“Lincoln has mentioned five modern events [that] . . . provide a genealogy of ‘the crisis of the house divided.’ The two seminal inventions of modernity presage the conflict: The invention of printing in 1436 pointed humanity towards freedom; ‘the invention of negroes’ in 1434 created a new, more virulent form of slavery. The discovery of America in 1492 provided the ground on which both forces (slavery and freedom) eventually converged. The Reformation in 1517 added religious support for the cause of political liberty. Patent law in 1624, like the discovery of America, is ambiguous or double-edged.”

“We might with justice say that Lincoln’s entire public career was devoted to dis-inventing the Negro, or dis-inventing the present mode of using him. He sought to move the Negro from his status as an invention to his rightful status as a human being.”

“Clearly, not every invention advances civilization. Lincoln concludes his speech by returning to the one invention he considers most efficacious for good: namely, the printing press. He credits a technological advance with breaking the ‘slavery of the mind.’ . . . He unearths the deepest cause of slavery, which turns out not to be political oppression but rather ignorance—ignorance of one’s human nature.”

—Diana Schaub

In honor of the anniversary of the signing of the US Constitution on September 17, 1787, AEI’s Program on American Citizenship marked Constitution Day with a lecture by Diana Schaub (Loyola University Maryland). Schaub’s lecture was the seventh in a series named for distinguished AEI scholar Walter Berns.
Emancipating the Mind: Lincoln, the Founders, and Scientific Progress

2018 Walter Berns Constitution Day Lecture

Remarks by

DIANA SCHAUB
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The Walter Berns Constitution Day
Lecture Series

A scholar of political philosophy and constitutional law, Walter Berns wrote extensively on issues of American government and its founding principles. He authored 10 volumes and published widely in professional and popular journals and America’s leading newspapers. He was the John M. Olin University Professor Emeritus at Georgetown University and served as a resident scholar at AEI. He taught at Louisiana State University, Yale University, Cornell University, Colgate University, and the University of Toronto. He earned his master’s and doctorate degrees in political science at the University of Chicago. Berns served on the National Council on the Humanities from 1982 to 1988 and on the Council of Scholars in the Library of Congress from 1981 to 1985. He was also a delegate to the United Nations Commission on Human Rights. He was awarded the National Humanities Medal in 2005.

In September 2011, AEI president Arthur Brooks announced that henceforth the Program on American Citizenship’s annual Constitution Day celebration would be named in honor of Walter Berns in appreciation of his scholarly legacy in this field and his many years of contributing to the work of the AEI.
Emancipating the Mind: 
Lincoln, the Founders, 
and Scientific Progress

Diana Schaub
September 17, 2018

The American founders, the US Constitution, and Abraham Lincoln were dear to Walter Berns, as his entire career testified and as I learned firsthand when I took an American political thought seminar with him, away back in the early 1980s, when he visited for a semester at the University of Chicago. In Walter’s honor, I will touch upon all three of his favorites, but on a topic that I don’t believe he ever addressed—namely, the meaning and status of science and technology in our political order.

Let me begin, as I believe Walter might have, by drawing a contrast between ourselves and the ancient Greek city-state of Sparta. Our regime is uniquely friendly to science, as can be seen from Article 1, Section 8, of the US Constitution, which grants Congress the power “to promote the Progress of Science and useful Arts.” Unlike us, Sparta didn’t believe in promoting progress (scientific or otherwise) because it didn’t believe there was such a thing as progress, at least not after the great leap forward of its dramatic founding by Lycurgus. If the political community is already in the best of health, then change can only mean decline. To stave off decline, Sparta disallowed the great agents of change: trade and technology. Interestingly, this devotion to fixity also entailed hostility to the written word. Sparta’s fundamental ordinance, called the Great Rhetra, which came direct from the Delphic oracle, was that the laws should never be put in writing. Instead, Sparta sought to imprint
its unwritten laws on the young through “good discipline.” Sparta aimed to write indelibly, on the heart itself, thus creating incontestable agreement—the kind of homogeneity that repels questioning. The avoidance of the written word affected the spoken word too. We still call a terse, uninquisitive style of speech “laconic” after Laconia, the region of the Peloponnese where Sparta was located.\(^1\)

Opposition to written laws has not been as pronounced in other nations or traditions. Certainly, the adherents of the Abrahamic religions, often called the Peoples of the Book, managed to embrace writing without sacrificing reverence. Moses and the biblical God took a different route to obedience than Lycurgus and the Delphic oracle, but both sought obedience. Yet it seems that the written word, even when the Writ is regarded as Holy, does invite quarrels over interpretation. The exegetes of the Torah, Bible, and Koran are the precursors of our schismatic schools of constitutional interpretation.

Even after the advent of written scripture, it took an awfully long time for the innovation of a written constitution to appear. Ours, as we all know, was the first. The idea caught fire: Of the almost 200 nations in the world today, only the merest handful are without a codified constitution, and those few (e.g., the UK, Israel, and Saudi Arabia) do, as a matter of course, have statutory laws, not simply customs.

It shouldn’t be surprising that the world’s first written constitution contains an explicit acknowledgment of progress as a human possibility. The progressive assumption is there not only with general reference to science and technology, but politically as well. The Preamble asserts that the Constitution aims to achieve “a more perfect Union” and to “promote the general Welfare”; both phrases emphasize improvement—indeed, the literal meaning of “pro-mote” is “to forward move.” Likewise, the provision for constitutional amendments (in Article 5) welcomes a search for further political improvement, and the provision for “new States” (in Article 4, Section 3) encourages the country’s enlargement. “Bigger and better” is the American way. The project “to institute new government,” first called for in the Declaration of Independence and
finally realized in the US Constitution, is defended in *The Federalist Papers*, where the word “new” is repeatedly invoked. The authors of the “new science of politics” pursued “a new and more noble course” incorporating “wholly new discoveries” into the “new modelled” “new Constitution.” “New” is the oldest word in the American political lexicon.²

Arguably, the greatest generator of newness is that clause I began with, a clause that is known not as “the science clause” or “the progress clause” but as “the patent and copyright clause,” although neither the word “patent” nor “copyright” appears in the text. Here’s the full sentence: “The Congress shall have Power . . . to promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.” Of the 18 paragraphs in Section 8, each one specifying a power of Congress, this one is unique. All the other paragraphs simply state, without elaboration, what power is being granted—for instance, Congress shall have power “to borrow money” or “to establish Post Offices.” The means for “carrying into Execution” each of the enumerated powers is left up to Congress under the general guidance of “the necessary and proper clause,” which concludes Section 8. However, in the case of the power to promote the progress of science, the means to attain the object are spelled out. Issuing patents and copyrights seems to be the sole constitutional means by which the federal promotion of science can be pursued. Thus, what could have been a very far-ranging grant of power became instead a narrow one. Accordingly, we refer to the clause by its restricted means rather than its more expansive aim; it is “the patent clause” rather than “the progress of science clause.”

According to Madison’s records of the Constitutional Convention, the initial suggestions for this section detailed many other modes of promoting the arts and sciences, such as offering research grants and prize money to inventors, as well as establishing public institutions of learning.³ All the suggestions were sent, by unanimous vote, to the Committee of Detail. We know nothing about the discussions that took place there. All we know is that the final
wording was approved by the full body, unanimously and without discussion, during the last two weeks of the convention.

It might be worth noting that the limits expressed in the clause flow in two directions, by which I mean that, just as the promotion of science is limited to patents, the rationale for patents is limited to their public benefits. Patents, remember, were considerably more controversial than post offices. Patents began in England as monopoly privileges granted by the Crown to merchants who garnered royal favor. The drafters of the Constitution wanted to be clear that their reason for protecting the financial interests of authors and inventors was for the public purpose of promoting scientific progress. They were not providing a blanket congressional authorization to set up commercial monopolies or allocate economic privileges, as the Crown had routinely and abusively done in eras past. Indeed, the Constitutional Convention rejected wording that would have granted Congress the power to charter corporations.

There is one other unique feature of the patent clause: It refers to a “right”—the only instance of the word in the Constitution of 1787. This “right”—which we now call an “intellectual property right”—is, however, very different from the rights that would soon be acknowledged in the decalogue of constitutional amendments. The Bill of Rights forbids Congress from abridging or violating the fundamental rights of conscience, speech, and personal security. By contrast, intellectual property rights are left entirely subject to Congress’ statutory determination. Benefiting from the commercialization of one’s writings and discoveries is not, it seems, a natural right (an inalienable right), but rather a civilly granted privilege.

It’s worth thinking about why this is so. Certainly, one has an inviolable right to think one’s own thoughts. However, once you publish them, the ideas expressed cease to be yours. They become the shared possession of all who comprehend them. The Pythagorean theorem does not belong to Pythagoras and never did. By nature, the realm of ideas is pure communism. What the copyright clause does is say that in hopes of encouraging more folks to think original thoughts, society will forgo its claim for a certain amount
of time and create instead an artificial right in the first thinker who decides to share his thoughts. Kindergarten teachers do the same when they encourage children to share by offering tangible rewards for sharing (candy or gold stars), thereby yoking the self-interest of the child to the public interest. The notion of intellectual property rights is itself a human invention for the encouragement of human invention. But that also means that intellectual property rights can be changed and redefined to fit the needs of the commonwealth.

Although limited in the ways I have outlined, the patent clause is not inconsiderable. As Abraham Lincoln so vividly described in his “Lecture on Discoveries and Inventions,” what the patent clause does is add “the fuel of interest to the fire of genius.” That is a pretty combustible combination—one that has certainly furthered the Promethean achievements of modern science and technology. The underlying assumptions of the patent provision are that scientific advance will redound to the public good and that the public good can be achieved by rewarding private enterprise.

The Founders

Although the power to establish a national university or to award premiums for discoveries was dropped from the Constitution, some of the Founders continued to press for wider state sponsorship of science, especially applied science. Alexander Hamilton, for instance, concluded his 1791 Report on Manufactures with a plan to establish a board of commissioners whose task would be to incentivize “useful discoveries . . . by proportionate rewards.”

Hamilton’s boss, George Washington, believed that Congress could go beyond the self-interest-based appeal of patents. “There is nothing which can better deserve your patronage,” he told Congress in his first annual message, “than the promotion of science and literature. Knowledge is, in every country, the surest basis of public happiness.” Washington put his great moral authority, and substantial financial backing as well, squarely behind the idea of a national university located in the nation’s capital.
endorsed by the next five presidents, the plan was never taken up by Congress. In his farewell to the nation, Washington emphasized the harmony between moral, political, and intellectual progress. Religion and morality, he argued, are the “great Pillars of human happiness,” as well as “indispensable supports” for political liberty and prosperity. How can religion and morality be fostered? According to Washington, through education. The first use of the imperative voice in his Farewell Address is a command to “Promote then as an object of primary importance, Institutions for the general diffusion of knowledge.” Washington anticipates no conflict between religion and reason, between morality and enlightenment.

John Adams, despite his great erudition, was not quite as sanguine about the happy cooperation of the intellectual and moral realms. Listen to his description of what really motivates the men of science and letters.

Scholars learn the dead languages of antiquity as well as the living tongues of modern nations; . . . They puzzle themselves and others with metaphysics and mathematics. They renounce their pleasures, neglect their exercises, and destroy their health—for what? Is curiosity so strong? . . . If Crusoe on his island had the library of Alexandria and a certainty that he should never again see the face of man, would he ever open a volume? Perhaps he might; but it is very probable he would read but little. A sense of duty, a love of truth, . . . may, no doubt, have an influence on some minds. But the universal object and idol of men of letters is reputation.

Cynical, perhaps, but hard to gainsay.

The conclusion Adams draws is that the spread of enlightenment will heighten human vanity; “the more knowledge is diffused,” he says, “the more the passions are extended, and the more furious they grow.” Adams would not be surprised that the technology of social media, which has made everyone and his brother into an author, has also given rise to phenomena such as vengeful trolling and cyberbullying, or even just the vanity-driven obsession with
“likes” and “shares” and all the new metrics of reputation-mongering. While Adams was, like Washington, a proponent of public schooling, he put the greatest weight on constitutional structure. Since rivalries were bound to increase with the increase of knowledge, “the essence of a free government,” Adams claimed, “consists in an effectual control of rivalries.” What he had in mind, of course, were mechanisms such as the separation of powers and an ingenious system of checks and balances.

One final note about Adams: He saw with prophetic clarity how science could turn into “scientism.” An ideologized science might become the purveyor of what Adams called “the most disconsolate of all creeds, that men are but fireflies and that this all is without a father.” He predicted that thoroughgoing materialism would be antihuman in its effects, justifying even genocide. If “man, as man” is not “an object of respect,” then, he said, “the extermination of . . . [a] nation” would be “as innocent as the swallowing of mites on a morsel of cheese.” The murderous rationalizations of Marxism and Fascism were already glimpsed by Adams. He had a further worry that the natural human response to such atheistic doctrines would be a longing to return to religious belief, but of the worst, most superstitious, fanatical, and modernity-hating kind (a prediction that we perhaps see borne out in the rise of radical Islam).

John Adams and Thomas Jefferson disagreed on many things: the promise and peril of science among them. Of all the Founders, Jefferson came closest to succumbing to what Adams might have called “the French Temptation,” expecting too much of reason and underestimating its all-too-human character. Jefferson was radically pro-science, to the extent of asserting that “the general spread of the light of science” would demonstrate the truth of human rights. Despite his faith in the “unbounded exercise of reason,” at other times Jefferson insisted that the “only firm basis” for “the liberties of a nation” was “a conviction in the minds of the people that these liberties are of the gift of God.” More troubling than his waffling on the foundation of rights is the fact that Jefferson dabbled in the pseudoscience of his day. His speculations on the supposedly natural qualities (and inequalities) of
the various races testify to the all-too-human character of his own self-exculpatory reasoning.22

And yet, as Lincoln said, “all honor to Jefferson,” not only for writing the Declaration, but also for his impressive promotion of education.23 While Washington pushed for a national university, Jefferson acted locally and with greater success, founding the University of Virginia and setting its curriculum, while also sketching plans for a taxpayer-funded system of primary and secondary schools. Jefferson’s writings on the purposes of education, and the place of science within education, are still well worth reading. So too his fascinating letter to Isaac McPherson on the question of whether property in ideas is natural or conventional. Although himself the designer of patentable devices, Jefferson declined to seek what he called “monopolies of invention,” in accord with his belief that “ideas should freely spread from one to another over the globe.”24

Benjamin Franklin agreed, and he was a veritable Vesuvius of discoveries and inventions. An internationally renowned scientist, with an imagination both visionary and eminently practical, Franklin was a disciple of Francis Bacon, looking to science for the relief of man’s estate and fully expecting stunning advances in “the Power of Men over Matter.”25 In a letter to fellow scientist Joseph Priestley, Franklin predicts victory over “all Diseases . . . not excepting even that of Old Age.”26 The 74-year-old Franklin fantasizes about conquering gravity so that men might attain “absolute Levity, for the sake,” he says, “of easy Transport.”27 One of his own unsuccessful inventions involved a balloon that was to hoist him a few inches off the ground, while a friend walked along with the gout-ridden Franklin blimp in tow. This image of Franklin floating just above the human scene is an apt one, since the levity Franklin aimed at was more than physical; it was philosophic. He had a kind of lightness of spirit or equanimity about the human situation. Although he signed on to the Baconian project, he remained alert to the dangers of scientific hubris. Thus, in that same letter to Priestley, he makes clear that he doesn’t expect improvements in “moral Science,” since it is unrealistic to think “that Men would cease to
be Wolves to one another.” Franklin, like that other American original, Mark Twain, turned to humor to deflate the pretensions of believers of all sorts. He skewered the pro-science fanatics as readily as he did the religious enthusiasts. The spoofs and satires Franklin wrote, almost always under one pseudonym or another, were designed to make us a little more modest, a little more charitable, and a lot more cheerful.

Lincoln

That’s my quick survey of the Constitution’s take on science, supplemented with a few reflections by some of the leading Founders. What I’d like to do in the time remaining is focus on Abraham Lincoln’s “Lecture on Discoveries and Inventions,” which I believe is the most sustained treatment by any America statesmen of the meaning and dilemma of science.

Before hazarding an interpretation, it must be pointed out that we unfortunately don’t have the speech in its final form. What we have are two substantial portions (8–10 pages each), which were long thought to be separate efforts—the “First Lecture on Discoveries and Inventions” and the “Second Lecture on Discoveries and Inventions”—but which may, in fact, be parts of a larger whole. We do know that versions of the speech were delivered multiple times over the two-year period from early 1858 to early 1860, during a period of extremely heightened public passions. It was first presented a couple of months before Lincoln’s House Divided speech: the speech in which he accepted the Republican nomination for the Senate and sketched the contours of the looming crisis. It was presented again, a handful of times, after his electoral loss to Stephen Douglas in that Senate race. The other activity that kept Lincoln occupied during this time was the preparation of a book-length version of his already famous debates with Douglas. As we’ll see, the very heart of the “Lecture on Discoveries and Inventions” is a claim about the effect of the invention of the printing press on the affairs of mankind. The medium of print allows one, Lincoln
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says, to “converse with the . . . unborn, at all distances of time and of space.” Getting the Lincoln-Douglas debates into print meant that Lincoln’s forensic victory over Douglas stood, in his words, “a better chance of never being forgotten,” whatever might befall the country—even if what happened was the continuation of the Democratic Party’s dominance and the nationalization of slavery. Finally, Lincoln delivered the lecture one last time after his tremendous Cooper Union address, the speech that fortified his status as a presidential contender in 1860. So, it was during this time of intense partisan involvement that Lincoln saw fit to work on what he thought of as his “Lecture on Man.” Apparently, this was material that Americans needed to ponder—in a wisdom-seeking spirit—as “the crisis of the house divided” gathered steam.

All right, enough preliminaries. The “First Lecture,” which I take to be the opening section of the speech, presents a survey of technological advances as gleaned from the Bible. This is no ordinary account of human ingenuity. Let me quote from the opening:

All creation is a mine, and every man, a miner.

The whole earth, and all within it, upon it, and round about it, including himself, . . . are the infinitely various “leads” from which, man, from the first, was to dig out his destiny.

In the beginning, the mine was unopened, and the miner stood naked, and knowledgeless, upon it. . . .

Lincoln rewrites Genesis—presenting man not in the Garden of Eden or even tossed out of the Garden to be a tiller of the soil, but instead as a miner, a deep-digger, engaged in an extractive, industrial process. The mining metaphor, which coincidentally was much used by Francis Bacon, suggests that truth is hidden and that nature, even our own nature, does not reveal itself without the
application of labor. Lincoln admits that other animals labor too, since they provide themselves with homes and food, but human labor is unique since man is the only animal “who improves his workmanship.” Human labor, we might say, is scientific. Lincoln, however, doesn’t use an abstract word like “science” or “scientific.” His language is more explanatory. He says that “this improvement” is accomplished “by Discoveries, and Inventions.” And he gives a memorable illustration of those two operations: Man’s “first important discovery was the fact that he was naked; and his first invention was the fig-leaf-apron.”

From that beginning point, Lincoln traces the scriptural evidence of human industry and its results. He moves from clothing to iron to forms of transport, then agriculture, and finally various forces that can replace “man’s own muscular power”—namely, animal power, wind power, water power, and steam power. Lincoln quotes from and cites 23 Bible verses, tracking such things as the first mention of “thread” or “instruments of iron” or “chariots.” He also references another dozen or so Bible passages, sometimes quoting but not citing, sometimes citing but not quoting, sometimes merely alluding to particular books of the Bible. His account draws exclusively from the Old Testament, other than a single closing passage from the New Testament. The only New Testament verse, “Two women shall be grinding at the mill,” said to be “the language of the Saviour” is offered to prove that the water wheel was unknown in Bible times. The verse, found in both Matthew and Luke, refers to the Rapture at the Second Coming of Christ, while the surrounding verses detail the time of tribulation at the end of days. Thus, the horizon of the “First Lecture” stretches from the creation of the earth to its destruction.

As this last instance more than indicates, this is an unorthodox way to employ the Bible. Now perhaps a pious man turns to the Good Book on all occasions (just as a good American turns to Lincoln), but still, this is making the Bible serve a purpose that seems altogether alien to the text. Matthew 24 is about the “weeping and gnashing of teeth” and Christ’s prophecy of his return in power and glory; it is not about when the knowledge of hydropower was
acquired. I think the natural question must be “What the heck is Lincoln doing?” I want to suggest that Lincoln is quite aware of what he is doing and that he has carefully selected these Bible references in order to tell two stories simultaneously. The first is a story of technological progress—slow but perceptible. The other is a story of sin, slavery, and divine punishment. Each human invention that is mentioned, beginning with that fig-leaf apron, is linked to a tale of disobedience and suffering.\(^{37}\)

Let me give another example. After telling of the invention of clothing in response to the discovery of nakedness, Lincoln says, “The Bible makes no other allusion to clothing, before the flood. Soon after the deluge Noah’s two sons covered him with a garment; but of what material the garment was made is not mentioned.” This, of course, is another story of nakedness and shame. Lincoln doesn’t mention the third son of Noah, Ham, who both saw and spoke of “the nakedness of his father” and whose descendants were cursed with enslavement as a result. Well-known to Lincoln and his audience was that this Bible story was a staple of pro-slavery apologetics, providing a supposed theological justification for African slavery.

This is not the only allusion to slavery. Indeed, the entire assemblage of verses that Lincoln cites could be said to revolve around the sojourn of the Jews in Egypt. The two centuries of Hebrew enslavement—with obvious parallels to American slavery—form the subtext of Lincoln’s speech. I don’t know whether to call Lincoln’s method of two-tiered composition “esoteric” or not. It seems to me that Lincoln very much wants his audience to perceive his double inquiry into technological progress on the one hand and, on the other, moral non-progress, as in the hard-heartedness of Pharaoh. Lincoln can assume, as we today cannot, considerable familiarity with these Bible stories, but he also provides chapter and verse for those who want to be miners of the written word, contrasting his text with his source text.

When you follow his “leads,” you discover another dimension of man’s destiny, a political dimension. Lincoln makes repeated reference to one nation: Egypt.\(^{38}\) The very last topic in the “First
Lecture” is steam power. Lincoln points out that the Egyptians understood the principle, for they had a steam-powered toy (the aeolipile). However, they never applied the principle of steam power to “useful machinery.” He doesn’t say so, but one wonders whether in their pride and stubborn reliance on slave power, the Egyptians failed to pursue the liberating potential of technology. Certainly, Lincoln emphasizes that the ancient world relied on manpower and animal power, to the neglect of the “motive power” of wind, water, and steam.

Like Egypt, the American South was a slave power, neglectful of technology. Although beholden to the Massachusetts inventor Eli Whitney for the cotton gin (patented in 1794), the South was neither theoretically inclined nor mechanically minded: “The Confederate Patent Office issued only two hundred and sixty-six patents during the whole war, as against more than sixteen thousand granted by the Union.” The North surely had a genius for invention, but invention by itself is morally ambiguous, as can be seen in the career of Eli Whitney. Whitney’s quest for efficiency reinvigorated the moribund plantation economy of the early 1800s giving us King Cotton. But that same Whitney was a pioneer in developing standardized, interchangeable parts, which revolutionized industrial production in Northern factories, especially armories, thus playing a key role in the Union victory in the Civil War.

If it is the case that Lincoln gives us a history of technology through the Bible so that he can deliberately tell two stories at once, what does he hope to achieve thereby? Americans, who had long believed that they were the new Israel, might not welcome being told that they are really the new Egypt, with their black slaves in the role of the chosen people of God. Now, the radical abolitionists frequently invoked this unflattering Biblical parallel, but Lincoln had done so explicitly only once, at the close of his Dred Scott speech. In this lecture, he proceeds by indirection, avoiding vituperation and moral fervor but dropping plenty of hints about God’s punishment of Egypt (“the horse, and his rider hath he thrown into the sea”). The contrast between Lincoln’s rhetoric and that of the abolitionists could not be more dramatic. The
abolitionists loved to quote Isaiah, the prophet who pronounced judgment upon all the nations with lines of terrifying vividness: “Through the wrath of the Lord of hosts is the land darkened, and the people shall be as the fuel of the fire; no man shall spare his brother.” Lincoln mentions Isaiah twice, but only to trace the first mention of “oar” and “sails.” His mode is the opposite of the moral harangue; it is oblique and evocative—inviting thoughtfulness and further examination.

Again, for those who follow Lincoln’s “leads,” the verses in Matthew 24 that immediately follow Lincoln’s only New Testament quotation refer to a house divided.

Two women shall be grinding at the mill; the one shall be taken, and the other left. Watch therefore; for ye know not what hour your Lord doth come. But know this, that if the goodman of the house had known in what watch the thief would come, he would have watched, and would not have suffered his house to be broken up.

It is with that implied warning that Lincoln shifts to the second part of the lecture, where he focuses directly and unmetaphorically on the United States.

“We have all heard of Young America,” he begins. He details how this personage, this “most current youth,” fares with respect to the specific arts—clothing, agriculture, and transportation—that he had examined through scripture in the first part. Young America is a figure of consumerist luxury, wearing fabrics and enjoying delicacies brought from all over the globe. The Egyptian horses drowned in the Red Sea during the Exodus have been replaced by the “iron horse”—the railroad—“panting, and impatient, to carry him everywhere, in no time.” Lincoln’s tone has a satiric bite. “Young America,” it turns out, was a campaign slogan associated with his political rival Stephen Douglas. Lincoln’s riff on “Young America” and “Manifest Destiny,” another slogan belonging to the Democratic Party, becomes especially pointed when he alludes first to the Mexican War and then to American slavery. Here’s what he says:
[Young America] owns a large part of the world, by right of possessing it; and all the rest by right of wanting it, and intending to have it. As Plato had for the immortality of the soul, so Young America has “a pleasing hope—a fond desire—a longing after” territory. He has a great passion—a perfect rage—for the “new”; . . . He is anxious to fight for the liberation of enslaved nations and colonies, provided, always, they have land, and have not any liking for his interference. As to those who have no land, and would be glad of help from any quarter, he considers they can afford to wait a few hundred years longer. In knowledge he is particularly rich. He knows all that can possibly be known; . . . and is the unquestioned inventor of “Manifest Destiny.” His horror is for all that is old, particularly “Old Fogy”; and if there be any thing old which he can endure, it is only old whiskey and old tobacco.

After taking this partisan swipe at Young America’s hubris and hypocrisy, Lincoln immediately moves to higher ground, inquiring whether Young America does indeed have the advantage over Old Fogy and, if so, what the “great difference” really is. Lincoln conducts his own version of the quarrel of the ancients and the moderns. He starts by returning to the mode of biblical exegesis, calling to the bar “the first of all fogies, father Adam.” Examining that “first of all inventions, . . . the fig-leaf apron,” Lincoln shows that Adam “had first to invent the art of invention,” an art that depends on the prior habits of observation and reflection, habits which themselves depend on the human faculty of speech. And speech, says Lincoln, does not appear to be “an invention of man, but rather the direct gift of his Creator.” Even if it is a human invention, speech is only possible, says Lincoln, because of fixed biological features such as “the capacities of the tongue, in the utterance of articulate sounds”—capacities that Lincoln declares “absolutely wonderful.” Illustrating his meaning about human communicativeness, Lincoln mischievously adds:

And this reminds me of what I passed unnoticed before, that the very first invention was a joint operation, Eve having shared with
Adam in the getting up of the apron. And, indeed, judging from the fact that sewing has come down to our times as “woman’s work” it is very probable she took the leading part; he, perhaps, doing no more than to stand by and thread the needle.  

Lincoln repeatedly reminds his audience—an audience inclined toward chauvinism of both the male and national varieties—of the humbling things they might prefer to forget.  

Not only are human beings beholden to their natural endowment and their immediate fellows (including female fellows), but there are intergenerational debts as well. The current generation is the beneficiary of the advances made by those “very old fogies” of earlier times. Lincoln suggests a humility-inducing thought experiment: “Suppose the art [of writing], with all conception of it, were this day lost to the world, how long, think you, would it be, before even Young America could get up the letter A. with any adequate notion of using it to advantage.” It’s Lincoln’s Obama-esque “you didn’t build that” moment. While he doesn’t reduce the current generation to pygmies standing on the shoulders of giants, he does stress our position as privileged and rather complacent inheritors.  

Still, there is a modern difference. Improvements were achingly slow until the invention of printing, which Lincoln calls the “the other half—and in real utility, the better half—of writing.” Printing expands the field for invention—including political inventions such as our Constitution—because printing awakens in human beings the thought of “rising to equality.” Printing is the emancipation proclamation of the mind.  

The final section of the speech pursues this question of modern superiority. Lincoln adds two more modern achievements—“the discovery of America, and the introduction of Patent laws”—both of which have played a role in vastly accelerating the rate of discovery and invention. In the midst of his genuinely appreciative account, Lincoln stops suddenly and says:

Though not apposite to my present purpose, it is but justice to the fruitfulness of that period, to mention two other important
events—the Lutheran Reformation in 1517, and, still earlier, the invention of negroes, or, of the present mode of using them, in 1434.48

Once again, the oddity of Lincoln’s procedure is striking. He just drops in that ironical phrase “the invention of negroes” and then resumes his appreciative consideration of printing. What are we to think now of the contrast between ancients and moderns? In the first lecture, we learned of the slaveholding Egyptians who never realized the power of steam; in the second lecture, we get the full-steam-ahead Americans who really have unleashed “the intellects and energies of man” and yet have also contrived to turn other men into inventions.

Lincoln has mentioned five modern events. Together, these five events provide a genealogy of “the crisis of the house divided.” The two seminal inventions of modernity presage the conflict: The invention of printing in 1436 pointed humanity toward freedom; “the invention of negroes” in 1434 created a new, more virulent form of slavery. The discovery of America in 1492 provided the ground on which both forces (slavery and freedom) eventually converged. The Reformation in 1517 added religious support for the cause of political liberty. Patent law in 1624, like the discovery of America, is ambiguous or double-edged.

If the negro is an invention, then that invention can presumably be patented, which is essentially what happened when the Royal African Company was granted exclusive rights to the slave trade in the 17th century or when the cotton gin was invented and the Southern states were refounded on what Lincoln in his sixth debate with Douglas called “the cotton-gin basis.”49 We might with justice say that Lincoln’s entire public career was devoted to dis-inventing the Negro, or dis-inventing the present mode of using him. He sought to move the Negro from his status as an invention to his rightful status as a human being.50

Clearly, not every invention advances civilization. Lincoln concludes his speech by returning to the one invention he considers most efficacious for good: namely, the printing press. He credits
a technological advance with breaking the “slavery of the mind.” Slavery has been present throughout the speech, first by implication through the references to Pharaoh and Egypt, Moses and the children of Israel, then through the reference to “enslaved nations and colonies” in his denunciation of American expansionism, and finally in that mordant line about the invention of Negroes. Now, at the very end of the speech, Lincoln shows that there is another aspect of slavery, an internal or spiritual aspect. He unearths the deepest cause of slavery, which turns out not to be political oppression but rather ignorance—ignorance of one’s human nature. Before the print revolution,

the great mass of men . . . were utterly unconscious, [says Lincoln] that their conditions, or their minds were capable of improvement. They not only looked upon the educated few as superior beings; but they supposed themselves to be naturally incapable of rising to equality. To emancipate the mind from this false and under estimate of itself, is the great task which printing came into the world to perform.

And yet, Lincoln indicates, technology by itself is insufficient, since it only supplies the “means of reading.” The existence of printed matter doesn’t guarantee literacy. For that you need teachers—and teachers, Lincoln laments, have not been “very numerous, or very competent.”51 We are back at the one piece of advice that the Founders and Lincoln agreed on: America is dedicated to the proposition that “all men are created equal,” but it is only through education, and a certain kind of education, that individuals actually become capable of “rising to equality.” Of course we need training in the STEM fields, and yes our regime is uniquely open to science, but we should not forget that applied science can underwrite slavery as easily as liberty. We need civic education and liberal education—education that reminds Americans of the great difference between self-aggrandizement and self-government, between mastery of self and mastery over others—education that promotes not only science and useful arts, but wisdom, Lincolnian wisdom.
Notes

1. The Spartan way of life was designed to be the unexamined life. As described by Plutarch, Spartan habituation was singularly harsh, even inhumane. The collective was all; the individual nothing. Love of country was achieved by repressing all other loves, whether love of others or love of self. This was a hypertrophic patriotism that left no room for private life, private property, or the private pursuit of fame, fortune, or learning. No self-interest, no self-preservation, certainly no self-promotion, no self at all really.

2. See especially Federalist, no. 14.

3. Many types of institutions were recommended, from seminaries (a term that often referred to educational academies for women) to trade schools to universities. James Madison, Notes of Debates in the Federal Convention of 1787 Reported by James Madison (1787), notes for August 18, 1787.


5. Madison, Notes of Debates, August 18, 1787.

6. In saying that the right is to be secured “for limited Times,” it is strongly implied that the right is not to be lifelong. It is alienable, not inalienable. Moreover, Congress is not required by the Constitution to grant authors and inventors copyrights and patents. Congress could have allowed this power to lie fallow, without violating anyone’s rights.

7. Abraham Lincoln, “Lecture on Discoveries and Inventions,” in The Writings of Abraham Lincoln, edited by Steven B. Smith (New Haven, CT: Yale University Press, 2012), 238. Lincoln regularly employed italics to feature key words. In this and all following quotations, the italics are his.

8. James Madison discusses the patent clause in Federalist 43, where he declares that in this matter of extending copyrights and patents to authors and inventors, “The public good fully coincides . . . with the claims of individuals.”


11. Washington hoped a national university would do the additional good work of lessening the North-South divide through the power of youthful friendship and a common curriculum.

12. John Quincy Adams was the last to call for it. Andrew Jackson did not follow suit.


16. Adams, *Discourses on Davila*.

17. Adams, *Discourses on Davila*.

18. Adams, *Discourses on Davila*.

19. Adams, *Discourses on Davila*.


25. Benjamin Franklin, “To Joseph Priestley,” in *Benjamin Franklin:

27. Franklin, “To Joseph Priestley.”
29. See especially Benjamin Franklin, “To the Royal Academy of *****,” in Benjamin Franklin, 952–55.
30. Lincoln combines elements of the four Founders I’ve mentioned. He was a mechanically minded inventor like Franklin and Jefferson, but unlike them the holder of a patent (for a device to lift boats over shoals). Devoted to Jefferson’s Declaration, he had a deeper understanding of the document than did its author. Like Adams, he was by temperament a conservative, acutely aware of the limits of human nature and political action. Like Franklin, he was the discoverer of new modes of reaching a democratic audience through the written word. Finally, and most importantly, he was a statesman to rival Washington.

31. The first lecture is available here: Abraham Lincoln, “First Lecture on Discoveries and Inventions,” April 6, 1858, http://teachingamericanhistory.org/library/document/first-lecture-on-discoveries-and-inventions/. The second lecture is more frequently included in volumes of Lincoln’s speeches. Both the Library of America collection and the Steven B. Smith collection (see endnote 7) include it, although it is not present in the one-volume Basler edition. There is both internal textual evidence and journalistic accounts that suggest these two parts belong to a larger whole. Moreover, upon heading to Washington to assume the presidency, Lincoln taped the two manuscripts together and entrusted them to a Springfield acquaintance for safekeeping. In early 1865, he expressed an intention to put the lecture into final form, post-presidency or, as he put it, “when I get out of this place.” See Wayne C. Temple, “Lincoln as a Lecturer on ‘Discoveries, Inventions, and Improvements,’” Jacksonville Journal Courier, May 23, 1982, 1–12; and John Channing Briggs, Lincoln’s Speeches Reconsidered (Baltimore: Johns Hopkins University Press, 2005), 190–92.
32. Lincoln biographer Michael Burlingame reports Mrs. Norman B. Judd’s version of the lecture’s origin: “In 1856, Lincoln told her that one evening he and fellow lawyers on the circuit were discussing the date at which the brass age began. He recalled that Tubal Cain the son of Lamech,
worked in brass and that his brother Jubal made harps and organs. Checking his recollection in the Bible, he ransacked the Old Testament and compiled a list of the discoveries and inventions mentioned there. Shortly afterward, he accepted an invitation to address the Young Men’s Literary Society in Bloomington; he used those Old Testament notes, as well as some research in an encyclopedia, to create his lecture.” Michael Burlingame, *Abraham Lincoln: A Life*, vol. 1 (Baltimore: Johns Hopkins Press, 2013), 443. Scholars have been generally dismissive of his effort: “Unharnessed from the great issues with which he had been engaged, Lincoln’s humor unraveled into whimsy; his interest in history shrunk to a harvest of trivia.” Richard Brookhiser, *Founders’ Son: A Life of Abraham Lincoln* (New York: Basic Books, 2014), 140. An exception is John Channing Briggs who in *Lincoln’s Speeches Reconsidered* gives a well-considered reading of the address, from which I have learned much. Briggs situates Lincoln’s lecture as a critical response to two well-known pieces of the day: George Bancroft’s “The Necessity, the Reality and the Promise of the Progress of the Human Race” (1854) and Wendell Phillips’s 1853 lecture “The Lost Arts.”

33. Bacon, in *The Advancement of Learning*, compares natural philosophy to mining: “If then it be true that Democritus said, ‘That the truth of nature lieth hid in certain deep mines and caves;’ and if it be true likewise that the alchemists do so much inculcate, that Vulcan is a second nature, and imitateth that dexterously and compendiously, which nature worketh by ambages and length of time, it were good to divide natural philosophy into the mine and the furnace, and to make two professions or occupations of natural philosophers—some to be pioneers and some smiths; some to dig, and some to refine and hammer. And surely I do best allow of a division of that kind, though in more familiar and scholastical terms: namely, that these be the two parts of natural philosophy—the inquisition of causes, and the production of effects; speculative and operative; natural science, and natural prudence.” Francis Bacon, *The Advancement of Learning* (London: 1605), book 2, VII (1), http://www.philosophy-index.com/bacon/advancement-learning/. See also Cesare Pastorino, “The Mine and the Furnace: Francis Bacon, Thomas Russell, and Early Stuart Mining Culture,” *Early Science and Medicine* 14, no. 5 (2009): 630–60, http://www.academia.edu/1040095/
Interestingly, Lincoln does not mention the making of bricks for the building of the city and tower of Babel. His focus is more on “motive” power, the power to make things move. Still, the oversight is intriguing. He may not want to highlight God’s clearly expressed opposition to human technological aspirations. And given his praise for speech, writing, and printing, he may not want to feature God’s confounding of mankind’s quest for one universal tongue.

The account in the first lecture draws very heavily from Genesis, Exodus, and Deuteronomy. These are the verses either alluded to, quoted, or cited by Lincoln, in the order he gives them, following his ordering of the topics. Provision of food: Lincoln alludes to Solomon’s advice to imitate the animals, though without either quoting from or citing Proverbs 6:6. Clothing: Genesis 3:21, 9:23, 14:23; Exodus 28:42, 35:25, 35:26, 35:35. In addition, Job is quoted but not cited. The quote is from Job 7:6. Tools of iron: Genesis 4:22; Numbers 35:16; Deuteronomy 3:11, 4:20, 27:5, 19:5, 8:9. The need for an axe “or a miracle” to hew the “gopher wood’ for the Ark” is mentioned but not cited. The reference is to Genesis 6:14. Transportation: Genesis 41:43; Exodus 14:25, 14:9, 14:23, 49:13. In addition, Isaiah is quoted but not cited. The reference is to Isaiah 33:21–23. Note: Lincoln decides to “pass by the Ark” as “belonging rather to the miraculous, than to human invention.” Agriculture: Two verses are quoted but without citation: Genesis 2:15, 3:23. Animal power: Genesis 22:3, 24:61; Exodus 15:1; Genesis 42:26. Four additional verses are cited as evidence of plows and chariots, without quotation: Deuteronomy 22:10; Genesis 41:43 [second reference], 46:29; and Exodus 14:25 [second reference]. Wind power: Isaiah is mentioned but not quoted. Waterpower: One verse is quoted but not cited. The verse is found in Matthew 24:41 and Luke 17:35. Steam power: No Bible reference. In the second lecture, one final biblical reference is made to “the new earth mentioned in the revelations.” The reference is to Revelation 21:1.

The Bible is, of course, interested in man’s desire for knowledge and the meaning of human artfulness. However, Lincoln is—on the surface at least—looking simply for the facts of the history of technology. His official purpose is oddly disconnected from any moral inquiry. In The
Advancement of Learning, Francis Bacon had taken note of the fact that the Bible preserved the memory of the earliest inventors: “So in the age before the flood, the holy records within those few memorials which are there entered and registered have vouchsafed to mention and honour the name of the inventors and authors of music and works in metal.” Bacon, *The Advancement of Learning*, book 1, VI (8).

37. The Bible has its own view of artificers, beginning with Cain, whose name comes from a stem meaning “to fashion, shape, give form to.” See Umberto Cassuto, *A Commentary on the Book of Genesis Part 1: From Adam to Noah*, trans. Israel Abrahams (Jerusalem: Magnes Press, 1961), 197. The Bible suggests a connection between the arts and the murderers Cain and Lamech. Cain’s descendant Tubal-Cain (whom Lincoln mentions) was the inventor of the first tools.

38. While he mentions Abraham, Isaac, Jacob, Joseph, and Moses by name and refers to the “promised land,” only once does he mention “the children of Israel.”


42. Isaiah 9:19.
43. Science confirms the wonder. Based perhaps on a trial of his own, Lincoln provides the following statistics: “You can count from one to one hundred, quite distinctly in about forty seconds. In doing this two hundred and eighty three distinct sounds or syllables are uttered, being seven to each second; and yet there shall be enough difference between every two, to be easily recognized by the ear of the hearer.”

44. The speech is remarkable for the respectful attention Lincoln gives to women and women’s work. Of clothing, Lincoln declares it “the one thing for which nearly half of the toil and care of the human race has ever since been expended.” Lincoln gives two passages about women’s spinning—verses that emphasize women’s wisdom: “all the women that were wise hearted, did spin with their hands” and “all the women whose hearts stirred them up in wisdom, spun goat’s hair.” In addition to Eve, Lincoln names Rebecca, and Miriam is specially praised. In a version of the speech now lost to us but reported in detail in a newspaper account, Lincoln was said to have “paid a feeling tribute” to “plaintive songs.” He singled out “the triumphal exultation” of Miriam. Briggs cites the coverage in the Bloomington Pantagraph of April 9, 1859. He speculates that Miriam may have been a reference to Mary and the “Magnificat” of Luke 1:46–55, although I think it much more likely that Lincoln had in mind the Miriam of the Old Testament who was the sister of Moses and Aaron and who led the women of Israel in songful celebration of their deliverance from Egyptian bondage. See Exodus 15: 20–21. Briggs, Lincoln’s Speeches Reconsidered, 213.

45. Just as he had with speech, Lincoln indicates that writing, which he calls “the great invention of the world,” is only possible because of “the wonderful powers of the eye” which are not of human making.

46. This is similar to the Lyceum Address’ claim about political goods: “We find ourselves under the government of a system of political institutions, conducing more essentially to the ends of civil and religious liberty, than any of which the history of former times tells us. We, when mounting the stage of existence, found ourselves the legal inheritors of these fundamental blessings. We toiled not in the acquirement or establishment of them.” Abraham Lincoln, “The Perpetuation of Our Political Institutions,” in Basler, Abraham Lincoln, 76–77.

47. Bacon agreed: In his Novum Organum, book 1, aphorism 129, he
credits three inventions—printing, gunpowder, and the compass: “No empire, no sect, no star has been seen to exert more power and influence over the affairs of men than have these mechanical discoveries.”

48. The date Lincoln gives for “the invention of negroes” is the date when Portuguese explorers first rounded the treacherous Cape Bojador on the western coast of Africa, a feat of navigational expertise and daring that led almost immediately to the start of the African slave trade. Not all discoveries advance the cause of civilization.

49. From Lincoln’s rejoinder at the Sixth Joint Debate: “It is precisely all I ask of him in relation to the institution of slavery, that it shall be placed upon the basis that our fathers placed it upon. Mr. Brooks, of South Carolina once said, and truly said, that when this Government was established, no one expected the institution of slavery to last until this day; and that the men who formed this Government were wiser and better than the men of these days; but the men of these days had experience which the fathers had not, and that experience had taught them the invention of the cotton gin, and this had made the perpetuation of the institution of slavery a necessity in this country. Judge Douglas could not let it stand upon the basis which our fathers placed it, but removed it, and put it upon the cotton-gin basis. It is a question, therefore, for him and his friends to answer—why they could not let it remain where the fathers of the Government originally placed it.” Robert W. Johannsen, ed., The Lincoln-Douglas Debates (New York: Oxford University Press, 1965), 278.

50. Lincoln’s phrase “the invention of negroes, or, of the present mode of using them” should be read in conjunction with Lincoln’s speech at Edwardsville, Illinois, on September 11, 1858, where he inquires into “what Douglas really invented, when he introduced, and drove through Congress, the Nebraska bill.” He concludes that Douglas did not invent “popular sovereignty”—an idea that predated Columbus and was given “tangible form” in 1776. What then did Douglas invent? Lincoln spells it out with brutal frankness, giving the violent specifics of the “present mode” of “dehumanizing the negro”:

Then, if Mr. Douglas did not invent this kind of sovereignty [the 1776 kind], let us pursue the inquiry and find out what the invention really was. Was it the right of emigrants in Kansas and Nebraska to
govern themselves and a gang of niggers too, if they want them? Clearly this was no invention of his, because Gen. Cass put forth the same doctrine in 1848, in his so-called Nicholson letter—six whole years before Douglas thought of such a thing. Gen. Cass could have taken out a patent for the idea, if he had chosen to do so, and have prevented his Illinois rival from reaping a particle of benefit from it. Then what was it, I ask again, that this “Little Giant” invented? It never occurred to Gen. Cass to call his discovery by the odd name of “Popular Sovereignty.” He had not the impudence to say that the right of people to govern niggers was the right of people to govern themselves. His notions of the fitness of things were not moulded to the brazen degree of calling the right to put a hundred niggers through under the lash in Nebraska, a “sacred right of self-government.” And here, I submit to this intelligent audience and the whole world, was Judge Douglas’ discovery, and the whole of it. He invented a name for Gen. Cass’ old Nicholson letter dogma. He discovered that the right of the white man to breed and flog niggers in Nebraska was POPULAR SOVEREIGNTY!


51. Today we have plenty of teachers and plenty of classroom technology, but we still have problems with competence.
About Diana Schaub

Diana Schaub is visiting professor in the Government Department at Harvard University and professor of political science at Loyola University Maryland. She is a past member of the Hoover Institution’s Task Force on the Virtues of a Free Society and was the Garwood Teaching Fellow at Princeton University in 2011–12. From 2004 to 2009 she served as a member of the President’s Council on Bioethics. She was the recipient of the Richard M. Weaver Prize for Scholarly Letters in 2001 and is the author of Erotic Liberalism: Women and Revolution in Montesquieu’s “Persian Letters” (Rowman & Littlefield, 1995), along with numerous book chapters and scholarly articles in the fields of political philosophy and American political thought. She is coeditor with Amy and Leon Kass of What So Proudly We Hail: The American Soul in Story, Speech, and Song (Intercollegiate Studies Institute, 2011). She is a contributing editor of The New Atlantis and a member of the publication committee of National Affairs. Her essays and reviews appear in a variety of publications, among them the Claremont Review of Books, The Weekly Standard, and Law and Liberty.
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