

Why Bacon's Utopia is not a Dystopia: Technological and Ethical Progress in *The New Atlantis*

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Abstract: One of the unique Utopian visions put forth in the 17th century was that of Francis Bacon. His *New Atlantis* portrays a technological Utopia on the fictional island of Bensalem. Although Bensalem's laws are just and its people generous, Bacon's emphasis is on how the society is organized with an eye to technological progress. Today, a Baconian society is often thought to be dystopian. Bacon is criticized for neglecting the fact that technology can be used for evil ends and even take on a life of its own, reshaping our world for the worse. Some also criticize Bacon for sounding a battle cry to conquer nature; it is not unusual for these critics to blame him (however indirectly) for everything from nuclear weapons to climate change. In response to these concerns, this paper examines the relationship between virtue and technology in Bacon's Utopian vision. My aim is to put Bacon into a dialogue with the modern critics of Bacon's technological optimism and to consider his replies to three recurring objections: that he naively views technology as a morally neutral tool, that he wrongly assumes that technological progress and ethical progress go hand in hand, and that his ambition to conquer nature fails to place sufficient moral limits on the creation and use of technology. I show that Bacon is concerned with the destructive potential of technology but has systematic ethical reasons for believing that we will overcome such problems.

Key words: Francis Bacon, technology, progress, Utopia

One of the unique Utopian visions put forth in the 17th century was that of Francis Bacon. His *New Atlantis* portrays a technological Utopia on the fictional island of Bensalem. Although Bensalem's laws are just and its people generous, Bacon's emphasis is on how the society is organized with an eye to technological progress. He imagines a multitude of discoveries and inventions, from flying machines and submarines to machines that can control the weather, that make human life longer, more prosperous, and more pleasant.

Today, as can be seen both in scholarly commentary and in the popular culture, a Baconian society is often thought to be dystopian. Bacon, and the production-oriented mindset which we have inherited from him, is criticized for neglecting the fact that technology can be used for evil ends and even take on a life of its own, reshaping our world for the worse (as when Twitter creates a generation of people who have a two sentence attention span, or when people wear headphones

on the bus rather than starting conversations with strangers, or when the NSA plays Big Brother).¹ Some also criticize Bacon for sounding a battle cry to conquer nature; it is not unusual for these critics to blame him (however indirectly) for everything from nuclear weapons to climate change (see Merchant 1980, where Bacon is blamed for a domineering mindset that supposedly lies at the root of modern capitalism²). Popular films such as the recent *Transcendence* (2014) suggest that this mindset will lead to an apocalypse.

In response to these concerns, this paper examines the relationship between virtue and technology in Bacon's Utopian vision. My aim is to put Bacon into a dialogue with the modern critics of his technological optimism and to consider his replies to three recurring objections: that he naively views technology as a morally neutral tool, that he wrongly assumes that technological progress and ethical progress go hand in hand, and that his ambition to conquer nature fails to place sufficient moral limits on the creation and use of technology. My overall point will be that Bacon is actually quite concerned with the destructive potential of technology but has systematic ethical and metaethical reasons for believing that we will overcome such problems. I begin, though, with a brief outline of Bacon's Utopian vision in the *The New Atlantis*.

1. A Brief Outline of *The New Atlantis*

Bacon's *New Atlantis* was first published posthumously in 1626, as an appendix to his natural history the *Sylva Sylvarum*. It is part Utopian fable and part travel narrative. Told from the

¹ Classic, influential expressions of this view include Ellul 1964 and Winner 1977.

² Merchant writes: "The Baconian program, so important to the rise of Western science, contained within it a set of attitudes about nature and the scientist that reinforced the tendencies toward growth and progress inherent in early capitalism. While Bacon himself had no intimation as to where his goals might ultimately lead, nor was he responsible for modern attitudes, he was very sensitive to the trends and directions of his own time and voiced them eloquently. The expansive tendencies of his period have continued, and the possibility of their reversal is highly problematical" (185).

perspective of a Spanish crew after they set sail from Peru for Japan and China, it begins when a storm rolls in and blows them off course towards the fictional island of Bensalem.

On Bensalem, they are taken in and offered shelter in “the strangers’ house” for a legally mandated period of three days, the purpose of which seems to be some combination of quarantine and surveillance (Bacon 1857, 469). I will pass over the conversation with the governor, which among other things displays an interesting concern with the secrecy that a technological society requires, and the conversation with a Jewish merchant named Joabin. Others have occasionally noted evidence of Bacon’s Machiavellian realism in the former and of his opinions about religious toleration in the latter.

For my purposes, what is most interesting is the speech by the father of Salomon’s House, the island’s scientific institution. In what we are told is a rare event, he agrees to reveal its inner workings to our narrator: “First, I will set forth unto you the end of our foundation. Secondly, the preparations and instruments we have for our works. Thirdly, the several employments and functions whereto our fellows are assigned. And fourthly, the ordinances and rites which we observe” (156).

The end is said to be “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.” (*All things? One might wonder whether to take this literally.*)

The list of preparations and instruments is the most striking section of the father’s speech. He describes caves that are used for producing artificial metals, refrigeration, and for prolonging life; high towers that are build atop hills and used for refrigeration and the observation of meteorological phenomena; artificial lakes; machines that generate wind; artificial fountains, including one with “water of paradise” that contributes to health and the prolongation of life (158);

houses for the generation of meteorological phenomena (including, in a claim that calls to mind the miracles of Exodus, the generation of frogs and flies in the air); gardens with what we would call genetically modified plants; parks for animals, which allow them both to be viewed and experimented upon; breweries and bakeries; furnaces of various kinds; houses of illusion; perfume-houses; “engine-houses” for building machines of war and fireworks, and flying machines and submarines. (This list is only partial, as the description in the text is a full eight pages long.)

The penultimate sentence of the speech offers an interesting qualification. Immediately after describing houses of illusion, the father adds that the Bensalmmites “hate all impostures and lies, insomuch as we have severely forbidden it to all our fellows, under pain of ignominy and fines, that they do not show any natural work or thing adorned or swelling, but only pure as it is, and without all affectation of strangeness” (164).

The final two sections of the speech, on the organizational structure and on their rites, are brief. The father describes the division of labor among the scientists (e.g., some comb through books looking for descriptions of experiments, some try new experiments, some arrange experiments into tables, and some work on the induction of general principles from the data). And then he describes some of the ordinances and rites of Salomon’s House. For example, they keep two galleries, one for displaying samples and prototypes of the most notable inventions, and the other for statues of the greatest inventors and discoverers.

The *New Atlantis* ends with the father, in what seems to be a unilateral decision to ignore King Salomon’s laws about secrecy, giving the narrator permission to publish his speech “for the good of other nations” (166). I take this as Bacon’s way of saying that we too should look upon Bensalem as a model. But is it?

2. Does Bacon advocate the tool-use conception of technology?

The first objection to Bacon's Utopianism that I want to consider is raised in vivid form by the examples in *The New Atlantis* of poisons and machines of war. These items appear to be under the control of Salomon's House, and (as with everything else they do), it is up to their discretion whether to share their technology, or even whether to share the knowledge that their technology exists, with the society at large. The father says that his description of Salomon's House is his "greatest jewel," which suggests that many of their inventions are unknown to Bensalimite society (156).

In the wrong hands, the technology of Salomon's House could be destructive. With the power to control the weather, one could flood another country; with poisons, one could assassinate the king; with the power to create illusions, one could deceive the populace in such a way as to incite a coup. The emphasis on secrecy in *The New Atlantis* is a sign of Bacon's cautiousness. The scientists of Salomon's House use all of this technology for good and tightly regulate it. As the father mentions, for example, they do not allow anyone to use their houses of illusion for purposes of deception. It appears, then, that Bacon recognizes that the technology he envisions can be used either for good or for ill and that through the proper customs, restrictions, and regulations, it is possible to ensure that the right people can retain control over the technology and put it to use in ways that benefit mankind.

But this line of defense fails to satisfy many of Bacon's critics. The philosopher of technology Langdon Winner raises an important objection by accusing Bacon of a naïve "tool-use conception" of technology:

The elementary tool-use conception of scientific technology, essentially unchanged since Francis Bacon, was universally accepted as an accurate model of all technical conduct. All

one had to do was to see that the tools were in good hands. Reinforcing this view was a devout acceptance of the idea of progress, originally an ideal of improvement through enlightenment, the education of all mankind, and continuing scientific and technical advance. (Winner 1977, 314)

I take Winner's line of objection to have three components. First, the tool-use conception holds that technology is passive, inactive, exclusively an object to be manipulated rather than an agent of manipulation, when in fact this is not true. This is often referred to as an instrumentalist conception of technology.³ Second, the tool-use conception includes a neutrality thesis which states that technology is morally neutral, in the sense that for any given piece of technology both virtuous and vicious uses of that technology are equally within our power, such that there is no impetus for good or ill that is intrinsic to the technology itself—but in fact, the argument goes, we can marshal many examples of technology which resist this characterization; and third—call this “use optimism,” a view which Winner says reinforces the other two points—we will tend over time to use technology in more and more virtuous ways. The first two aspects of the putatively Baconian conception of technology—instrumentalism and the neutrality thesis—might be summarized by the cliché, “Guns don't kill people; people kill people.” One might think of the third component as a certain kind of Utopianism. Put these together, and you have the conclusion that we can and will find virtuous rather than vicious uses for guns and all other technology.

Winner argues that the tool-use conception is naïve because it ignores the subtle ways in which technology can actively shape human life for better or for worse. And even if some artifacts, such as guns, obey the tool-use conception, the critics of technology typically cite more entrenched examples of technology as being the most pernicious (for example—and this requires that we adopt a broad definition of technology—things such as the assembly line or the apartment complex seem to be bound up with certain “forms of life,” as Winner puts it). Although Winner rejects

³ See, for example, Feenberg 1991, where the instrumentalist conception is contrasted with his own critical theory.

technological determinism, according to which technology can causally necessitate cultural changes, he adopts a more moderate view called technological somnambulism. According to this view, technology is active and autonomous, but if we are vigilant and willing to experiment with dismantling technologies, then we can adopt those technologies which are most compatible with the form of life we want for ourselves. In other words, the tool-use conception misidentifies what is in our power. Once technologies are out there, they may take on a life of their own. However, we *are* free to dismantle technologies and to experiment with alternatives.

Although I am sympathetic to Winner's technological somnambulism, it is not so clear to me that it conflicts with anything that Bacon says. Let us look to the textual evidence. The *locus classicus* for the tool-use conception in Bacon's work is *Novum organum* I. 129:

Lastly, if anyone complains that the sciences and arts have been corruptly given over to vice, extravagance and the like, no one should take any notice. For the same can be said of all worldly goods: of brains, bravery, brawn, grace, wealth, light itself, and the rest. Let the human race only be given the chance to regain its God-given authority over nature, then indeed will right reason and true religion govern the way we exert it. (Bacon 2004)

This passage *seems* to give voice to both the tool-use conception and to use optimism.

Another relevant piece of textual evidence is the story of Daedulus, as interpreted by Bacon in the *The Wisdom of the Ancients*. As Bacon tells the story, Daedulus helped create the Minotaur by building a hollow wooden cow in which Queen Pasiphae could mate with the white bull that Posiedon made her fall in love with. After Pasiphae gave birth to the Minotaur, Daedulus compounded his error by creating a labyrinth for the Minotaur. In the end, Daedulus partially redeems himself by using his technological knowhow to suggest to Ariadne that she give Theseus the ball of thread to help him navigate the labyrinth.

The lesson of the story, according to Bacon, is as follows:

Concerning the use of mechanical arts, that which follows is pain. The life of man is much beholding to them, seeing many things conducing to the ornament of religion, to the grace

of civil discipline, and to the beautifying of human-kind, are extracted out of their treasuries; and yet, notwithstanding, from the same magazine or storehouse are produced instruments both of lust and death, for we well know how far exquisite poisons, warlike engines, and such-like mischiefs (the effects of mechanical inventions), do exceed the Minotaur himself in malignity and savage cruelty. (Bacon 1858, 246)

And a little later, he adds that “the mechanical arts are of ambiguous use, serving as well for hurt as for remedy, and they have, in a manner, power both to loose and bind themselves” (247).

Bacon’s examples of “instruments of lust and death” are striking because *The New Atlantis* presents these artifacts—both poisons and engines of war—as if they were unproblematic. He must think that even these instruments of death can be used in a virtuous manner, that the technology is in itself morally neutral and able to be controlled.

But there are some reasons to think that even if Bacon does partially adhere to a certain form of the tool-use conception, he also exhibits some overlap with technological somnambulism. First, note that Bacon never says of artifacts that each and every one of them is capable of an “ambiguous use,” nor need he deny that some artifacts in themselves tend toward uses which are not conducive to human flourishing. What he says both in N.O. 129 and in the story of Daedulus is that *arts and sciences*—i.e., the knowledge which can be used to create artifacts—are capable of ambiguous use. So let us imagine some piece of technology which is capable of only one use, destruction. (Perhaps we can imagine some device which destroys the whole universe when you look at it and must be ignored entirely in order to be rendered innocuous.) I see no reason why Bacon can’t say that this piece of technology would actively reshape the world for the worse if it existed, and therefore the virtuous engineer would not create such a thing in the first place. But is there really a sharp distinction between this approach and Winner’s view that we can avoid being manipulated by technology if we are vigilant and experiment with dismantling technologies?

In fact, Bacon does appear to say that technology can be active, for he claims that the inventions of gunpowder, the printing press, and the magnetic compass reshaped the world. He assigns *them* causal power, saying that they “altered the whole face and state of things right across the globe” and “exerted a greater effect and influence” than philosophical disputes. (NO I. 129). This claim may still be compatible with a tool-use conception if the claim here is just shorthand for the view that volitional human agents made a series of unconstrained choices where the options from which they chose were dictated by emerging technologies, but even if that is the view, it is again a version of the tool-use conception which overlaps with technological somnambulism in its practical implications. If inventions are capable of causing such rapid, global changes, then Bacon might very well say (even if he does not say this about gunpowder or poisons) that if “right reason and true religion” are allowed to govern our use of the arts and sciences, we will decide to dismantle or avoid certain artifacts altogether. At the very least, it does seem clear that he thinks some technologies need to be kept on a tight leash, as evidenced by the secrecy of Salomon’s House. It is up to them which technologies to share with the common people of Bensalem.

Perhaps Winner would not be impressed, though, for Bacon is rather optimistic about just how careful we will be, and Winner cautions that this use optimism tends to cause us to let our guard down. Is Winner right that Bacon embraces “a devout acceptance of the idea of progress?” Just how optimistic is Bacon, and can he defend that optimism?

3. The Relationship Between Technological and Ethical Progress

The objection, then, is that Bacon’s confidence that Salomon’s House (or whoever in the real world possesses technology) will use “right reason and true religion” to decide how to use it and with whom to share it is naïve.

My view is that Bacon does think that technological and ethical progress go hand in hand, but I do not think that this is mere faith in humanity on his part. Instead, I want to suggest that there are some particular metaethical and ethical commitments which lie behind his belief in progress.⁴

The first thing to note is that technological and ethical progress have a common cause: the Baconian method of induction.

Someone will put it forward as a doubt rather than an objection, whether I speak of natural philosophy alone, or whether I speak also of perfecting the other sciences—logic, ethics, and politics—by taking the route I have mapped out. Now I do indeed mean it of all the things just mentioned [...] For I compile history and tables of discovery concerning anger, fear, shame and so on, and also ones to do with examples of civil business, no less than to do with the mental motions of memory, composition and division, judgement, and the rest, just as much as I would of hot and cold, or light, or vegetation, or the like. (NO I. 127)

Indeed, there are signs that the fellows of Salomon's House have gathered historical data related to ethics and politics. For example, the Merchants of Light, in their trips abroad, seem to gather cultural information about languages and religious customs.

Bacon believes that some inventions can be discovered without his method of induction. Sometimes we just get lucky. But we could not be as powerful as the scientists of Salomon's House just by luck. Since that amount of power presupposes the adoption of Bacon's method, and since those who understand Bacon's method so well will use it in ethics as well as in natural philosophy, one should expect ethical progress and technological progress to go hand in hand (all things being equal).

Note that I am not saying that the best natural philosophers will also be the best ethicists, or *vice versa*. It is possible for a good natural philosopher never to think about ethics. The point is about what Bacon must imagine happening on a cultural level. His method needs to be widely

⁴ A similar study can and should be done examining Bacon's politics and its implications for political progress.

adopted for there to be significant technological progress, and if his method is widely adopted, then there will also be significant progress in the field of ethics.

I am also not saying that Bacon has any reason to expect any *particular* degree of correlation between technological and ethical progress. For example, perhaps there are obstacles to one or the other that render the progress comparatively slow.

My argument is made more plausible by a consideration of some of the specific ways in which Bacon anticipates ethics progressing. Bacon's fullest discussion of ethics is in *De Augmentis* Book VII (Bacon 1858). There he more or less signs on to the view that the proper end of human action includes the well-being of the agent and, to an even greater degree, that of the larger human community. It is no coincidence, then, that human well-being is also the proper end of knowledge, according to Bacon.

Bacon does not suppose that there will be much more progress in the field of ethics when it comes to the question of the highest good. However, he does think that there will be progress in studying the means of securing the highest good. That inquiry, which Bacon says is a sort of medicine of the mind (or, in modern terms, psychotherapy), includes three topics: the study of character (based largely on biographies), the study of affections (based largely on civil histories), and the study of remedies (moral precepts that are to be inferred from the knowledge of character and affections). These precepts include demanding neither too little nor too much of ourselves, and using some passions to counteract others. Recall the gallery of inventors in Salomon's House. Apparently they have learned how to use fame as a source of motivation.

When we think of ethics as Bacon does, as psychotherapy, it is easy to see why he might expect his method to usher in an era of ethical progress. He does not expect that we will become moral saints; we will be the same imperfect creatures as always. But we will use our knowledge

of character and the affections to develop more effective techniques for directing our will towards the proper ends.

4. Moral Constraints on the Use of Technology

Supposing for the sake of argument that the scientists of Salomon's House can use the Baconian medicine of the mind to guide their use of technology, one might still think that there is something perverse about their end, which is said to be, "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." For example, Bacon has been lambasted by proponents of ecocentric theories of ethics. Carolyn Merchant objects to Bacon's goal of conquering nature by creating new types of organisms and by trying to manipulate the weather.

If one objects to an anthropocentric ethics, then one will certainly object to Bacon's view that human well-being is the highest good by reference to which we should determine what to do with our science and technology. However, one should correct the impression that Bacon doesn't recognize the need for moral limits on experimentation and technology. For example, he regards human vivisection as immoral (even if one attempts to do it while a person is already cut open for surgery):

Of that other defect in anatomy (that it has not been practised on live bodies) what need to speak? For it is a thing hateful and inhuman, and has been justly reprov'd by Celsus. But yet it is no less true (as was anciently noted) that many of the more subtle passages, pores, and pertrusions appear not in anatomical dissections, because they are shut and latent in dead bodies, though they be open and manifest in live. Wherefore that utility may be considered as well as humanity, the anatomy of the living subject is not to be relinquish'd altogether, nor referred (as it was by Celsus) to the casual practices of surgery; since it may be well discharged by the dissection of beasts alive, which, notwithstanding the dissimilitude of their parts to human, may, with the help of a little judgment, sufficiently satisfy this inquiry. (Bacon 1858, 386)

Even more strikingly, he regards it as inhumane to cut animal fetuses out of the womb for the study of developmental biology. “For in the case of perfect land animals it would be less humane to study this by cutting fetuses out of the womb, except perhaps in the case of the accident of abortions, the hunt, and the like” (NO II. 41). In both of these examples, there are multiple ways to acquire the information we need, and Bacon advocates for the way that would cause the least amount of pain (whether human or non-human).

These, then, are some of the reasons why Bacon might think that technological and ethical progress go hand and in hand and why, consequently, he appears to have few reservations about the destructive power of Bensalem. That is all easily said, but there is an elephant in the room which I should address by way of conclusion. We seem to have progressed technologically perhaps even more than Bacon imagined—and aren’t we worse off for it? Doesn’t history show that we failed to use “right reason” to govern the use of technology? Our globe is warming, people are obese, our minds are being warped by Google and Twitter, and the NSA is spying on us. Where is the ethical progress? If it’s there, it doesn’t seem to be doing us much good. So I want to take up by way of conclusion whether the ethical progress that Bacon expected has been realized and has resulted in our better using technology to promote human flourishing.

I think it is undeniable that there has been some ethical progress since Bacon’s time, at least as measured by the degree of injustice done to groups such as women, slaves, and Jews in the most developed societies. I also think that we have, with important and ugly exceptions, tended to use technology more ethically as time has passed. The whole Green technology movement represents at least an attempt to be ethical in our use of technology. In the military, the trend has been towards sharper, more discriminating weaponry and the substitution of robots for human

beings. Despite the increased destructive potential of modern weaponry, innocent casualties are on the decline. Consider the fact that in the 13th century an estimated thirty to sixty million were killed in the Mongol conquests. I think it is also worth comparing the European colonization of the Americas, which led to the deaths of millions of native inhabitants, with our current approach to space exploration, which I would characterize as cautious and measured. The Baconian perspective here is not that we have become better people. We are still flawed and fallen. What has changed, between then and now, is that we have better institutions and better and more widely known techniques for realizing our ethical goals.

I claim, in short, that we are living in a world that looks very much like the world in *The New Atlantis*, and while it may not be a Utopia, it is surely not a dystopia either.

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