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Francis Bacon and the Philosophic Method of the Americans

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Abstract

Francis Bacon and the Philosophic Method of the Americans

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Abstract: The philosophy of Francis Bacon has an important and often overlooked place in the development of American political thought. John Dewey cites Bacon as the forefather of his own highly influential philosophical school, American pragmatism. I argue that, though Dewey is in many ways correct to look to Bacon as his predecessor, he overlooks or collapses certain crucial tensions in Bacon's philosophical project. This causes Dewey to misinterpret the political implications of the philosophic project to which he himself is an heir. By exploring the tensions that Bacon maintains, and Dewey collapses, between human knowledge and human power, science and democracy, and progress in the sciences and progress within states, I hope to shed light on the true implications of Bacon's philosophical project for American political thought.

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Chapter 1: Francis Bacon and the Philosophic Method of the Americans

When Alexis de Tocqueville observed that, “America is therefore the one country in the world where the precepts of Descartes are least studied and best followed,” he might well have said the same of Francis Bacon. Both Bacon and Descartes were instrumental in the remarkable upheaval in European philosophy of the seventeenth century to, “abolish the received formulas, destroy the empire of traditions, and overturn the authority of the master.”¹ Bacon’s emphasis on natural science, on the importance of experiments, and on the utility of knowledge as something to be employed “for the relief of man’s estate,”² make it more difficult to discern his fundamental philosophic precepts than Descartes’, but in fact this practical-minded obscurity is more in tune with the full picture Tocqueville gives of the philosophic method of the Americans than the radical doubt and clear philosophic maxims of Descartes.

The chief principle of the American philosophic method Tocqueville describes is that, “In most of the operations of the mind, each American calls only on the individual effort of his reason.” Tocqueville links this tendency with democracy and equality in the most radical sense: the rejection of all hierarchical forms of authority. But Americans employ this method chiefly in small practical affairs, and have disdain for abstract formulas of philosophic reason. Not only do Americans not read the seventeenth century authors to whom we owe our philosophic method, in Tocqueville’s time at least, we had not taken the trouble to articulate this method to ourselves. Americans, in Tocqueville’s

¹ Tocqueville, Alexis. *Democracy in America* pp. 403-404

² Bacon, Francis. *The Advancement of Learning* pg. 193

observation, had not been forced or even particularly tempted to apply the radical doubt of our philosophic method to undermining our political institutions and religious authority. According to Tocqueville, this has been crucial to our social and political health.

Tocqueville claims the philosophic method of the Americans has been tempered by two factors in American history and civic life. The first is Christianity, which he claims “gave birth to the Anglo-American societies,” and is, “mixed together with all the national habits and all the sentiments that the fatherland brings into being.” The second is the fact that the United States never went through a democratic revolution as spiritually destructive as the revolution in France, which pitted democratic against aristocratic ideals and incurred mutual hatred between proponents of each. These factors combined allow the Americans to confine their intellectual freedom within narrow limits and avoid the intellectual anarchy brought about by the revolution in France. In light of these reflections, he writes, “I believe that the men who live in the new societies will often make use of their individual reason, but I am far from believing they will often abuse it.”³

The tempered and confined intellectual freedom Tocqueville describes bears some resemblance to Bacon’s account of the limitations of his own project to redirect human learning towards science and technology for the relief of man’s estate. In both the *Great Instauration*, and *The Advancement of Learning*, Bacon admonishes his readers to confine the use of their senses in obtaining earthly knowledge “within the limits of duty

³Tocqueville, Alexis. *Democracy in America* pg. 407

in respect to things divine.”⁴ Bacon expresses what may now appear to be a naïve faith in the ability of, “sound reason and true religion,” to govern human learning and prevent the, “debasement of arts and sciences to purposes of wickedness, luxury, and the like.”⁵ He consistently appeals to the potential benefits of science in practical affairs, and he is neither a radical democrat, nor a radical partisan of aristocracy. In the *Essays or Counsels Civil and Moral*, he praises aristocratic institutions without denying the virtues of democratic states, and advises against dramatic political innovations in general.⁶

It has always been difficult contain philosophic and scientific inquiry within the bounds of a secular and politically neutral sphere, however. And the advantages Tocqueville points to in American social life and history that enabled people in the United States to do so more effectively than those in France have since begun to degrade. Christianity continues to play an important role in American life, but it is no longer unquestioned, especially by proponents of science. And though we have not been through any subsequent democratic revolutions, we have fought a bloody Civil War, been forced to confront the evil of slavery, and struggled with the tension between economic classes in the wake of industrialization. Moreover, in the intervening time between Bacon’s writing and Tocqueville’s, Tocqueville’s writing and our own, the fruits of the Baconian project of progress in the arts and sciences have become ever more abundant.

Industrialized capitalism, increased speed of transportation and communication, and great strides in medicine the technology of war, have transformed political and social life with

⁴ Bacon, Francis. *The Great Instauration* Preface pg. 74; *Advancement of Learning* Book I pg. 162-164

⁵ Bacon, Francis. *The New Organon* I.129

⁶ Cf. Bacon, Francis. *Essays and Counsels*, Essays 14 *On Nobility*, and 24 *On Innovation*

or without the approval of philosophers. The United States, like every other technologically advanced nation, struggles to define the appropriate role of science in politics, or even to agree on a moral framework with which to begin to tackle the political and moral questions raised by scientific progress as the general faith in “sound reason and true religion,” to govern human power over nature wanes.

Beginning in the late nineteenth century, the American began to develop a distinctive philosophic school motivated, in part, by these very questions. The American pragmatists reject the limitations that Tocqueville praises, however, and articulate an alternate view of the attitudes towards technological progress and intellectual freedom that form the basis of a healthy democratic state. These thinkers too, acknowledge a debt to Francis Bacon as the founder of their philosophic approach. I will explore the relationship between the American pragmatists, especially John Dewey, and Bacon’s original philosophic project, in the hopes that it will shed light on the philosophic method of the Americans, and the political considerations Tocqueville raises.

Chapter 2: The American Pragmatists

Tocqueville's account of the American philosophic method anticipates many of the distinctive characteristics of American pragmatism. Not only do the pragmatists avoid, "the spirit of system, the yoke of habit, the maxims of class, and, up to a certain point national prejudices," they take, "tradition merely as a piece of information and present facts only as useful preparatory work for doing differently and better."⁷ American pragmatist philosophers of the late nineteenth and early twentieth centuries, such as Charles Pierce, William James, and John Dewey, began to define and articulate certain elements this way of thinking as a self-conscious philosophical method defined within a wider philosophical context. No longer the almost unconscious habit of mind that Tocqueville describes, pragmatism commits to definite claims about the relationship between human beings and the natural world. But the philosophical works of the pragmatists, especially John Dewey, are intimately tied to the American social and political experience. A more recent and radical proponent of pragmatism, Richard Rorty has appealed to Dewey as a key figure in shaping the deepest aspirations of American democracy, especially on the political left.⁸

Dewey points to Francis Bacon as the founder of the pragmatic way of thinking, and paints a very different picture of the political implications of Bacon's philosophy than the one I sketched out above. Dewey, like Tocqueville, sees Bacon as a leader of a

⁷ Tocqueville, Alexis *Democracy in America* pg. 403

⁸ Cf. Rorty, Richard *Achieving our Country*

great movement in philosophy, but he is also sees him as the founder of a great movement in industry, politics and religion, in which the ancient understanding of the world as a closed and ordered, eternally subsisting, whole, began to dissolve and human beings came to see nature with modern eyes, as an open system with no permanent order or hierarchy, within which man has an important role in shaping his own fate. Dewey claims that his characteristically modern idea has gradually developed and spread, with profound effects on all aspects of human life and culture, material as well as spiritual. Dewey proposes to revive our Baconian modern origins in order to understand ourselves and find our way forward in the future. He calls his project one of “philosophical reconstruction,” and aims to articulate the prophetic and new in Bacon’s philosophy in order, “to permit the Baconian aspirations to come to a free and unhindered expression.”⁹

Dewey must reconstruct, not simply recapitulate, the progress of modern ideas, because this progress has not been simple and unimpeded. Human beings have retained remnants of old systems of social, political, and pre-scientific thought that Dewey claims are entirely incompatible with the spirit of the new philosophy. We have failed to elucidate “a free and unbiased formulation of the meaning of the power to direct nature’s forces through knowledge- that is, purposeful, experimental action acting to reshape beliefs and institutions.”¹⁰ Francis Bacon is no exception. According to Dewey, Bacon did not grasp the full implications of the movement he began. “Like many another prophet he suffers from a strange intermingling of old and new... What makes Bacon

⁹ John Dewey. *Reconstruction in Philosophy* pg. 30

¹⁰ *ibid*

memorable is that breezes blowing from a new world caught and filled his sails and stirred him to adventure in new seas. He never himself discovered the land of promise, but he proclaimed the new goal and by faith he descried its features from afar.”¹¹

Bacon’s political and religious caution, according to Dewey, was nothing but the weakness of his philosophic vision. The way forward consists in rejecting not only the “yokes of habit, the maxims of family, and the opinions of class,” but also all the other political and moral views which impede modern human beings from embracing progress and accepting new human possibilities. In his chapter on Science and Free Society in his book *Freedom and Culture*, Dewey aims to root out the mistaken belief that science is merely a tool, “completely neutral and indifferent as to the ends and values which move men to act.”¹² Dewey insists instead that science is inherently both moral and political, and that scientific men have not only the power but the responsibility to shape the desires and beliefs of their fellow citizens.

The stakes for Dewey’s project are high. The advance of science and technology, he suggests, can either lead us towards increasing political freedom and democratic openness or towards totalitarianism:

Science through its physical technological consequences is now determining the relations which human beings, severally and in groups, sustain to one another. If it is incapable of developing moral techniques which will also determine these relations, the split in modern culture goes so deep that not only democracy but all civilized values are doomed. Such at least is the problem. A culture which permits science to destroy traditional values but which distrusts its power to create new ones is a culture which is destroying itself. ¹³

¹¹ *ibid* pg. 16

¹² Dewey, John. *Freedom and Culture* pg. 137

¹³ *ibid* pg. 154

For Dewey, science and politics are not ultimately separable, and democratic values cannot be cleanly separated from metaphysical views. “Democracy,” according to John Dewey, “is neither a form of government nor a social expediency, but a metaphysic of the relation between man and nature.”¹⁴ Richard Rorty interprets this statement to mean that, for Dewey, the word “democracy” connotes a new conception of the human condition, one in which human beings are not bound by any authority higher than the freely achieved consensus of human beings. Dewey’s pragmatism is bound up with a radical form of secularism, which denies not only the authority of an all-powerful God in human moral and political life, but of any metaphysical or philosophically determined fixed moral standard. Rorty insists on facing this extreme implication of Dewey’s political thought and accepting it as a defining feature of leftist democratic theory. He recognizes that many thinkers find Dewey’s “secular, antiauthoritarian, vocabulary of shared social hope,” childlike, naïve, and dangerous, but nevertheless insists that precisely this language of hope is necessary to keep alive the true and active spirit of the American political left, “the party of hope,” which “sees our moral identity as something to be achieved.”¹⁵

Rorty’s identification of Dewey’s conception of democracy with the spirit of the American left is somewhat paradoxical however. Elsewhere, Rorty points to the contest between the left and the right, which he defines as the party for those who see our moral

¹⁴ Dewey, John. *Maeterlinck’s Philosophy of Life*, Middle works vol. 6 pg. 135

¹⁵ Cf. Rorty, Richard. *Achieving our Country*

identity as already achieved, intact, and in need of preservation, as constitutive of American democracy. His self-consciously partisan account of the true meaning of American democracy is in some tension with his conception of democratic institutions and procedures as the impartial forums in which “human beings who do not share the same needs,” and who harbor deep philosophical disagreements, can “conciliate these various needs and, thereby widen the consensus about how things are.”¹⁶ In order to be fully consistent, Rorty must admit that without democratic consensus, the secular and hopeful vision of the American left is no more philosophically or politically justified than the conservative vision of the American right. Nevertheless, he admires Dewey’s conception of democracy for its raw intellectual courage to embrace the unknown and hope for new and better political possibilities from the future.

Rorty’s pragmatism is more radical than Dewey’s, but also weaker. Dewey expresses his vision of a secular democracy that embraces scientific inquiry as the true and necessary path to the fulfillment of the most fundamental aspirations of American democracy, and attempts to persuade his opponents of this truth. Rorty, on the other hand, renounces his ability to prove that Dewey’s teaching is somehow truer than his opponents. As long as there is a powerful contingent in American society which refuses to imitate and admire Dewey’s daring embrace of the unknown, as Rorty suggests there may always be, Rorty’s conception of American pragmatism threatens to undermine the very possibility of Dewey’s vision for democratic culture in the full sense.

¹⁶ Rorty, Richard. *Achieving our Country* pg. 35

Dewey's conception of democracy would require a great change in American political attitudes and assumptions. Not only does Dewey undermine the faith of those Americans who consider themselves to be both good Christians, Muslims, Hindus, or Jews and good citizens. He opposes those Americans who do not have strong religious beliefs, but who still practice something like the philosophic method Tocqueville described, who employ Baconian and Cartesian habits of mind without taking much interest in their philosophical origins or implications. To be persuasive, Dewey must show them that they cannot so easily accept progress in modern science and technology without embracing that same level of radical openness to change in politics and morality. But the kind of reliance one's own conscience and distrust of philosophical systems that Tocqueville describes inclines human beings to this very position. Nevertheless, Dewey makes it his project to combat the moral laziness he sees all around him, with a scientific moral and civic education that will empower men and women of science to shape the desires and ends of human life.

In order to do this, Dewey chooses one side of Bacon's teaching and dismisses the other as "belonging to the past from which [Bacon] thought he had escaped." Dewey systematically collapses tensions that Bacon scrupulously maintains. In so doing he distorts the very aspirations he claims to be bringing to fruition, and fails to heed important cautions that carry over from Bacon's project into his own. I will explore three of those tensions in what follows: the tension between human knowledge and human power, the tension between science and democracy, and the tension between progress in the sciences and progress in states.

Chapter 3: Knowledge and Power

“The best known aphorism of Bacon,” Dewey claims, “is that knowledge is power.”¹⁷ But the simple identification of knowledge with power does not appear anywhere in Bacon’s works.¹⁸ Bacon is famous for redirecting human knowledge towards the production of new goods and powers, “for the glory of God and the relief of man’s estate.” Knowledge itself will be more exalted, he suggests, if it is conjoined with action, “A conjunction like unto that of the two highest planets, Saturn, the planet of rest and contemplation, and Jupiter, the planet of civil society and action.”¹⁹ But though Bacon brings human knowledge and human power into closer conjunction than any philosopher before him, he maintains a distinction between the two. This is the first and most fundamental of the tensions in Bacon’s philosophy that Dewey either purposefully collapses or fails to understand.

In Book I, aphorism three, of the *New Organon*, Bacon writes: “Human knowledge and human power meet in one, for where the cause is not known the effect cannot be produced.” Human knowledge and human power touch at this crucial point, according to Bacon, because of the impotence of human beings without knowledge of

¹⁷ Dewey, John. *Reconstruction in Philosophy* pg. 17

¹⁸ Bacon does use the phrase “*scientia est ipse potestas*” in his 1597 *Meditationes Sacrae*. The phrase is misleading when taken out of context, however, because it is part of a theological argument exploring the nature of the omniscience and omnipotence of God. Furthermore, the phrase is more accurately translated “knowledge itself is a power,” since Latin lacks the indefinite article. Latin also has two words for power. *Potestas*, the word used here, carries connotations of authority and is often used for the power of God. *Potentia*, would more likely be used to describe a human faculty.

¹⁹ Bacon, Francis. *The Advancement of Learning* pg. 193

nature and the limitations of human insight into nature without experiment. This does not mean that the object of the human desire to know is indistinguishable from the human power to command nature. Bacon indicates that they are in fact different in Book II, Aphorism four. Here, he distinguishes between the road to human power and the road to human knowledge, although they “lie close together and are nearly the same.” He claims that it is safer to “raise the sciences from those foundations which have a relation to practice, and to let the active part be as the seal which prints and determines the contemplative counterpart,” because of the human tendency to dwell in abstractions if the contemplative part is allowed its way. This implies that his near identification of knowledge and power is a strategic choice, and a correction of deep-seated human tendencies, but that ultimately the two remain distinct.

Philosophy, for the pragmatists, is an instrument to be used for practical purposes, not a “mirror of nature,” which might hope to reproduce the world accurately as it is.²⁰ Rorty quotes Bacon as an example of the “early seventeenth century conceit,” that there is a division within human beings between our “glassy essence,” or our rational reflective minds, and the material essence of our bodies and the functions of its grosser organs. There is obvious evidence for this interpretation in Bacon’s writings, but it is difficult to reconcile with Dewey’s view. Dewey attributes something more like the pragmatist view to Bacon when he claims that Bacon condemned the great body of learning that existed previously as “not-knowledge,” because, “it was otiose, not operative,” and sought to

²⁰ Cf. Rorty, Richard. *Philosophy and the Mirror of Nature*

replace it with a philosophy of power and scientific discovery.²¹ Bacon has somehow managed to give the impression both that he values knowledge as a good in itself, which must be sought by the rational mind alone, and that knowledge is a good only insofar as it confers the human beings with power over nature, a power which cannot be purely rational, but must be mixed with the affections and the will.

Bacon explicitly maintains, in apparent agreement with the ancients, that contemplation of nature is the proper goal of philosophical reflection. In fact, he affirms contemplation as “a thing worthier and loftier than all utility and magnitude of works,” and claims to be, “building in the human understanding a true model of the world such as it is in fact not such as man’s own reason would have it be.”²² In order to correct the human tendency to impose the stamp of our own fallible reason onto nature, however, in attempting to discern the natural world as it is, he proposes to join contemplation with action, knowledge with power, by testing the verity of human conceptions of nature against the human power to effect natural processes. “Truth, therefore, and utility are here the very same things. And works themselves are of greater value as pledges of truth than as contributing to the comforts of life.”²³

Bacon claims further that he does not wish to “pull down and destroy the philosophy and arts and sciences which are at present in use,” by declaring them otiose, as Dewey claims. In fact, Bacon claims that the philosophical reflections of his predecessors serve an important practical purpose which his own cannot fulfill.

²¹ Dewey, John. *Reconstruction in Philosophy* pg. 17

²² Bacon, Francis. *The New Organon* 1.124

²³ *ibid*

There is no reason why the arts which are now in fashion should not continue to supply matter for disputation and ornaments for discourse, to be employed for the convenience of professors and men of business, to be, in short, like current coin which passes among men by consent. Nay, I frankly declare that what I am introducing will be but little fitted for such purposes as these since it cannot be brought down to common apprehension, save by effects and works only.²⁴

Bacon's critique of his predecessors goes beyond the disdain of a practical man for theoretical men. His contempt is all the more pronounced when he cedes the ground of everyday use to his rivals and recommends their philosophy to the understanding of common men. In doing so, Bacon implicitly claims the ground his rivals would prefer to occupy, the difficult and rare but true attempt to contemplate the nature of things. But though Rorty's interpretation of Bacon appears to be more accurate than Dewey's on this score, Rorty fails to acknowledge the deep connection, so evident to Dewey, between Bacon's account of the human understanding and the pragmatist view, that is, the way in which Bacon brings the path to human knowledge so close to the path to human power, that they almost merge into one.

Bacon compares the human understanding to a mirror, as Rorty claims, but a false one. Bacon writes:

[I]t is a false assertion that the sense of man is the measure of things. On the contrary, all perceptions as well as the sense of the mind are according to the measure of the individual and not according to the measure of the universe. And the human understanding is like a false mirror, which receiving rays irregularly, distorts and discolors the nature of things by mingling its own nature with it.²⁵

This aphorism introduces Bacon's account of "the idols of the tribe," those false notions rooted in human nature itself which, "not only so beset men's minds that truth

²⁴ Bacon, Francis. *The New Organon* I.128, see also Preface to *The New Organon* pg. 88

²⁵ *ibid* 1.41

can hardly find entrance,” but also confuse and frustrate any true notions which might somehow slip through. It becomes clear in aphorisms 38-41, and 45-57, on the *Idols of the Tribe* that Bacon’s refounding of philosophy is based on profound doubts about the ability of the human mind to grasp the nature of the universe. Bacon does occasionally seem to make the boastful claim to be able to sweep away the idols of the mind and “apply the understanding, thus made fresh and even, to a fresh examination of particulars.”²⁶ But his suggestions for a new, more certain, path, of inquiry are based on a thorough examination of the weaknesses of human judgment. Bacon articulates, then assumes, and finally incorporates these weaknesses into his account, but he does not eliminate them.

Bacon’s plan of inquiry prevents human beings from following the natural course of their understanding, from proceeding directly to the kind of knowledge the human mind longs to attain. In aphorism 19 he writes:

There are and can be only two ways of searching into and discovering truth. The one flies from the senses and particulars to the most general axioms, and from these principles, the truth of which it takes for settled and immovable, proceeds to judgment and to the discovery of middle axioms. And this way is now in fashion. The other derives axioms from the senses and particulars, rising by a gradual and unbroken ascent, so that it arrives at the most general axioms last of all. This is the true way, but as yet untried.

Bacon softens the implications of his method by referring to the first way as though it is merely a current fashion, and suggesting that his new way is primarily a change in the order of the operations of the mind. But in these few sentences he proposes

²⁶ *ibid* I.97

to replace the whole tradition of Aristotelian philosophy with a new account of both the proper method and the proper aims of human inquiry. His emphasis on the gradual ascent from sense perceptions to axioms imposes significant restraint on the human mind and severely limits the kind of knowledge we can hope to attain.

For example, in aphorism 48 Bacon remarks upon the human tendency to press beyond the limits of our experience with falsely presumed principles of logical necessity. Just as we cannot conceive of the end or limits of time and space because we always imagine something beyond them, we refuse to rest satisfied with the most general principles we have yet discovered in nature and insist on referring them to a prior cause. Like children, we continue to ask why ad infinitum, but we are often as far from knowing the prior causes we seek in nature as from comprehending infinite expanses of time and space. In fact, we are likely to invent not only prior causes, but final causes, after our own image. “And then it is that in struggling towards that which is further off [the human understanding] falls back upon what is near at hand; namely on final causes, which have relation clearly to the nature of man rather than to the nature of the universe; and from this source it has strangely defiled philosophy.”

Bacon claims, in contrast, “that the most general principles in nature ought to be held merely positive, as they are discovered, and cannot with truth be referred to a cause.” To correct the tendency of the human mind to understand nature in its own image, he recommends that human beings recognize and accept the point beyond which we do not understand nature at all. As positivistic natural science progresses, we may be able to move this point to encompass greater levels of generality, but we must not try to

leap beyond it to interpret our place within the whole of nature.

So far, Bacon's critique of the philosophic method he rejects seems to be based purely on his desire to avoid the distortion of nature by the human intellect and put philosophy on a surer path. But Bacon points to a major problem with any such attempt in the very next aphorism: "The human understanding is no dry light, but receives an infusion from the will and affections; whence proceed sciences which may be called 'sciences as one would.'" Some of the marks of passion and preference can be traced out and corrected in our understanding, but not all of them. "Numberless.. are the ways, and sometimes imperceptible, in which the affections color and infect the understanding."²⁷ Bacon seems to knowingly hold up an unattainable goal for his readers, therefore, and to ask a great sacrifice of them as they strive to attain it. Bacon undermines any claim that there is a natural harmony between human reason and the nature of things. We must artificially restrain our reason from leaping to conclusions, or even questions, of cosmological importance, and always be aware of the distortions that our minds are prone to. But we can never be sure, even in small matters, that our understanding is not infected by our will.

This is the point at which many critics of the enlightenment, including Rorty, reject the Baconian view. The hope of scientists and enlightenment philosophers to produce an accurate representation of the universe, a true model of the world within the human understanding, has been mocked by those who proclaim the futility of the exercise on account of the inescapable power of the human will over the human understanding.

²⁷ *ibid* I.49

Yet at the dawn of the enlightenment and of modern natural science Bacon seems already to have seen this power, and also to have aimed at producing such an accurate representation.

Much later, in aphorism 104, Bacon repeats and expands upon the two kinds of inquiry described in aphorism 19. He no longer speaks of two possible ways of seeking after truth, but warns against the former as simply a mistake: “The understanding must not be allowed to jump and fly from particulars to remote axioms of almost the highest generality.” He adds here that the predominance of this practice in the past has been the result both of the nature of syllogistic demonstration and the natural impulse of the human mind, and presents his own new practice as a the proper way to counteract these forces. He proposes to reign in the human understanding by training it to ascend slowly from particulars to axioms starting with the lowest level of generality. “The understanding must not be supplied with wings, but rather hung with weights, to keep it from leaping and flying.”

This is order of inquiry is best, according to Bacon, because “the middle are the true and solid and living axioms, on which depend the affairs and fortunes of men.” In the future, Bacon suggests, those axioms which are truly most general will no longer be, “notional and abstract and without validity (as the ones we have now),” but they will be limited by the intermediate axioms on which they are founded. If we consider this suggestion carefully, the connection between Bacon’s proposed model of the universe and Dewey’s pragmatism becomes clear. Bacon, rejects the human desire to know the whole of nature only to appeal to the more immediate desires of human beings to

improve their own affairs. In fact, even the furthest reaches of the new philosophy will be tied to and limited by the affairs and fortunes of men. The middle axioms are solid not because they are cleansed of the strange defilement of wishful human thinking, but because they are based on a less exalted form of wishful human thinking that does not have to remain speculative, but can be tried and tested in human life. Like the philosophers before him, whom he criticizes, Bacon builds his model of the universe on the desires of men. But he sacrifices the human desire to know our place within a divinely ordered whole to the desire to conquer nature and live in comfort and prosperity on earth. The human desire for knowledge remains distinct from the desire for comfort and prosperity, but nevertheless remains intimately tied to it.

Chapter 4: Science and Democracy

The famous phrase, “Knowledge is power,” or “*scientia potentia est*,” actually makes its first appearance in print a generation after Bacon, in the work of his one-time secretary Thomas Hobbes. In Chapter X of *De Homine* Hobbes writes: “*Scientia potentia est, sed parva; quia scientia egregia rara est, nec proinde apparens nisi paucissimis, et in paucis rebus. Scientiae enim ea natura est, ut esse intelligi non possit, nisi ab illis qui sunt scientia praediti.*” This translates roughly to, “Knowledge is a power, but a small one; for the eminent science (knowledge) is rare, and therefore is not apparent except to a very small degree and in few things. For the nature of knowledge is such that no one is able to understand it to be eminent except those who have possessed it.” Hobbes’ formulation adds another important qualification to the identification of knowledge with power. Knowledge is only one part of human power, and one that is rarely recognized by those who do not already possess it. It is a strange and weak form of power that is usually hidden behind its opposite: the opinions of ignorant men.

To some extent, Dewey recognizes ignorance and prejudice as a stumbling block to the full identification of knowledge with power, but he hopes to succeed in overcoming this challenge even where his Enlightenment predecessors failed. He suggests that it is necessary for those interested in science, politics, and education to work together in fostering what he calls free culture, in which intellectual freedom is allowed to flourish while prejudice is gradually undermined. Culture, according to Dewey, is the complex of conditions that shape and determine how human beings relate to each other in

society. He argues that in fact political institutions are the effects of culture, not the causes of its development. Despite his sympathy with the project of Enlightenment philosophers, and the American founders whom they inspired, Dewey blames them for failing to ensure true intellectual and political freedom through the cultivation of freedom in all the interlocking aspects of human life. Institutional provisions for freedom of the press and general education and literacy, for example, are not strong enough to the combat ignorance, bigotry, and superstition that threaten to destroy democracy. Observing the immense power of propaganda in the First and Second World Wars, Dewey fears that the free press can easily be used to promote the very ignorance and superstition it supposedly designed to combat.

To truly combat ignorance, Dewey suggests the most important social good that science has to offer is the spread of what Dewey calls the “scientific attitude,” or the “scientific morale.” This way of thinking, Dewey suggests, was first outlined by Bacon in his attempt to abolish the idols of the mind. It is marked by the willingness to withhold belief until adequate evidence is obtained, and to follow the suggestion of evidence even against one’s personal inclinations, as well as the ability to hold preliminary judgments in suspense as hypotheses rather than dogmas, and above all to delight in new fields of inquiry and new problems.²⁸ All of four of these attitudes and mental habits tend towards distrust of traditional systems of belief. Dewey argues that the spread of the scientific attitude, despite the fact that it runs counter to natural human tendencies and cherished beliefs, is evidence of the power of science to create new human desires and ends. But the

²⁸ Dewey, John. *Freedom and Culture* pg. 145

enormous power of science to change society comes with an enormous responsibility to do so thoroughly and thoughtfully.

While it would be absurd to believe it desirable or possible for everyone to become a scientist when science is defined from the side of subject matter, the future of democracy is allied with the spread of the scientific attitude. It is the sole guarantee against wholesale misleading by propaganda. More important still, it is the only assurance of the possibility of a public opinion intelligent enough to meet present social problems.²⁹

Dewey believes that science and democracy are mutually reinforcing. But for this to be the case, science must be accessible to everyone in the most important sense.

Dewey claims, “It is not becoming, to put it moderately, for those who are themselves animated by the scientific morale to assert that other persons are incapable of coming into possession of it and being moved by it.”³⁰ Such an assertion is either the result of professional snobbery, according to Dewey, or sheer thoughtlessness. He sets out to show, therefore, that proponents of science are wrong to assume that scientific attitudes cannot transform human culture and thereby human desires. But he does not question his more radical and fundamental premise, which is that the scientific attitude is not only capable of producing intelligent public opinion but should replace traditional morality and religious beliefs as the foundation of a healthy democratic state.

Dewey’s analysis is directly opposed to Tocqueville’s. Instead of praising the tempering effect of religion on radical doubt and democratic zeal, Dewey laments its influence as an impediment to these very things. “The historic influence of religions has often been used to magnify doctrines that are not subject to critical inquiry and test. Their

²⁹ Ibid pg. 148-149

³⁰ Ibid pg.147

cumulative effect in producing habits of mind at odds with the attitudes required for the maintenance of democracy is probably greater than is usually recognized.” Dewey’s disagreement with Tocqueville is less about the effects of religion than the habits of mind necessary to maintain democracy. Both see the enormous power of religious beliefs in shaping attitudes towards politics, and the dangers involved in a sudden loss of such beliefs. Dewey points to certain, “shrewd observers,” who have said that, “one factor in the relatively easy victory of totalitarianism in Germany was the void left by theological beliefs.”³¹ These observations are not unlike Tocqueville’s observations on the French revolution, and his fears for the spread of despotism in countries suddenly and violently deprived of traditional social structures and religious beliefs. But where Tocqueville regrets the void left in the wake of religion, Dewey regrets the religious beliefs he claims created that void.

Tocqueville doubts the ability of human being to live without dogmatic beliefs. “There is no philosopher in the world so great that he does not believe a million things on the word of others and who does not assume many more truths than he has proven.”³² But Tocqueville claims this state of affairs is as desirable as it is necessary. Constant and radical doubt of all received opinion would leave the human mind independent, but weak. He compares the bondage of the human mind to received opinion to a salutary form of servitude that allows it nonetheless “to make good use of liberty.” Dewey, on the other hand, is more fearful of most forms of received opinion. He claims, “Nothing can be

³¹ *ibid* pg. 151

³² Tocqueville, Alexis. *Democracy in America* pg. 408

more disastrous socially than that the great majority of persons should have [their opinions] formed by habit, accidents of circumstance, propaganda, personal and class bias.” He does not deny that many people will have to rely on some received opinions, but he distinguishes between dogmatic received opinions and those which were at least originally formed on the grounds of scientific evidence and “procured by systematic and competent inquiry.”³³

Dewey reassures his readers, however, that “extension of the qualities that make up the scientific attitude is quite a different matter than dissemination of the results of physics, chemistry, biology and astronomy.” He does not claim, then, that human beings must be liberated from dogmatic beliefs in Toqueville’s sense, the mental servitude Tocqueville claims comes to “any man who accepts an opinion on the word of others.” He seems merely to propose to replace traditional religious authority over human opinion with the authority of those engaged in scientific inquiry. If the scientific attitude makes human beings critical in accepting new truths, and intelligent and sophisticated in avoiding the manipulation of propaganda, however, it should discourage them from accepting the moral opinions from any authority without sufficient evidence. And yet, Dewey claims, science cannot appeal directly to human reason; it must shape human desires indirectly through culture. “The position stated at its worst is that science operates as a part of folklore, not just as science.”³⁴

³³ Dewey, John. *Freedom and Culture* pg. 148

³⁴ *ibid* pg. 148

Dewey suggests that we have been unwise to set science apart from the rest of culture as something altogether too pure to appeal to human imagination or emotion. In the future we should effect a fruitful union between the rational and emotional appeal of science. He calls this union art.³⁵ But he hesitates to discuss the need of art in science for fear of being misunderstood. “For of late there has been an active campaign, carried on in the name of the social function of art, for using the arts... in propaganda for special views which are dogmatically asserted to be necessary.” His only defense against the accusation that what he is proposing is a “counter-campaign on behalf of democratic ideas,” is to present himself as reasonable and open-minded rather than dogmatic, and to emphasize the fact that he has no choice. “Ideas are not effective as bare ideas but as they have imaginative content and emotional appeal.”³⁶

The most powerful tools of persuasion, however, are material. The means to get a wide popular audience to embrace a scientific outlook, and to gradually reject cherished beliefs, is not actually to attack those beliefs head on, at least not at first. It is much more effective to offer scientific inquiry as a path to the attainment of new goods and powers that people already desire. Dewey admits, “That the popular esteem of science is largely due to the aid it has given to men for attainment of things they wanted independently of what they had learned from science is doubtless true.”³⁷ Like Bacon, his pragmatic approach to philosophy ties him to the preexisting desires of men, but he hopes to get beyond this unidirectional relationship, so that proponents of science can guide and shape

³⁵ *ibid* pg. 150

³⁶ *ibid*

³⁷ *ibid* pg. 137

the desires they aim to fulfill. Dewey fears that, unless we can somehow get beyond the original appeal of science as a morally neutral means to attaining all kinds of selfish and misguided human ends, we are in danger of unleashing new human powers without any guiding moral force at all. As long as modern science hides behind the irresistible appeal of new goods and morally ambiguous new powers over nature without acknowledging itself as an essentially progressive moral force that calls all our traditional beliefs into question, we will be deeply confused and easily manipulated.

But it is not clear what Dewey sees as the source of the superior moral insight and authority of science, since he himself identifies human knowledge with human power, and denies it any higher purpose or source. Moreover, one might well object that the fact that bare ideas are not effective alone is evidence of the fact that the scientific morale is rarely dominant among the majority of human beings. Dewey's art of spreading the scientific morale, as distinguished from disseminating the actual discoveries of scientific inquiry, short circuits the supposedly critical insistence on evidence that characterizes the scientific morale itself, by appealing directly to the emotions. Dewey does not insist on any hard and fast distinction between rational pursuit of truth and the emotional appeal of morality, however. All our moral failures, according to Dewey, are failures of our rational judgment, our emotional sensitivity, and our capacity for sympathy combined, and all exercise of intelligence has moral implications.³⁸ Dewey prefers the scientific outlook for its openness to uncertainty and change as opposed to the resistance traditional systems of morality put up against new human possibilities. Thus he is more interested in

³⁸ Dewey, John. *Philosophical reconstruction* pg. 94

exploring the better and worse consequences of different kinds of folklore regarding the pursuit of truth than in distinguishing truth from folklore.

But this means Dewey has to give up the ground of truth as distinct from utility in arguing for the superiority of the scientific moral over traditional morality. And he cannot offer any proofs of the superior utility of the scientific morale in supporting a healthy democracy, because it is an experiment that has never before been tried. He proposes to employ the persuasive power of art in the overthrow all traditional morality on the hunch that evolving moral standards are necessary in a quickly changing world. But in so doing he exposes his own support for the scientific morale over traditional moral beliefs as little more than a preference, and simultaneously dilutes the standards of the scientific morale. The position stated at its worst is that Dewey transforms the scientific outlook into a prejudice against prejudice.

Dewey looks to Bacon as one of the original proponents of the habits of mind he praises, but Bacon himself avoids claiming, with Dewey, that these habits of mind can be universally adopted or that they are somehow necessary for civic virtue. In fact, Bacon claims in the preface to the *New Organon* that his philosophy, “will not be much available,” for, “it does not flatter the understanding by conformity with preconceived notions. Nor will it come down to the apprehension of the vulgar except by its utility and effects.” As a spokesman for the advancement of learning and a forefather of the enlightenment, Bacon is as interested in the potential power of knowledge to change the world as Dewey, and fully aware that potentially powerful but naked truths are not sufficient to effect great change alone. But Bacon’s rhetorical strategy is more subtle

and insinuating than Dewey's, and maintains a distinction between the indulgence and sympathy for his new mode of inquiry, which he hopes to cultivate in many if not all his readers, and the ability to judge intelligently for oneself.

In the preface to the *New Organon*, Bacon asks his readers not to presume to judge his work while their minds are still obstructed by the very opinions and methods of the old philosophy he rejects. Instead, he exhorts the reader to “correct by seasonable patience and due delay the depraved and deep-rooted habits of his mind. And when all this is done and he has begun to be his own master, let him (if he will) use his own judgment.”³⁹ But Bacon clearly does not expect all, or even most of his readers to undertake this reformation of their own minds successfully, and he certainly does not shun artful persuasion as beneath him or unnecessary. In fact, within the same paragraph, he claims to have made it his care and study to propound things “not only true, but... also presented to men's minds, how strangely soever preoccupied and obstructed, in a manner not harsh and unpleasant.” Bacon proposes to work around, rather than simply destroy, the preconceived notions which might cause most of his readers to reject his teaching, to prepare their minds to accept his refounding of philosophy, as a matter of gentleness. He goes on to adapt his observations to the understanding of his readers so gently, and to expound the utility and effects of the advancement of human knowledge so persuasively, that the distinction between his philosophy and his rhetorical strategy is easily overlooked. But this very gentleness

³⁹ Bacon, Francis. Preface to the *New Organon* pg. 89

comes at the cost of hopes for any truly universal enlightenment and puts him at odds with Dewey.

Bacon begins Aphorism I.92 of the *New Organon* claiming that, “By far the greatest obstacle to the progress of science and the undertaking of new tasks and provinces therein is found in this- that men despair and think things impossible.” Bacon turns at this point in the work, therefore, to speak regarding hope, which becomes a major theme of the rest of Book. He indicates that the reason he must proceed to the cultivation of hope is that without hope the rest of his teaching “tends rather to make men sad... than to induce any alacrity or the whet their industry in making trial.” And Bacon needs industrious followers and helpers in the work he is proposing. One of the distinctive characteristics of his vision for the refounding of philosophy is that he claims no longer to rely on the naked intellects of a few rare philosophers for the advancement of human knowledge, but to put all men of even moderate intelligence on a fairly level field to work together towards amassing more knowledge than any man could alone.

In the preface to the *New Organon*, Bacon illustrates his suggestion for a new artificial method for guiding the human mind by way of an analogy to mechanical engineering. “Let us suppose that some vast obelisk were (for the decoration of a triumph or some such magnificence) to be removed from its place, and that men should set to work upon it with their naked hands; would not any sober spectator think them mad?” To rely on the unaided strength of the most impressive men is only slightly more insane, Bacon suggests, than to rely on the unaided strength of a great mass of men. Machinery,

more than brute human strength, is necessary, “in every great work to be done by the hand of man.”⁴⁰

Dewey is so struck by the hope Bacon cultivates for collective inquiry on a large scale that he fails to notice Bacon’s hints at the difference between his deepest philosophical reflections and the substance of this hope. He also fails to notice that Bacon recognizes any meaningful division between the intellectual abilities of one human being and another. He claims Bacon ascribed to “the rather absurd notion of a method so perfected that differences in natural human ability might be discounted, and all be put on the same level in the production of new facts and new truths.” And yet he forgives Bacon this supposed absurdity on account of the picture he draws in the *New Atlantis* of an entire state dedicated to collective inquiry. For Bacon, Dewey claims, “Power over nature was not to be individual but collective; the Empire, as he says, of Man over Nature substituted for the Empire of Man over Man.”⁴¹ It is this collective vision which leads Dewey to conclude that Bacon is the prophet of pragmatism.

But Bacon does not to deny the great differences between one man’s strength and another, with or without mechanical help. He merely suggests that, from the point of view of the work to be done, such differences are much less important than the kinds of advances in technology and methodical inquiry that allow men of ordinary strength and intellect to participate in projects on a large scale. To understand the foundations and ultimate ends of such a project, however, to be able to judge it critically and intelligently

⁴⁰ Bacon, Francis. Preface to the *New Organon* pg. 87

⁴¹ Dewey, John. *Reconstruction in Philosophy* pg. 21

with an unobstructed mind, is another matter altogether. In the *New Atlantis* Bacon does paint a picture of a state in which the chief institution is dedicated to “the knowledge of causes, the secret motions of things; and the enlarging of the bounds of Human empire; to the effecting of all things possible.”⁴² But this institution, called Solomon’s House, is exclusive and secretive. The great majority of the people of Bacon’s imagined city, Renfusa, which means, “having the nature of sheep” do not participate in expanding the empire of man over nature. They receive the benefits of human conquest over nature only passively. They live in peace and comfort, but are neither intellectually enlightened nor politically free. It is remarkable that Dewey, as a theorist of free culture, could overlook this fact.

⁴² Bacon, Francis. *The New Atlantis*. pg. 574

Chapter 5: Progress in the Sciences and Progress in States

As we have seen above, Dewey believes that scientific progress requires moral progress, both because it creates new human possibilities, and because it implies a new relationship between man and the universe that undercuts all traditional moral beliefs. If man is capable of establishing his own empire over nature, he must be free and sovereign in this new realm. And as this realm expands, so too must the human responsibility to define and redefine its moral laws. Thus Dewey explicitly rejects the moral traditions that precede him as outdated and irrelevant. Bacon, on the other hand, goes to great lengths to harmonize his revolutionary insights in science and philosophy with the dominant religious and political opinions of his time. Dewey assumes that Bacon merely fails to see the moral and political implications of his own insights, which have only become clear over time. But this is not necessarily the case. Not only did Bacon write in a time in which it was much more dangerous for individuals to question religion and traditional morality than did Dewey, he may have, like Tocqueville, seen political dangers in the radical critique of political and religious institutions that Dewey himself ignores.

In his Essay *On Atheism* Bacon gently mocks those who would preach atheism or willingly suffer for it and refuse to recant, “whereas if they did truly think that there were no such thing as God, why should they trouble themselves?” He disavows atheism himself, but on grounds which show that he has clearly considered the connection between his own project to advance human learning, and the weakening of religious belief. “It is true,” he says, “that a little philosophy inclineth man’s mind to atheism; but

depth in philosophy bringeth men's minds about to religion. For while the mind of man looketh upon second causes scattered, it may sometimes rest in them and go no further; but when it beholdeth the chain of them, confederate and linked together, it must needs fly to Providence and Diety." Of course, Bacon himself proposes to hang the human understanding with weights to prevent it from leaping and flying, and to discipline the minds of scientific inquirers to rest with axioms that are merely positive. This is further evidence of the fact that he does not expect his method in the *New Organon* to be followed by most of his readers, who will continue to leap and fly to divine providence rather than rest satisfied with what methodical inquiry can ascertain.

And though Bacon must surely see that his own success would incline many human beings towards atheism, he preaches against preaching it outright. He claims that they who deny God destroy the nobility, magnanimity, and lofty spirit of man, undermine human courage to undertake great enterprises, and generally "depriveth human nature of the means to exalt itself above human frailty." This is as true of nations as of individual persons. "It is in piety only and religion," he quotes Cicero as saying, "and wisdom regarding the providence of the immortal gods as that which rules and governs all things, that [Rome has] surpassed all nations and peoples."⁴³

In his Essay *On Innovation* Bacon writes, "It is true that what is settled by custom, though it be not good is at least fit; and those things which have long gone together, are as it were confederate within themselves; whereas new things piece not so well." Bacon's gentleness in the *New Organon* is consonant with his own suggestion that

⁴³ Bacon, Francis. *Essays and Counsels* Essay 16 *On Athesism*

those who would introduce innovations should, “follow the example of time itself; which indeed innovateth greatly, but quietly, and by degrees scarce to be perceived.”⁴⁴ Bacon proceeds boldly and explicitly to reject the ends and means of philosophical inquiry employed by the Scholastics, but he reveals the subversive moral implications of this rejection only quietly. He begins to build the independent, secular, power of human beings to provide for their own comfort and prosperity on earth before tearing down the edifice of the divinely ordered whole of which human beings had previously considered themselves a part.

In aphorism I.92 of the *New Organon*, Bacon attributes the distrust and despair that is the chief obstacle to his work not to the vulgar but to “wise and serious men” who have meditated on “the obscurity of nature, the shortness of life, the deceitfulness of the senses, the weakness of the judgment, the difficulty of experiment, and the like.”⁴⁵ With a show of deference to his detractors, he warns himself and his readers not to be “led away by our love for a most fair and excellent object to relax or diminish the severity of our judgment,” and promises to “take state prudence too into our counsels, whose rule is distrust, and to take the less favorable view of human affairs.” Bacon tantalizingly leaves off here, however. He does not proceed to address the concerns of his wise detractors, or display his own exercise of prudence and distrust, but reflecting that his teaching might tend to make men sad, turns to speak of hope.

The concerns of Bacon’s wise detractors are similar to concerns Bacon expresses

⁴⁴ Bacon, Francis. *Essays and Counsels* Essay 24 *On Innovation*

⁴⁵ Bacon, Francis. *The New Organon* I.92

in his own voice elsewhere in the *New Organon* and the *Great Instauration*.⁴⁶ “The universe to the eye of human understanding,” Bacon claims, “is framed like a labyrinth, presenting as it does on every side so many ambiguities of way, such deceitful resemblances of objects and signs...” that it can be no surprise that human beings have not previously succeeded in advancing the sciences. He claims even further that, “No excellence of wit, no repetition of experiments, can overcome such difficulties as these.” But Bacon, unlike his hypothetical detractors, does not despair. He concludes instead, that “our steps must be guided by a clue, and the whole way from the very first perception of the sense must be laid upon a sure plan.”⁴⁷ Bacon suggests that his own insight into how such difficulties might be mitigated comes from contemplating them more deeply than anyone who came before him.

As noted above, however, the plan of inquiry Bacon proposes prevents human beings from following the natural course of their understanding and from seeking the kind of knowledge they most long to attain. Perhaps this explains why Bacon claims that without hope, the rest of his teaching tends to make men sad. No quantity of human powers over nature can provide the comfort of the knowledge that human beings have a place within a divinely ordered universe. The hunger to know and articulate this order, however, to move beyond merely positive general principles of natural philosophy and articulate final causes within an ordered whole has “strangely defiled philosophy,”

⁴⁶ To see Bacon’s own concern with these problems see especially Preface to the *Great Instauration* and Aphorisms 45 through 57 of the *New Organon* on the *Idols of the Tribe*.

⁴⁷ Bacon, Francis. Preface to *The Great Instauration* pg. 73

according to Bacon, and led to the neglect of the arts and sciences thus far.⁴⁸ I suspect that this is the chief concern that Bacon fears will preoccupy his reader's minds and prevent them from receiving his teaching, and which causes him to proceed with gentleness.

In what follows, Bacon lays out grounds for hope not only for previously unimaginable progress in the arts and sciences, but also for believing that human beings do not have to sacrifice the pursuit of truth in the pursuit of new inventions, or sacrifice the dignity of learning in applying it to providing for the comforts of human life.⁴⁹ This is merely the positive side of Bacon's negative teaching that the more exalted truth most human beings hope for is unattainable, articulated in a form that recognizes and flatters the human desire to know as something higher than the human desire for power over nature. Thus Bacon allows his readers to take pride in their dedication to the highest aims of philosophy even as he undermines those aims as ordinarily understood, and to take hope on grounds which, examined more carefully, might cause them to despair. Bacon's gentleness protects his readers from the bewildering and destructive doubt that Tocqueville fears and Dewey embraces.

Bacon promotes his refounding of philosophy in the language of St. Paul's three chief theological virtues: faith, hope, and charity. He encourages his readers to have faith, take hope, and exercise in charity that right of the human race over nature "which belongs to it by divine bequest." Thus he weaves his philosophical reflections together with

⁴⁸ Bacon, Francis. *The New Organon* I. 48 cited above

⁴⁹ See especially *New Organon* I.124

Christian doctrine and makes plausible the claim that human power over nature will be “governed by sound reason and true religion.” Bacon’s emphasis on charity, especially, softens the implications of human conquest over nature even for modern secular readers like Dewey, who read Bacon as a champion not only of the empire of man over nature, but of the abolition of the empire of man over man. “The power over nature which [Bacon] expected to follow the advance of science has come to pass,” Dewey claims, but he regrets that “in contradiction to [Bacon’s] expectations, it has largely been used to increase, rather than reduce the power of Man over Man.”⁵⁰

Bacon may not have been as naïve as Dewey indicates, however. In aphorism I.129 of *The New Organon*, Bacon exhorts his readers with perhaps the most ambitious account of the power of science to transform human life found anywhere in his writings, but he does not claim that the empire of man over nature can be substituted for the empire of man over man. In fact, he points to the very possibility Dewey fears, that science and technology might increase rather than erase the gulfs between powerful nations and their neighbors. His evidence of the almost divine nature of scientific discovery and its power to confer previously unimaginable new benefits on the human race is the great difference between the quality of life in Europe and in the New World. “Let a man only consider what a difference there is [between these]...and he will feel it to be great enough to justify the saying ‘man is a god to man.’”

Bacon distinguishes the benefits conferred by inventors and discoverers of new arts and sciences upon mankind from the benefits founders and statesmen confer on their

⁵⁰ John Dewey, *Freedom an Culture*, pg. 141

own particular states. “The reformation of a state in civil matters is seldom brought in without violence and confusion. But discoveries carry blessings with them, and confer benefits without causing harm or sorrow to any.” The blessings of new arts and sciences transcend states, they neither require nor bring about civil reforms. But this leaves them strangely disconnected from their civil and political uses. Bacon claims three discoveries have changed the course of human life on earth more powerfully than any empire, sect, or star: printing, gunpowder, and the magnet. Without these three inventions the imperialism, nationalism, and increasingly destructive war that Dewey laments as unfortunate and unforeseen byproducts of Bacon’s project would not have been possible. Bacon himself is aware of the “innumerable changes,” these inventions were bringing about in his own time and were sure to bring about in the time to come. His inclusion of gunpowder in this list indicates that he is not blind to the potential power of new discoveries to be used for war instead of peace and to increase the power of man over man.⁵¹

Bacon lists three grades of human ambition and ranks them according to their nobility. He calls the first, personal ambition for power within one’s own country, vulgar and degenerate. But he does not condemn the second grade of ambition, patriotic ambition to extend the power of one’s country over others, quite so categorically. He says this kind of ambition “certainly has more dignity, though not less covetousness,” than the first. Presumably, this ambition that motivates the “founders of cities and empires,

⁵¹ In this section I owe a great deal to the analysis of Richard Kennington in his essay “Bacon’s Humanitarian Revision of Machiavelli,” in the edited volume *On Modern Origins* 2004.

legislators, saviors of their country from long endured evil, quellers of tyrannies, and the like,” to whom Bacon referred earlier as conferring civil benefits to their own states. Bacon belittles this kind of ambition as compared with the third and highest form, the ambition to extend the power and dominion of the whole human race over the universe. Though it is only this third and highest which Bacon evidently intends to promote, he seems to imply that all three forms of human ambition coexist. In fact it is unclear what would motivate the men to govern states either well or poorly, if the first two were altogether abolished. The empire of man over nature is no substitute for the empire of man over man. Though Dewey is right to point to the universal scope and charitable bent of the ambition Bacon promotes, Bacon does not claim to be able to abolish the violence and destruction necessary for civil reforms any more than he claims to be able to institute universal enlightenment. It is not Bacon’s collective vision, then, which will govern the use of human power over nature, but the limitation on that vision, the preservation of traditional moral and political beliefs.

Dewey, in assuming that Bacon is merely naïve about the moral and political implications of his philosophic project rather than cautious about explicitly embracing them, abandons Bacon’s caution and is himself naïve. He places an enormous responsibility to radically reshape human moral life in the hands of proponents of modern natural science without carefully considering whether scientific men and women are equipped to exercise such a power. He ignores Bacon’s reflections on the weakness of the human intellect and the need for proceeding with gentleness in preparing men’s minds, and exaggerates Bacon’s hopes for a universal, peaceful, democratic empire of man over

nature. Thus he fails to see that Bacon's liberation of the human intellect from the hierarchies of the tradition is as terrifying for most human beings as it is empowering for a few, and ignores its potential destructive power within states.

Bacon, like Dewey, is a proponent of progress. He unleashes unprecedented hopes for unprecedented progress in the sciences. But he does not have the same attitude towards progress within states. "It is good not to try experiments in states," he writes, "except the necessity be urgent, or the utility evident; and well beware that it be the reformation that draweth on the change, and not the desire of change that pretendeth the reformation."⁵² Bacon, unlike Dewey, does not see the human capacity for change as a good in itself. In fact, in all human actions, Bacon speaks of the natural tendency of human beings to move towards what is bad for themselves, while any movement towards the good is forced and unsustainable. And yet, this natural tendency towards decay is exactly why we must not reject human innovation altogether, "for if time in course alter things to the worse, and wisdom and counsel shall not alter them to the better, what shall be the end?" His final words of advice in *On Innovation* are these, that "novelty, though it be not rejected, be held for a suspect, as the Scripture saith, *that we make a stand upon the ancient way, and then look about us, and discover what is the straight and right way, and so walk in it.*"

⁵² Bacon, Francis. *Essays and Counsels* Essay 24 *On Innovation*

Chapter 6: Conclusions

There is a deep kinship between Bacon and Dewey. Both see man as, in some sense, capable of shaping his own fate on earth, and exhort their fellow human beings, to some extent, to embrace this terrifying and liberating possibility. Furthermore, both thinkers see fundamental change over time as a fact of human life, and human invention as a necessary and desirable response to an inhospitable and unstable nature. But, where Dewey exhorts all men alike to recognize these truths and respond accordingly, Bacon obscures the far-reaching implications of his new philosophical project from most of his readers, and encourages them to retain some vision of themselves as part of a divinely ordered whole. Bacon, like Tocqueville, sees the need to temper and confine radical doubt on a large scale.

But where does this leave the philosophic method of the Americans? Can we simply choose not to ask certain questions? To hang on to Christian piety, not out of true piety, but only out of fear of moral chaos? Perhaps not. But we can recognize the limitations of the original Baconian project to conquer nature in the name of mankind, and perhaps even take a more critical view of this project itself, if we recognize that progress in the sciences does not necessarily confer mankind with the knowledge necessary to guide progress within states. Bacon's refounding of philosophy undermines traditional moral authorities without being able to replace them, but Bacon, the prophet of hope and progress, takes seriously the danger of human despair that Dewey blithely passes over. He recognizes that human desire for knowledge remains unsatisfied by

growing human power over nature, that political and social organization around scientific inquiry may be at odds with free government, and that pressing for political reform at the pace of scientific discovery threatens disorder and despair within states. A pragmatic thinker, motivated by the scientific morale, cannot afford to ignore considerations such as these.

References

Bacon, Francis, and Hugh G. Dick Ed. *The Advancement of learning, The essays moral and civil, and The new atlantis* In *Selected writings of Francis Bacon*. New York: Modern Library, 1955.

Bacon, Francis, and Rose Sargent Ed. *The great instauration and The new organon*. In *Selected philosophical works*. Indianapolis, IN: Hackett Pub., 1999.

Dewey, John. *Freedom and culture*. 1939. New York: Capricorn Books, 1963.

Dewey John. *Reconstruction in philosophy*. Courier Dover Publications, 2012.

Kennington, Richard. *On modern origins: essays in early modern philosophy*. Lexington Books, 2004.

Rorty, Richard. *Achieving our country*. Harvard University Press, 1998.

Rorty, Richard, Michael Williams, and David Bromwich. *Philosophy and the mirror of nature*. Vol.401. Princeton, NJ: Princeton University Press, 1980.

Tocqueville, Alexis de, Harvey Mansfield and Delba Winthrop, Eds. *Democracy in America*. Chicago: University of Chicago Press, 2000.