of man," dare fix limits on "the achievements that may come from our growing knowledge of the mind?" After all, "already in our day man is turning round from his remade environment, and beginning to remake himself."²⁸ But in fact science, though the prerogatives of the elite are willing enough to grant it, has not been notably successful in making the larger world, or the men and women who inhabit it, into a society remotely like the one described in *New Atlantis*. If anything, as Langdon Gilkey argues at some length in his early *Reaping the Whirlwind*, we are becoming aware that "the real problem with history may lie in the inability, or apparent inability, of men and women to control *themselves*, and thus that the tragic character of history stems not so much from our lack of knowledge and power, as from our misuses of them."²⁹ The fatal flaw in the prevailing mythology about science, Gilkey suggests, is embodied in the popular contemporary notion of scientific man in history as a transcendent figure who has the capacity freely to choose, and "to choose in such a way as to determine almost completely what [his] destiny will be, rather than as is evidently true of 'ordinary history'—at best [free] to direct or shape a destiny that is given to [him]."³⁰ He concludes, "Veritably we have here before us a modern-day Indra standing above or astride the monster of historical passage and subduing

²⁸ Durant 301.

²⁹ Gilkey 72, italics Gilkey's.

³⁰ Gilkey 73.

with his new technical weapons the potential chaos of the unknown years to come.”³¹

Gilkey's imagery of Indra astride chaos serves to bring us back to the Bensalem community of the new Atlantis and its role in the collective human destiny. Bacon leaves unresolved the tension between regenerate scientific community and the fallen world. His fable witnesses both to the hope of science and to the enormous challenge of integrating science into the total human world. Bierman's thesis notwithstanding, it is not sufficient for the scientific elite to stand apart, generating its manifold goods. Nor does Bacon leave the matter there: in keeping the context of fallen Europe before his reader, he poses the question of the higher-order integration even as he proves unequal to its full articulation.

We may, of course, conclude that Bacon is too willing to settle for problematic juxtapositions rather than true reconciliation. He is too much the taxonomist and codifier, noting the diverse categories of the whole and all too content to leave matters compartmentalized. Perhaps Bacon is indeed to be seen as both creator and creature of the two cultures identified by C. P. Snow. Still, the domain surveyed by Bacon is larger than that admitted by Snow, and Bacon is careful in his complex fable to keep before us the contexts which must ever qualify and instruct the enterprise of science. History as a record of catastrophe and contingency must keep science humble. Revealed and traditional knowledge must provide science its ends. The environing fallen world must ever summon the elite community of science to relevant service. The fact that this last principle, while plain enough in the island's treatment of its visitors, goes unapplied in the further reaches of the island's foreign policy may owe to the same lapsing of the aged author's imagination that left the work unconcluded, or it may mark (as I suspect and have tried to articulate here) some essential incoherence in representing scientists as better than the balance of humankind.



³¹ Gilkey 73.

Works Cited

- Bacon, Francis. *New Atlantis*. Ed. J. Weinberger. Arlington Heights, IL: AHM, 1980.
- _____. *The Philosophical Works of Francis Bacon*. Ed. John M. Robertson. London: Routledge & Sons, 1905.
- Berry, Adrian. *The Next Ten Thousand Years: A Vision of Man's Future in the Universe*. London: Jonathan Cape, 1974.
- Bierman, Judah. "Science and Society in the *New Atlantis* and Other Renaissance Utopias." *PMLA* 78 (1963): 492-500.
- Broad, C. D. *The Philosophy of Francis Bacon*. Cambridge, UK: Cambridge UP, 1926.
- Durant, Will. "Is Progress a Delusion?" *Readings from Left to Right*. Eds. Victor E. Amend and Leo T. Hendrick. New York: The Free Press, 1970.
- Eiseley, Loren. *The Man Who Saw through Time*. New York: Charles Scribner's Sons, 1961.
- Gilkey, Langdon. *Reaping the Whirlwind: A Christian Interpretation of History*. New York: Seabury, 1981.
- Randall, John Herman. *The Career of Philosophy*. New York: Columbia UP, 1962.
- Smith, Huston. *Beyond the Post-Modern Mind*. New York: Crossroad, 1982.
- Yates, Francis. *The Rosicrucian Enlightenment*. London: Routledge & Kegan Paul, 1972.

