Newton and the Declaration of Independence

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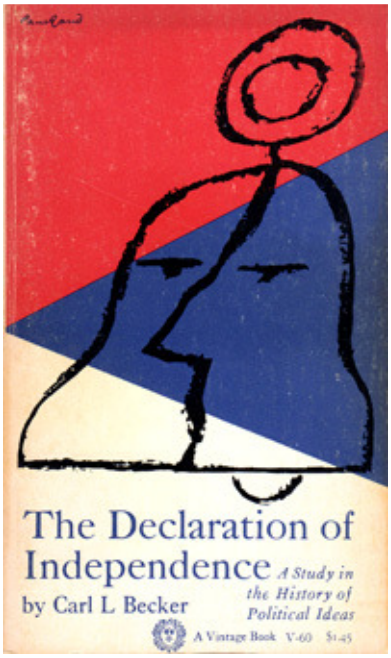

My 1975 copy of the 1958 Vintage edition

One of the books that has stuck with me over the years is Carl Becker's *The Declaration of Independence* (1922, reprint 1942) ([1]), not only for its incredibly clear and beautiful writing but also for its emphasis on the impact of the revolution most prominently caused by Isaac Newton, which was later subsumed under the term Scientific Revolution covering the entire 17th century. A consequence of this remarkable period was the so-called Enlightenment that followed in the 18th century and became the soil from which our nation's founding ideas and documents sprang. Both these centuries have been further optimistically called the Age of Reason.

Our current times, awash in lies, corruption, and such terms as "alternative facts", have been characterized as an assault on the rationalism and Enlightenment that shaped our founding. Any revisiting of these origins would seem to be a valuable endeavor to see if they still have validity. What makes Becker's essay particularly relevant to me is the current pervasiveness of the mathematical view of reality that was launched by Newton some 300 years ago. Becker shows how this new way of thinking spread far beyond the bounds of mathematics and engendered a new "natural rights" philosophy that formed the foundation for the Declaration of Independence. Essentially the idea was that if the behavior of the natural world was based on (mathematical) laws, then so must the behavior of man be based on natural laws.

Since I also want to display Becker's skill with the pen, my essay will mostly be excerpts from his book. There is a mysterious pleasure in reading very fine writing. Our current media produces such a daily torrent of evasive, prolix verbiage that is often dubbed "word salad" and is a debasement our language that it is a relief to experience eloquently crafted prose.

As the writer of the Declaration, Jefferson becomes the focus of Becker's story, but I wish to concentrate on the Newton-related influences. I begin with excerpts from Becker's Chapter II on The Natural Rights Philosophy:

> Not all Americans, it is true, would have accepted the philosophy of the Declaration, just as Jefferson phrased it, without qualification, as the 'common sense of the subject'; but one may say that the premises of this philosophy, the underlying preconceptions from which it is derived, were commonly taken for granted. That there is a 'natural order' of things in the world, cleverly and expertly designed by God for the guidance of mankind; that the 'laws' of this natural order may be discovered by human reason; that these laws so discovered furnish a reliable and immutable standard for testing the ideas, the conduct, and the institutions of men — these were the accepted premises, the preconceptions, of most eighteenth century thinking, not only in America but also in England and France. ([1] p.26)

> … in the seventeenth century the right of kings to rule was commonly thought to come directly from God …([1] p.31)

> Subjects are obviously not bound to obey a king who commands what is contrary to the will

of God. … Thus kings are under binding contract to rule justly, while subjects have a covenant with God to see that they do so. In the seventeenth century English sectaries not only preached but practiced resistance to kings and magistrates, finding their justification, not so much in an explicit compact with God, as in natural law, which was that right reason or inner light of conscience which God had given to men for their guidance. ([1] pp.33-34)

Let us, therefore, ask whether there is not happily a compact between men and kings, God not interfering, on which we can stand to be judged by men when we resist kings.

The truth is that Locke, and the English Whigs, and Jefferson and Rousseau even more so, had lost that sense of intimate intercourse and familiar conversation with God which religious men of the sixteenth and seventeenth centuries enjoyed. Since the later seventeenth century, God had been withdrawing from immediate contact with men, and had become, in proportion as he receded into the dim distance, no more than the Final Cause, or Great Contriver, or Prime Mover of the universe; and as such was conceived as exerting his power and revealing his will indirectly through his creation rather than directly by miraculous manifestation or through inspired books. In the eighteenth century as never before, 'Nature' had stepped in between man and God; so that there was no longer any way to know God's will except by discovering the 'laws' of Nature, which would doubtless be the laws of 'nature's god' as Jefferson said. "Why should I go in search of Moses to find out what God has said to Jean Jacques Rousseau?" Why indeed, when the true revelation was all about him in Nature, with sermons in stones, books in the running brooks, and God in everything. The eighteenth century, seeking a modified version of the original compact, had to find it in nature or forever abandon the hope of finding it. ([1] pp.36-37)

The eighteenth century did not abandon the old effort to share in the mind of God; it only went about it with greater confidence, and had at last the presumption to think that the infinite mind of God and the finite mind of man were one and the same thing. This complacent view of the matter came about partly through the Protestant Reformation, which did much to diminish the authority of the Church as the official interpreter of God's will; but it came about still more through the progress of scientific investigation which had been creating, since the time of Copernicus, a strong presumption that the mind of God could be made out with greater precision by studying the mechanism of his created universe than by meditating on the words of his inspired prophets. Some of the 'laws' of this curious mechanism had already been formulated by Kepler and Galileo. Well, what if all the 'laws' of God's universe could be discovered by the human reason? In that case would not the infinite mind of God be fully revealed, and the Natural Law be identical with the Eternal Law? Descartes was bold enough to suggest this wonderful possibility. "I think, therefore, I am." Whatever is, is rational; hence there is an exact correspondence between human reason and the objective world. I think, therefore I am; and if I can think straight enough and far enough, I can identify myself with all that is. This 'all that is' the eighteenth century understood as Nature; and to effect a rational explanation of the relation and operation of all that is, was what it meant by discovering the 'laws' of Nature. No doubt Natural Law was still, as in the time of Aquinas, that part of the mind of God which a rational creature could comprehend; but if a rational creature could comprehend all that God had done, it would, for all practical purposes, share completely the mind of God, and the Natural Law would be, in the last analysis, identical with the Eternal Law. Having deified Nature, the eighteenth century could conveniently dismiss the Bible and drop the concept of Eternal Law altogether.

In this deification of Nature, a decisive influence must be ascribed to Isaac Newton, whose great work, the *Principia*, was first published in 1686. … Newton struck the imagination of his time, as Darwin did of his time, just because his important conclusions were arrived at by such commonplace methods. If the character of so intangible a thing as light could be discovered by playing with a prism, if, by looking through a telescope and doing a sum in mathematics, the force which held the planets could be identified with the force that made an apple fall to the ground, there seemed to be no end to what might be definitely known about the universe. Perhaps after all God moved in these clear ways to perform his wonders; and it must be that he had given man a

mind ingeniously fitted to discover these ways. Newton, more than any man before him, so it seemed to the eighteenth century, banished mystery from the world. In his hands 'Philosophy' came to be no more than a matter of observation and mathematics, an occupation which any intelligent person might in some measure pursue, instead of the manipulation of a subtle dialectic which only the adept could follow and which created more difficulties than it solved. ([1] pp.39-42)

In the hands of the popularizers, the Newtonian philosophy became a 'Philosophy' indeed: was broadened out into a 'System of the World' which could be made to serve as a model of government, an argument to confound atheists and 'libertines,' a sure mathematical foundation for natural religion, or a major premise from which a strictly materialistic interpretation could be derived. It was these broader uses of the Newtonian philosophy that made it so popular, and that gave to the work of Newton a significance beyond the narrow field of physics and astronomy. In truth Newton's name and fame played much the same part in eighteenth century thought which the name and fame of Darwin have played in the thought of our own day. His name became a symbol which called up, in the mind of the reading and thinking public, a generalized conception of the universe, a kind of philosophical premise of the most general type, one of those uncriticized preconceptions which so largely determined the social and political as well as the strictly scientific thinking of the age.

This generalized conception of the universe, through which the work of Newton so powerfully affected the social and political thought of the eighteenth century, is very clearly formulated by M. Leon Bloch, a competent modern student, in his recent book, *La philosophie de Newton*.

> What the human spirit owes to Newton ... is the rapprochement effected by this great man between God and nature. Henceforth it will be possible for natural science, that is to say physics, not only to struggle against theology, but to supplant it. The contradictory Gods of the revealed religions will be replaced by a new idea, that of a being who is known to us through his works, and to whom we can attain only through science. The universal order, symbolized henceforth by the law of gravitation, takes on a clear and positive meaning. This order is accessible to the mind, it is not preestablished mysteriously, it is the most evident of all facts. From this it follows that the sole reality which can be accessible to our means of knowledge, matter, nature, appears to us as a tissue of properties, precisely ordered, and of which the connection can be expressed in terms of mathematics. ([1] pp.47-48)

... the eighteenth century prized Locke because he furnished a formal argument in support of the idea that men, *barely by the use of their natural faculties*, may attain to all the knowledge they have. Locke, more perhaps than any one else, made it possible for the eighteenth century to believe what it wanted to believe: namely, that in the world of human relations as well as in the physical world, it was possible for men to correspond with the general harmony of Nature; that since man, and the mind of man, were integral parts of the work of God, it was possible for man, by the use of his mind, to bring his thought and conduct, and hence the institutions by which he lived, into a perfect harmony with the Universal Natural Order. In the eighteenth century, therefore, these truths were widely accepted as self evident: that a valid morality would be a natural morality, a valid religion would be a natural religion, a valid law of politics would be a natural law. This was only another way of saying that morality, religion, and politics ought to conform to God's will as revealed in the essential nature of man. ([1] p.57)

Natural law, as a basis for good government, could never be found in the undifferentiated nature of man, but only in human reason applying the test of good and bad to human conduct. Thus the eighteenth century, having apparently ventured so far afield, is nevertheless to be found within hailing distance of the thirteenth; for its conception of natural law in the world of human relations was essentially identical, as Thomas Aquinas' conception had been, with right reason. ([1] pp.60-61)

The question which Locke had to answer was therefore this: What kind of political compact would men enter into, if they acted according to the nature which God had given them? …

> The state of nature has a law to govern it, which obliges every one: and reason, which is that law, teaches all mankind, who will but consult it, that being all equal and independent, no one ought to harm another in his life, health, liberty, or possessions. . . . ([1] p.63)

The sum and substance of Locke's elaborate enquiry into the origin and character of government is this: since reason is the only sure guide which God has given to men, reason is the only foundation of just government; and so I ask, not what authority any government has in fact, but what authority it ought in reason to have; and I answer that it ought to have the authority which reasonable men, living together in a community, considering the rational interests of each and all, might be disposed to submit to willingly; … Stripped of its decorative phrases, of its philosophy of 'Nature' and 'Nature's God' and the 'Universal Order,' the question which Locke asked was a simple one: 'I desire to know what kind of government that is . . . where one man . . . may do to all his subjects whatever he pleases, without the least liberty to any one to question or control those who execute his pleasure?' This, generally speaking, was what the eighteenth century desired to know. The answer which it gave to that question seemed self-evident: Such a government is a bad government; since governments exist for men, not men for governments, all governments derive their just powers from the consent of the governed. ([1] pp.71-72)

Becker then discusses in the next chapter the Theory of the British Empire. With this background of the Natural Rights Philosophy and the Theory of the British Empire he then investigates in detail in the next two chapters the actual drafts of the Declaration and the edits made by Jefferson, as well as the few made by John Adams and Benjamin Franklin. I found this fascinating, but a digression from my current theme. It is in his final Chapter VI on The Philosophy of the Declaration in the Nineteenth Century that the clouds of reality close in and countervailing forces arise that are with us today. In the United States the precipitating event was the hypocrisy of slavery and in Europe it was the disaster of the French Revolution.

> Yet in very few of the innumerable constitutions of the nineteenth century, in few if any of the constitutions now in force, do we find the natural rights doctrine of the eighteenth century reaffirmed — not even, where we should perhaps most expect it, in the Constitution of the United States or the Constitution of the third French Republic. Modern democracy has accepted one article of the Jeffersonian philosophy — that government rests upon the consent of the governed; and this article, in the form of the right of the majority to rule, it has even erected into an article of faith. For this dogma a theoretical foundation had indeed to be found; but it is significant that the nineteenth century almost ostentatiously refrained from deriving the right of the majority from the natural rights philosophy as formulated in the Declaration of Independence and in the Declaration of the Rights of Man.
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> The simplest, the naive, way to justify majority rule was of course to fall back upon force — the majority has the power, and therefore the right; ([1] p.234)
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> A more sophisticated justification of majority rule was fashioned by Bentham and his English disciples. Bentham's *Fragment on Government* appeared in 1776, the very year of the Declaration of Independence; but it is significant that Bentham's ideas were not much attended to until a generation later when everything reminiscent of Rousseau's Social Contract was suspect in England. After 1815, with the revival of the movement for parliamentary reform, there began to be a certain demand for a distinctively British road to democracy. What was wanted was a philosophy that would enable Englishmen to be both radical and respectable, a doctrine within the shelter of which one could advocate universal suffrage and at the same time ridicule Rousseau and renounce the "philosophy of the French school." Bentham supplied this need. Rejecting the eighteenth-century doctrine of natural rights altogether, and taking his chief ideas from Hume and

Beccaria, he made utility the test of institutions. The object of society is to achieve the greatest good of all its members; do not ask what rights men have in society, but what benefits they derive from it. ([1] pp.235-236)

If the classic philosophy of the American Declaration of Independence and the French Declaration of Rights proved unacceptable to the nineteenth century, it was thus not because it could be easily made the basis of democratic government, but because it had been, and could again be, so effectively used as a justification of revolutionary movements. The nineteenth century, while progressively democratic, was on the whole anti-revolutionary. ([1] p.237)

The persistence of the political philosophy of the Declaration in the state constitutions must be mainly attributed to the conventional acceptance of a great tradition; particularly so during the thirty years prior to the Civil War … During these decades, the ideas of the Declaration survived as a living faith chiefly among those who felt that slavery was an evil requiring immediate and desperate remedies. The old Jeffersonian anti-slavery sentiment[1] had disappeared, or was rapidly disappearing, in the South. Cotton was king, and the cotton planters were determined to maintain their slaves at all hazards. In the North, business interests, deprecating agitation as inimical to prosperity, were all for holding fast to the sacred constitution as a prescriptive safeguard of liberty. Liberty they would defend, to be sure — "Liberty and Union, one and inseparable." Against this attitude, the radical abolitionists revolted in passionate disgust. Every honest man, they thought, must know that slavery was a damnable crime against human nature; and yet the United States, proclaiming as its birthright that all men are created equal, not only persisted in the crime, but defended it as a necessary evil or a positive good, thus crowning national dishonor with a mean hypocrisy. ([1] pp.240-241)

Southern slave owners … had therefore to work out a social philosophy which would relieve them of all responsibility by reconciling society as it is with society as God in his inscrutable providence had intended it to be.

The key to the new philosophy was found in a re-definition of that ancient and battered but still venerable concept of Nature. … it was Thomas Dew, fresh from German universities, who showed the South that natural law, properly conceived, might still be made the sure foundation of African slavery. Nature, he argued, is clearly the work of God, and man is the product of nature — it is "the nature of man to be almost entirely the creature of circumstances." … human progress, in every stage of development, had been possible only because superior men gained leisure and opportunity by subjugating their inferiors. Thus God and Nature had decreed slavery as the price of civilization. ([1] pp.246-248)

Thus Calhoun identified natural law with the positive law of particular states, the state of nature with the state of political society as history actually gave it rather than as it might be rationally conceived and reconstructed. In this scheme the natural state of the African race was obviously the state which the historic process created for it in any moment of historical evolution. ([1] pp.254-255)

At all events, whether German influence was great or little, the political ideas which in the United States discredited the doctrines of the Declaration of Independence were similar in

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[1] JOS: This is one of the remarkable things I found in the section on Jefferson's edits of the draft of the Declaration. He had included in his list of crimes perpetrated by the King of Great Britain that of promoting the slave trade. In having to delete it, Jefferson commented "The clause too, reprobating the enslaving the inhabitants of Africa, was struck out in complaisance to South Carolina and Georgia, who had never attempted to restrain the importation of slaves, and who on the contrary still wished to continue it. Our Northern brethren also I believe felt a little tender under those censures; for tho' their people have very few slaves themselves yet they had been pretty considerable carriers of them to others." ([1] pp.171-172) It is remarkable that Jefferson seems to make a moral distinction between *transporting* slaves and *owning* them, since he himself owned slaves, begat children with at least one of them, and did not free them upon his death.

essentials to those which in Europe had already deprived the Declaration of the Rights of Man of its former high prestige.

In Europe, the revulsion from the ideas of the eighteenth century was the direct result of the French Revolution and the Napoleonic conquests. … To the generation that did its political thinking against the background of the Reign of Terror and the Napoleonic conquests, it seemed that the revolutionary philosophy had proved disastrous …. By endowing men with inalienable rights superior to those of positive law, it was a standing invitation to insurrection and a persistent cause of anarchy. ([1] pp.256-258)

Savigny was not the most popular writer of the nineteenth century, but the doctrine of historic rights was so exactly suited to the hopes and fears of his generation that it entered, almost without effort, as an underlying preconception, into the thought of the time, very much as the natural rights doctrine of Jefferson and Rousseau had entered into the thought of the eighteenth century. The effectiveness of the historic rights philosophy was indeed precisely in this, that it encountered the natural rights philosophy of the eighteenth century on its own ground, and refuted it from its own premises. Admitting that rights were founded in nature, it identified nature with history, and affirmed that the institutions of any nation were properly but an expression of the life of the people, no more than the crystallization of its tradition, the cumulative deposit of its experience, the resume of its history. … what historians for the most part understood through investigation was how things had come to be what they were, and why they could not after all have been much different … ([1] pp.265-266)

For Ranke, as for the generation after 1815, when, as he says, "historical studies developed essentially in opposition to the ascendancy of the Napoleonic ideas," there is indeed no question of discovering the natural rights common to all men, or of constructing institutions appropriate to all peoples, since the individuality of nations is fixed past all changing. ([1] p.270)

The individual, in the eighteenth century emancipated from prescriptive law and custom, was once more confined within the complex framework of circumstance; liberated by the revolutionary age from his environment in order to reconstruct it on rational lines, he was again imprisoned in the social process. ([1] p.272)

To ask whether the natural rights philosophy of the Declaration of Independence is true or false is essentially a meaningless question. When honest men are impelled to withdraw their allegiance to the established law or custom of the community, still more when they are persuaded that such law or custom is too iniquitous to be longer tolerated, they seek for some principle more generally valid, some 'law' of higher authority, than the established law or custom of the community. …

In different times this higher law has taken on different forms — the law of God revealed in Scripture, or in the inner light of conscience, or in nature; in nature conceived as subject to rational control, or in nature conceived as blind force subjecting men and things to its compulsion. The natural rights philosophy of the Declaration of Independence was one formulation of this idea of a higher law. It furnished at once a justification and a profound emotional inspiration for the revolutionary movements of the seventeenth and eighteenth centuries. Founded upon a superficial knowledge of history it was, certainly; and upon a naive faith in the instinctive virtues of human kind. Yet it was a humane and engaging faith. At its best it preached toleration in place of persecution, goodwill in place of hate, peace in place of war. It taught that beneath all local and temporary diversity, beneath the superficial traits and talents that distinguish men and nations, all men are equal in the possession of a common humanity; and to the end that concord might prevail on the earth instead of strife, it invited men to promote in themselves the humanity which bound them to their fellows, and to shape their conduct and their institutions in harmony with it.

This faith could not survive the harsh realities of the modern world. Throughout the nineteenth century the trend of action, and the trend of thought which follows and serves action, gave an appearance of unreality to the favorite ideas of the age of enlightenment. Nationalism and

> industrialism, easily passing over into an aggressive imperialism, a more trenchant scientific criticism steadily dissolving its own 'universal and eternal laws' into a multiplicity of incomplete and temporary hypotheses — these provided an atmosphere in which faith in Humanity could only gasp for breath. "I have seen Frenchmen, Italians, Russians," said Joseph de Maistre, "but as for Man, I declare I never met him in my life; if he exists, it is without my knowledge." Generally speaking, the nineteenth century doubted the existence of Man. Men it knew, and nations, but not Man. Man in General was not often inquired after. Friends of the Human Race were rarely to be found. Humanity was commonly abandoned to its own devices. ([1] pp.277-279)

I am not sure what Becker is referring to with "a more trenchant scientific criticism steadily dissolving its own 'universal and eternal laws' into a multiplicity of incomplete and temporary hypotheses". Writing in 1922, perhaps he felt Einstein's reworking of Newton's theories into the Special and General Theories of Relativity cast into doubt the validity of Newton's original conception and threw into question the idea that there could be immutable laws describing physical reality. I, of course, view the situation as just the opposite. Einstein made sure that his theories led to Newton's in the limit of low speeds. Newton never claimed he knew physically how gravity worked, so Einstein's formulation did not contradict Newton but only filled in the lacunae, if somewhat astonishingly, by assigning the curved geometry of spacetime as the explanation. Perhaps Becker is not sufficiently aware of the evolutionary nature of science and mathematics, though I find that hard to believe in a historian. The idea of "incomplete and temporary hypotheses" should not be a pejorative, since all mathematical and scientific inquiries lead to modifications and expansions of our understanding, and, yes, sometimes negations of currently erroneous ideas. Today, with the durability of a hundred years of Relativity and Quantum Mechanics we are even more intimately wedded to belief in mathematical laws permeating our physical reality, even if they seem maddingly incomplete.

But what of the faith in reason that seemed so strong at our founding and so battered after almost 250 years? Clearly I believe deeply in the premises of the Enlightenment which infuse human beings with the enabling power of reason, to be able to understand things for themselves without being coerced by authority figures. Given that the participation in our democracy has expanded considerably over the years with the laudable inclusion of women and those of any race, to say nothing of the explosion of our population, it is a challenge to maintain this faith in reason as a guiding principle. There are so many other factors that arise from this competing multitude. But the forces of duplicity and falsehood can only be defeated by reason. I continue to find sustenance in Becker's optimistic closing words before he succumbed to the "harsh realities".

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[1] Becker, Carl, *The Declaration Of Independence: A Study In The History Of Political Ideas*, Harcourt, Brace And Company, Inc, New York, 1922, Vintage Books reprint, 1958.