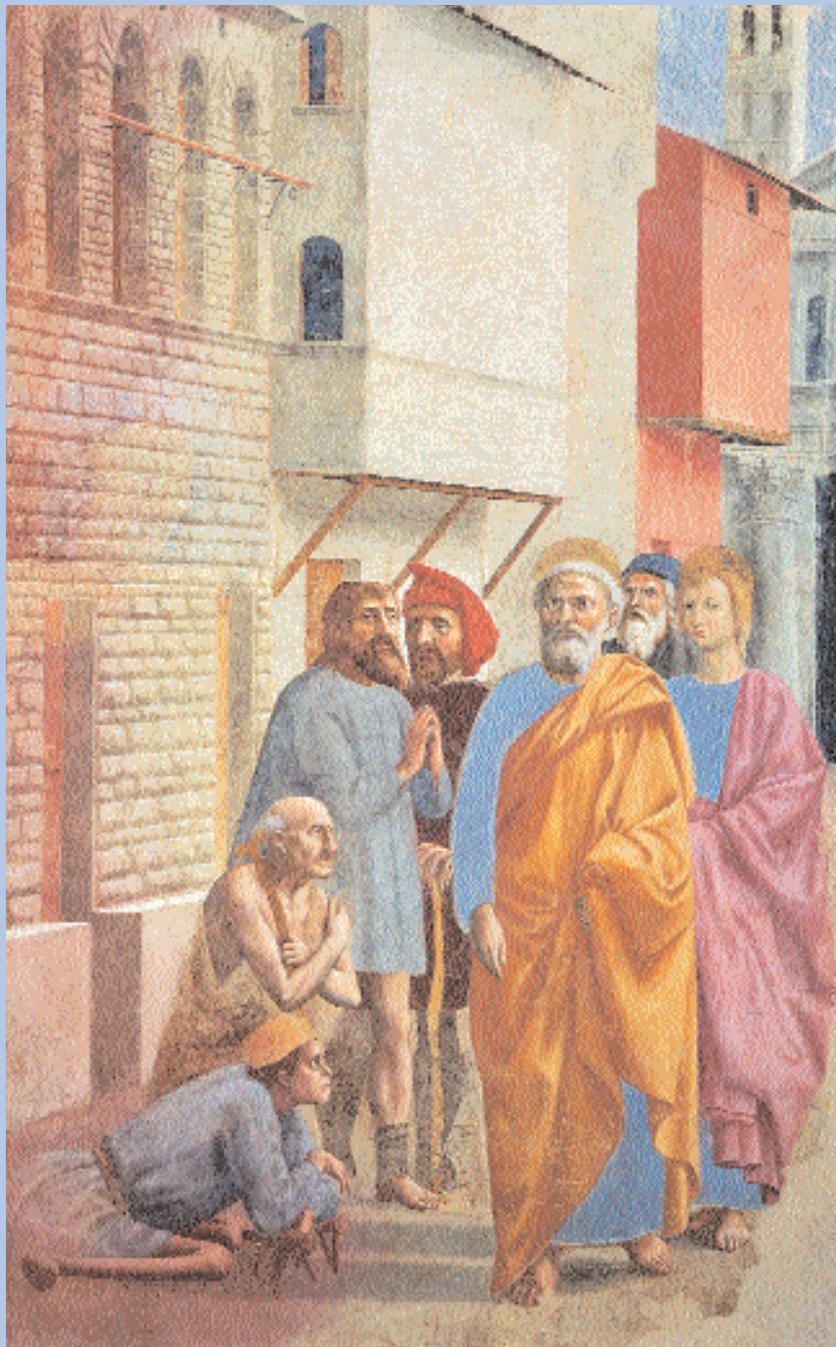


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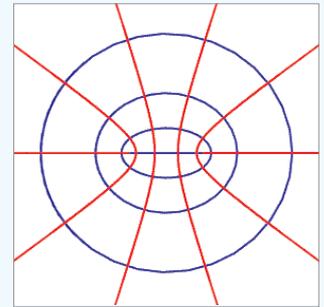
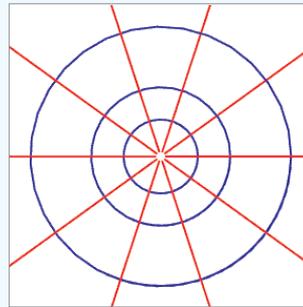
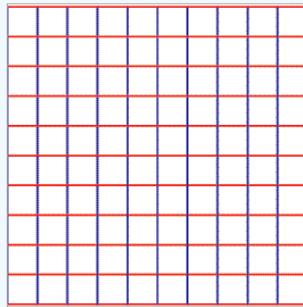
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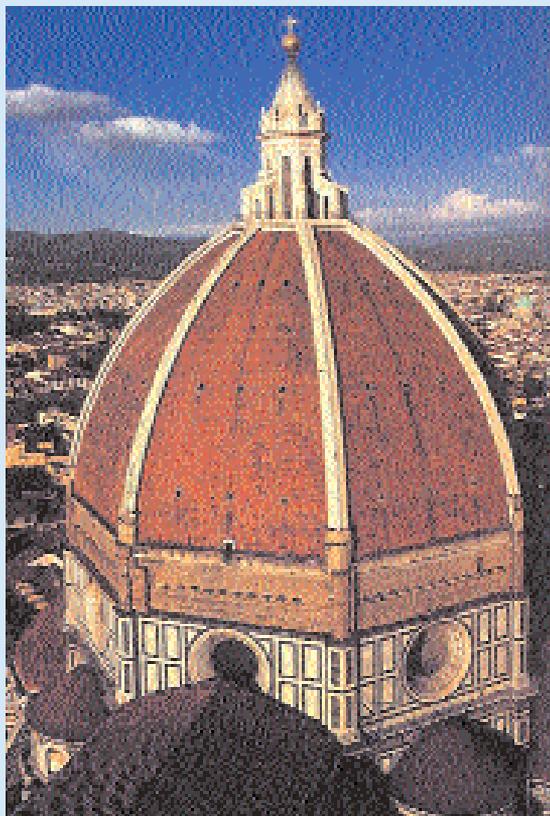
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Bernhard Riemann extended Gauss's idea of surfaces to a more general concept of manifold. As new principles are added, the geodesics of the manifold are transformed.



The Catenary, From Brunelleschi to LaRouche



Dome of the Cathedral of Santa Maria del Fiore, Florence, Italy, constructed by Filippo Brunelleschi.

A chain hanging freely forms a unique shape, which, like Brunelleschi's Dome, is self-supporting in its whole and its parts. This can be demonstrated experimentally, by hanging a chain between two freely moving pulleys. The chain will find only one stable 'orbit' between the pulleys, but once in that orbit, it will be very stable—a characteristic that Lyndon LaRouche has likened to the principle of 'frozen motion' exhibited in Greek classical sculpture.

While this characteristic was known to the ancient Greeks, as well as to Brunelleschi, the principles underlying it were not fully elaborated until G.W. Leibniz and Johann Bernoulli discovered them more than a century later. Using Leibniz's calculus, they demonstrated that the catenary was that shape which equalized the physical tension at every point.

Brunelleschi used a hanging chain to guide the development of the curvature of the Dome at each stage of construction. Thus, the overall shape of the Dome was determined, not by a curvature defined by abstract mathematics, but by a physically

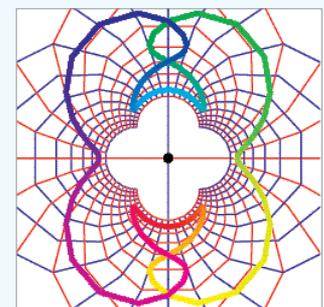
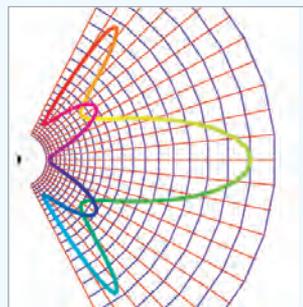
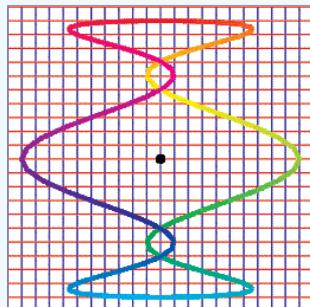
defined principle. Just as a hanging chain is self-supporting in its whole and its parts, the Dome, whose curvature was guided by it, is likewise a self-supporting surface, *in its whole and its parts*.

A word of caution is warranted to those Aristoteleans who demand to 'see' the physical shape of the catenary in the final shape of the Dome. Although Brunelleschi employed a form of the principle of least-action which Leibniz and Bernoulli later discovered was expressed by the catenary, the features of the Dome are not in the shape of a hanging chain. As LaRouche has made clear, it is, rather, the *principle of least-action expressed by the hanging chain*, as that principle was later developed in Gauss's theory of surfaces, Riemann's theory of manifolds, and LaRouche's principles of physical economy, which shaped the Dome.

The beauty of the Dome demonstrates the truth of Brunelleschi's discovery, but it would take the discoveries of Kepler, Fermat, Leibniz, Gauss, Riemann, and LaRouche to fully grasp the underlying principle.

[SEE 'The Long Life of the Catenary']

Examples of Riemannian mappings. An arbitrary loopy curve is seen with respect to a manifold of changing geodesic.



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*"It is through beauty that one proceeds to freedom."
—Friedrich Schiller*

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Fidelio is dedicated to the promotion of a new Golden Renaissance based upon the concept of *agapē* or charity, as that is reflected in the creation of artistic beauty, the scientific mastery of the laws of the physical universe, and the practice of republican statecraft for the benefit of our fellow man.

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On the Cover
Masaccio, *St. Peter Healing with His Shadow*, Brancacci Chapel, Florence (c. 1425). Ideas as *power*. (Scala/Art Resource, N.Y.)

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Lyndon LaRouche on Immortality

On Jan. 15, 2003, Marianna Wertz, the vice-president of the Schiller Institute, died after undergoing cardiac surgery at Johns Hopkins Hospital in Baltimore, Maryland. As the report of Marianna's death arrived to Lyndon and Helga LaRouche, he was giving a public address to a group of both young and old people in India. Although he had not yet learned of her death, he was, at that very moment, speaking about immortality. LaRouche asked that his remarks be conveyed, as a message from Helga and himself, to her husband Will Wertz, and to friends everywhere.

* * *

Question: Despite all of its development as an industrial power, as a great nation, how could it happen, that America has come to this point, to want to be an imperial power?

Lyndon LaRouche: It happened because the American people became totally corrupt. The point is, that people believe too much in democracy. I believe in the purpose of the government; I do not have any faith in democracy. The history of mankind is tragedy, history as tragedy, typified by the Classical Greek tragedy, or European tragedy—Shakespeare, Schiller. Every tragedy, Classical tragedy, is the result of the corruption of the people; not the result of the corruption of this or that leader,

but because people become corrupt.

This goes back to Solon of Athens' letter to the Athenians at the end of his life, on how they had become corrupt, after he had earlier saved them. It is cultural corruption. When you do not produce the leaders who can lead the people away from corruption; when you reject them, after you have produced them; you are going to pay the penalty. For example, the case of Hamlet; the case of Hamlet is typical.

For example, Schiller's treatment of Jeanne d'Arc, which happens to be historically precise; there is one dramatic change in the play. Jeanne d'Arc made possible modern European civilization. Without her action, it would not have occurred. She was a simple farm girl, who went to her stupid king. She said, Stupid king, God sent me to you, to tell you: Become a real king! She said, God wants you to become a king. So she went out, and commanded troops, won battles, and then was betrayed by the king.

She lost the fight, because she was betrayed, but she refused to submit, at the point of being burned alive.

As a result of her courage, and death by the Inquisition, she inspired France to throw the British out of France, successfully, and also inspired and contributed to the Renaissance.

On the other side, take Shakespeare's case of Hamlet. Look at the Third Act, the soliloquy of Hamlet. Why has Hamlet failed? How has he failed? What was demonstrated by the play by Shakespeare? He failed, because he said, "Shuffle off this mortal coil." He was not afraid of death, he was afraid of immortality. He was afraid of what he would face, after he died. This is true, and this becomes a practical

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Naenia

E'en the beauteous must perish! What men and the gods
doth o'erpower,
Ne'er the bronze-plated breast moves of the Stygian Zeus.
Only once did love ever soften the Lord of the Shadows,
And at the threshold did he, sternly, his gift then recall.
Nor heals Aphrodite the wound o'th' beauteous stripling,
Which in his delicate side cruelly the boar did inflict.
Nor delivers the mother immortal the hero so godlike,
When he, at Scaean gate falling, his fate did fulfill.
But she ascends from the sea with all the Daughters of Nereus,
And the wailing begins over her glorified son.
See ye! There gods are lamenting, there goddesses all are
lamenting,
That the beauteous fades, and that the perfect doth die.
E'en a woe-song to be i'th' mouth of the loved one, is glorious,
Since what is vulgar falls soundless to Orcus below.

—Friedrich Schiller

political question, of leadership. You have to have the dedication. All great leaders have the commitment to immortality. Not immortality in the sense of the flesh, but to say, I have only one life, how shall I spend that which is limited anyway?

In the simple way, a family—they sacrifice for their children and grandchildren. They say, I am doing something for humanity. I produced good children, good grandchildren. We make the society better; therefore, I achieve a certain kind of immortality.

The typical politician lacks that. He wants his satisfaction, now. He wants the success of his party faction. He wants good for his nation, but he wants to have it without having to give up his success.

That is Clinton's problem. Clinton is a perfect Hamlet. He is bright, one of the brightest to occupy the Presidency during this past century. Yet, when it came to a certain crisis, he could never stand up and say, I will do the right thing. When you don't have that, how do you expect the people, who are tied up in their concerns for their immediate family interests, their insecurities, their concern for this and that, their income problems; how do you expect them to come out of their littleness, if the leaders of society act like little people themselves? Act like little mannequins?

What you need are true heroes. Not the heroes of the sword, but the heroes of the spirit. You need a combination of courage, like that of Jeanne d'Arc, but you also need the wisdom that goes with it, the wisdom of the soul.

Now, let us come back to the United States, and our crazy culture, that we destroyed.

I saw it happen, because when I came back in April 1946, the majority of American soldiers in India, were fully in support of U.S. support for Indian independence. One year later, two years later, back in the States, of those I knew, 95 percent had gone over to

the other side. That is how it happened. The point is, what had made the Americans moral, was that FDR provided them with a

program for recovery from the Depression, and with the task of war, and gave them a sense of mission, that they had to do something good for the world. He brought them out of the Depression. When he died, I began to see this. The first thing, was with the soldiers in Canchapara. I was there on my way to Burma, and a bunch of soldiers came to me, on April 12, 1945, and they wanted to talk about what it meant for us, that the President had died. I answered first off the top of my head, but I came to the right answer. I said, I am worried, we had a great man, who led the nation, but the war is not completed. I am afraid of the effect, when a little man, replaces a great man.

A tribute to Marianna Wertz appears on page 88 of this issue.

EDITORIAL

A Sequel to 'The Historical Individual'

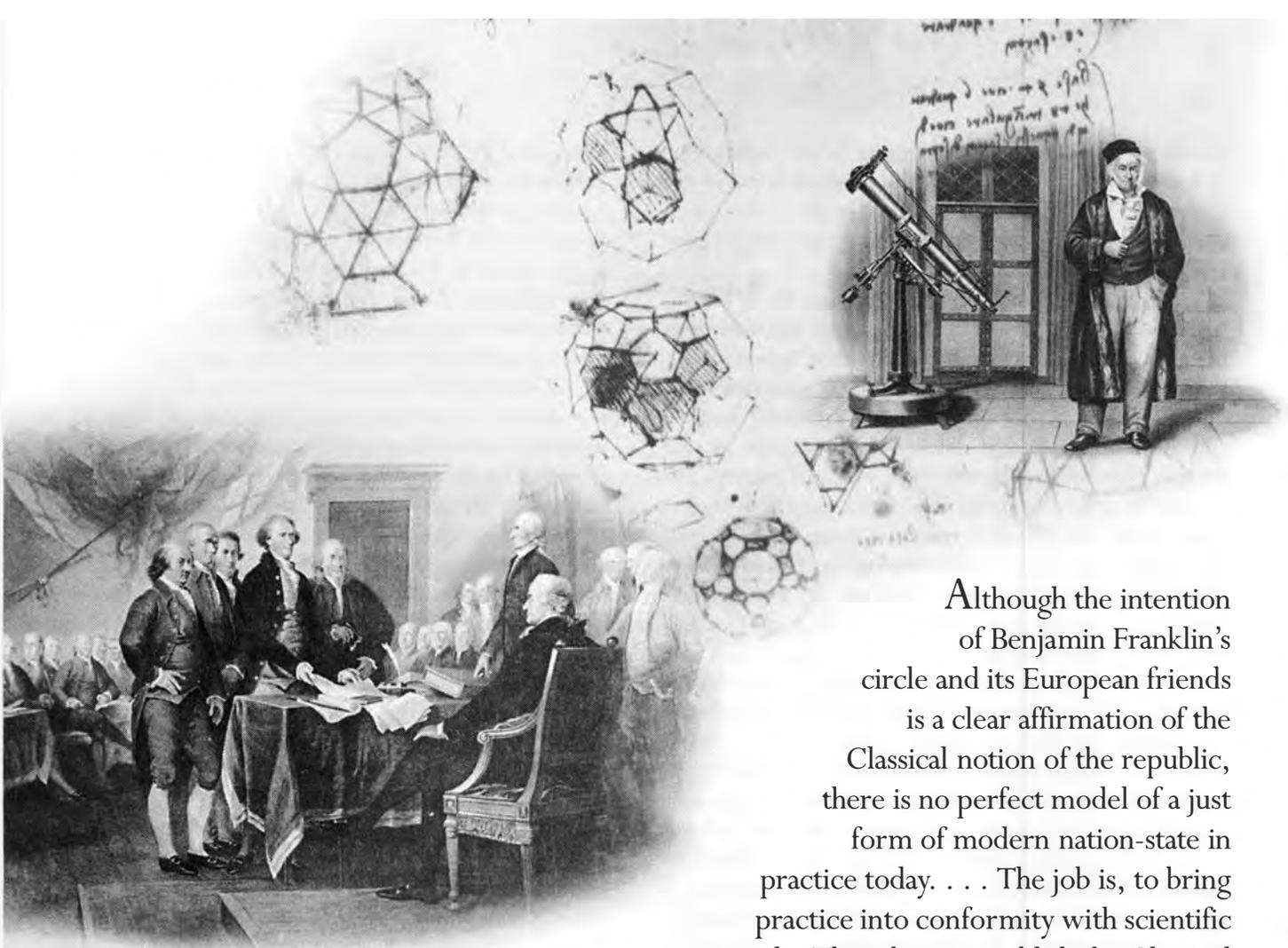
The Next Generations

by Lyndon H. LaRouche, Jr.

October 20, 2002



Credits: Leonardo, Biblioteca Ambrosiana, Milan; Declaration, Library of Congress; Gauss, courtesy AIP Niels Bohr Library.



Although the intention of Benjamin Franklin's circle and its European friends is a clear affirmation of the Classical notion of the republic, there is no perfect model of a just form of modern nation-state in practice today. . . . The job is, to bring practice into conformity with scientific principle. The job is to establish the Classical principle securely in power, at last.

The world is presently gripped by the most deadly economic crisis in the experience of any person living on this planet today. *This economic disaster is a systemic (implicitly terminal) collapse of the present economy, not a statistical-cyclical phenomenon within the bounds of an existing economic system.* This ongoing collapse of both the world's present monetary-financial system, and of the physical economy itself, is the result of a post-1964 shift, *away from* a producers' economy, within which cyclical patterns had been somewhat irregularly recurring phenomena, *into* a shift to a dead-end form of existence as an intrinsically terminal, consumer culture. This process is now in its terminal phase.

This present disintegration has been the direct result

Dome of the Cathedral of Florence, 1420-1436; Leonardo da Vinci, investigation of regular solids, Codex Atlanticus 272v-b (details); Declaration of Independence, July 4, 1776; C.F. Gauss (1777-1855).

of willful adoption of unnecessary, foolish policies of many nations, especially bad policies adopted, and imposed upon other nations, by the overreaching influence of the United States of America, over the course of now nearly four decades.

So, it happened, that the U.S. economy, and that of the Americas and western Europe, is presently grasping hysterically at the slippery rope's end of the present, doomed world monetary-financial system.

Admittedly, much of the error which has caused this global crisis was formally institutionalized, top down, by our government and its leading political parties. However, as in the decline and fall of the Roman Empire, our society's willingness to submit to such folly, reflects the

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combined foolishness of the majority of the populations of many nations, especially the recent foolishness of the U.S. electorate's popular, frequently self-destructive choices of election and appointment of members of government and its policies.

U.S. populists could blame government for allowing such disasters, and usually do; history itself will now, as in the past, blame the people for such a failed government, placing the blame chiefly on the present generations of U.S. populists. As all of the stage's greatest Classical tragedies of ancient and modern times warned us, the typical cause for the systemic doom of actual empires and nations from the past, is the lack of that quality of chosen leader who, like Solon of ancient Athens, seeks to lead the people, once again, to free themselves from the folly of previously prevalent popular opinion. So, a rampage of populism, over the period from July 14, 1789 through 1815, led France into the first modern fascist tyranny, that of Napoleon Bonaparte; so, populist fervor within the young U.S.A. led our nation to the brink of self-destruction, repeatedly, during the same period.

It is not sufficient merely to shun poor choices of leaders; it is indispensable, especially in times of crisis, to turn to intellectual leaders of a rare quality, who will lead the nation and its people to uproot the blunders adopted by popular opinion. In any time of great crisis, without such exceptional leaders, such as our own Benjamin Franklin, George Washington, Abraham Lincoln, and Franklin Roosevelt, the people will fail.

Today, this function of a new leadership is, as I shall explain here in due course, the pivot on which the survival of our republic, including our aberrant populists, now depends absolutely.

In the instance of the present crisis of Europe and the Americas, the principal cause was policy-changes introduced in the aftermath of the combined effects of such crucial developments as the 1962 missiles-crisis, the assassination of President John F. Kennedy, and the deadly folly of the U.S. war in Indo-China. The aftermath of the Kennedy assassination was the shift of the U.S.A. from the role of the world's leading producer nation, into a 1964-2002 plunge toward a hopelessly decadent form of popular culture called, variously, a "post-industrial," "consumer," or "new economy" society. The growing popular support for that change in cultural paradigm, over that interval, is the continuing cause of the popularly self-inflicted shift from a successful producer society, to that self-doomed consumer society which the U.S. has become.

If you wish this nation to survive, that popularized folly is what you must change, a change in popular opinion which you must not merely accept, but help to bring about. It must be a change in the population's presently

habituated culture, away from those leading acquired beliefs adopted during the course of the recent four decades. In these pages, I show how our nation might be saved, even at this late date. It were therefore inevitable, in the nature of the problem, that much of what I write now will astonish you, even, perhaps, anger some of you, all because it runs against those prejudices by means of which you have been complicit in our republic's attempted self-destruction; but, nonetheless, our nation's continued existence, and your own, may depend upon your accepting my warning now. *The chief cause of the suffering of most of our people today, was made possible by the repeated refusal of the overwhelming majority to accept my repeated, now fully proven warnings during each of the U.S. Presidential campaigns of the 1976-2000 interval.* To escape the present crisis, the majority of our people must choose a different quality of President than they had during recent decades; to make that improvement in their political behavior, the people must bring about a corresponding change in the way they choose their opinions, especially their choice of national leadership. They really have no sane choice, but to make that change in habits now, even two years before the 2004 election.

Therefore, the following goes to the core of the subject of the standard of moral fitness to be met by past, present, and future Presidents of the United States. It poses a series of intermeshed issues of economic science, issues defined by that field of economics in which my extraordinary professional authority is certified by such included types of crucial evidence as my published successes as a long-range forecaster, which remain unparalleled successes over a recent period of more than three decades. Fortunately, the issues I address are elementary in form; but, unfortunately for our now virtually bankrupt nation, these issues involve principles which have usually been neglected, even among most varieties of either physical scientists or economists practicing today.

In these immediate, prefatory remarks, I feature a few indispensable observations, which set the stage for the discussion of those issues which follows. These initial observations pose the question to be answered. In the sections which follow that, the set of required answers is then introduced and supplied, as a series. At the end, the definition of moral fitness of a President should be reasonably clear.

Why the Accounting Profession Has Failed Us

The central thesis of the following report is this.

For reasons I shall show, no competent economist would offer an assessment of today's policies without

looking at the effect of those policies on the condition of both that nation, and also the world, over a period of not less than approximately two generations ahead. In other words, he or she must think of the trajectory of human development, as the original discoverer of gravitation, Johannes Kepler, defined the annual orbit of the planet Earth. For that reason, the morality of each adult generation, is to be measured by its attitude toward its own adolescent or young-adult children, an attitude which must be measured, at each point in time, as the effect of that attitude on the world of that generation of young adults who will enter adulthood a half-century ahead.

That is, therefore, that practical moral standard, no other, and nothing less, by which prospective candidates for nomination to become the President of the United States must presently be judged, as fulfilling, or failing to meet that long-term, forward accountability to posterity implicit in the Preamble of our Federal Constitution. That is the lesson of history to be adopted, as we reflect on the present, cumulatively awful net outcome of the accumulated systemic errors in trends of prevalent popular opinion, during the recent thirty-seven years.

Morality is not a commodity, which might be measured in dollars-and-cents. It is a value which can be measured only as Kepler, writing in his 1609 *The New Astronomy*, defined the orbit of the planet in non-financial, physical terms. Therefore, no accountant who adheres to today's characteristically anti-scientific, *post hoc, ergo propter hoc* standards of accounting practice, is capable, *professionally*, of an intelligent assessment of the following, most crucial question of scientific practice in economics: *Whether those practices which appear to be profitable by current standards of accounting-practice, are actually beneficial, or not, to a particular enterprise, or to our republic, over the medium to long term.*¹ The proper

1. Some accountants, because they are intelligent and mature persons, make competent shows of insight into problems, despite the influence of their training as accounting professionals. A truly intelligent and experienced accountant looks at accounting systems with the psychological distance which any sane entomologist brings to a discussion of bugs. Meanwhile, on the subject of crooked accounting firms, President Bush is being deluded, if he actually believes that the problem of Enron *et al.* is "bad apples." The root of the problem is a pervasive, systemic corruption in the "accounting industry" as a whole, a corruption which was virtually acted into Federal law by members of the U.S. Congress such as "Enron Wendy's" husband, Senator Phil Gramm. It is the present corporate system as a whole which is corrupt beyond self-redemption. The relevant fault with the general practice of accounting is, that accounting standards today are intrinsically amoral, and therefore blind to the evidence of the intrinsic immorality typified by the Enron case.

question, which today's typical practice of accounting and "market analysis" evades, is: *by what universal physical principle could we determine which multi-generational orbit the present short term's events are travelling?* What experimentally demonstrable, universal physical principle, does the orbit of these measured events follow? Where will a continuation of that orbital pathway, so defined, bring our society, one, two, or more generations to come?

The pivotal cultural problem of today's civilization, in Europe and the Americas, is the fact that those currently in a controlling position, in government and private institutions today, belong, predominantly, to the so-called "Baby Boomer" generation. Most of them reached adolescence somewhere between the retirement of U.S. President Dwight Eisenhower and that early 1970's when the so-called "ecology movement" was launched on a mass scale. This 1964-1972 "cultural-paradigm shift," reflected a transformation of the economies of Harold Wilson's United Kingdom and the post-Kennedy U.S.A., from the U.S.A.'s role as the world's leading producer society, into what may be fairly described, like ancient imperial Rome, as an increasingly parasitical "consumer culture," fairly described in retrospect, today, as the imperial triumph of the wastrels.

The United States has been transformed, for the worse, under the adult phases of metagenesis of the "Baby Boomers." The decadence which began with the "Baby Boomers" parents, the majority of the generation which had capitulated to the post-war, 1946-1953 atmosphere of "witch hunt" had induced in the freshly hatched "Baby Boomer" generation, under the reign of President Truman and the notorious team of Roy M. Cohn and his puppet-Senator "Pepsi Joe" McCarthy. The effects of 1946-1953 "witch-hunt" practices produced the immorality within my own generation, a generation which, in turn, corrupted much of the "Baby Boomer" generation, who, in turn, drove society to the degree of degeneration expressed by the conditions menacing the 18-25 generation in Europe and the Americas today.

Today, so-called "middle-class Baby Boomers" rebuke their sons and daughters: "You ungrateful creatures! We saved and sacrificed to give you everything!" They gave them, in fact, the opportunity to enter a world with no future. They gave them, in fact, the decadent, doomed world of an utopianism-ridden, "post-industrial," "consumer" society, with the present, galloping decadence of our schools, universities, mass homelessness, and loss of former standards of health-care to match.

I recall, and slightly rephrase the old slogan which used to be broadcast nightly by the New York Times radio-station back when the voice began: "It is now

eleven o'clock" When I hear the memory of that radio voice, I think, "Where are the fantasies of today's 'Baby Boomer' parents wandering tonight?"

1.

The Little Matter of 'Human Rights': Society, Economy, Science, and 'Super-Genes'

To understand the problem, go directly to those symptoms which reflect the roots of today's popular moral disorientation.

The lack of a prevalent, efficient form of morality in today's popular and official opinion, is best demonstrated by the pompous way in which the phrase "human rights" is tossed about by people who have no apparent conception of a principled, moral distinction between man and monkey. Typical of the relatively extreme cases of this widespread moral disorder, are, on the one side, the modern followers of those who share Thomas Huxley's and Frederick Engels' opinion, that man is merely another ape, and, on the other, those even more degraded followers of Bertrand Russell's devotees, such as the late Norbert Wiener and John von Neumann, as at the Massachusetts Institute of Technology, and elsewhere, who propose that the future lies in constructing a robotic superhuman "artificial intelligence" from electronic spare parts, without benefit of even Huxley's or Engels' notions of biology.

If you are a scientist, before defining "human rights," you must first define a "human being" as a great physical scientist, such as Plato, Kepler, Leibniz, or Russia's Vladimir Vernadsky would. You must define "human," and, therefore, "human rights," as a matter of experi-

mentally validated discovery of a universal physical principle, as a matter of *natural law*.

Vernadsky, for example, defined the physical universe as a process of efficient interaction among three kinds of experimentally demonstrable universal physical principles: (a) a sub-universe of the type called a "phase space," in which all universally true physical ("natural") effects are based on the experimental assumption of physical chemistry, that that universal phase-space operates entirely on the basis of non-living principles; (b) a phase-space of those anti-entropic² physical effects on physical chemistry which could not be produced by the first phase-space (the "Biosphere"), but which affect the first, "abiotic" phase-space; and, (c) a phase-space of those anti-entropic physical effects which could not be produced by either of the first two phase-spaces, but which efficiently affects both (the "Noösphere").³ Among all known living processes, the experimental evidence shows, that only the human mind, or some superior, universal intelligence copied by the individual human mind, is capable of generating those physical effects associated with the *Noösphere*.⁴

What, therefore, is "human nature"; what, therefore, are "human rights"? What is the difference between life confined within the Biosphere—such as life among the higher apes—and a higher, human form of life, which is characteristic of a higher phase-space, the Noösphere? This is the first among the principled considerations upon which both morality, and a competent economic science are premised.

The animal ecologist, such as the circles of the late Julian Huxley, would propose that every species of animal within the Biosphere has a specific (or, varietal) relative potential population-density. That is, as a measure of potential rate, *per capita* and *per square kilometer*, measured relative to the total environment and changes with-

2. Although "negative entropy" was used by biologists to signify the ordering principle which distinguished living from non-living processes, the followers of radical positivist Ludwig Boltzmann, such as Bertrand Russell acolyte Norbert Wiener, attempted to explain this notion away, by using the term "negative entropy" for phenomena within the phase-space of abiotic statistical thermodynamics. To preserve the intention of sane biologists, I have introduced the termed "anti-entropy," a term which connotes anti-Euclidean mathematical-physics geometries, such as that of Bernhard Riemann.

3. Cf. Lyndon H. LaRouche, Jr., *The Economics of the Noösphere* (Washington, D.C.: EIR News Service, 2001).

4. Vernadsky was extraordinarily useful in defining the domain of the Noösphere according to a universal experimental principle of physical effects. A medieval and modern European civilization polluted by simple-minded reductionism, had equated real, or physical, with objects of simple sense-certainty. Vernadsky's scientific method, on the contrary, followed the anti-reductionist,

Classical tradition of both ancient Greece and the Fifteenth-century Renaissance science of Cardinal Nicholas of Cusa: we know the reality which exists beyond the mere shadow-world of sense-perception, by proof that certain, discovered universal physical principles consistently generate effects upon the shadow-world of mere sense-perception. Microphysical science, is an example of this.

Thus, in first approximation, he divided such physical effects among the three phase-spaces indicated. So, in the simple-minded reductionism of such Bertrand Russell devotees as Norbert Wiener and John von Neumann, the idea of life was rejected as "metaphysical." Similarly, the ability of the human mind to discover and apply experimentally validated universal physical principles to increase the human species' power to exist, is a physical effect specific to that cause. For a scientist such as Vernadsky, life is a metaphysical principle, and the human power of valid hypothesizing, is not merely metaphysical, but provides the physical-science definition of *spiritual*.

Our republic was created, chiefly, by Europeans, both as immigrants and as sponsors from across the Atlantic. These leading founders of our republic, such as scientist Benjamin Franklin, acted, chiefly, in that Christian tradition which incorporated that alternative to imperial Rome which we have inherited from the revived, Classical Greek heritage of Solon and Plato.



Raphael Sanzio, "The School of Athens" (1509).

in that environment. By that archeological standard, higher apes would never have enjoyed a global potential population of living individuals above some millions, under any reasonably estimable condition on this planet during the recent two-odd millions years of the recent ice-age cycles. However, mankind has achieved a population in the order of billions of living individuals. Higher apes are animals; human beings, except when men behave as beasts, are not.

Human beings each have the potential to generate experimentally valid discoveries of universal physical principle, as Kepler's uniquely original discovery of universal gravitation typifies a universal physical principle. No ape can do this.⁵ Not only are individual persons capable of making such original discoveries; they are capable of replicating the act of discovery made by another

individual, even reaching back thousands of years, as a student today might reenact the discoveries of physical principle by such ancient Classical figures as Pythagoras, Archytas, Plato, Eratosthenes, and Archimedes.

Through such discoveries of universal physical principle, the average person's power in, and over the universe is increased potentially. Through the transmission of such discoveries, from individuals to entire cultures, and that over successive generations, man as a species expresses a willful power which no animal commands, the power to increase willfully his species' relative potential population-density, *per capita* and *per square kilometer* of the Earth's surface.

It is the human individual's ability to do what no monkey can do—discover, or rediscover a universal physical principle—which defines human nature. This ability to change the culture of society for the better, in any part of past or future history, is the power which sets mankind apart from, and above the beasts. That power, which is a product of *the combination* of both the discovery of a universal principle by a sovereign individual mind, and the

5. The distinction between fossil evidence of ape or man depends upon correlation of the specimen as such with evidence of artifacts which are characteristic of human intellectual manufacture, such as well-crafted throwing-spears.

transmission of that act of hypothesis, to others, through replication, is the active principle of *human nature*.⁶

This is the simplest of the demonstrations of the nature of the human species, as absolutely distinct from the lower forms of life. This is Vernadsky's distinction of what is merely a *Biosphere*, from a higher form of existence, a *Noösphere*. This is the elementary definition of human nature under natural law. It is from this, and only from this, that a lawful principle of human rights can be derived. Any different notion of man and his rights, is foolish, unscientific gibberish, as by monkeys acting out their confusion over this matter, as creatures imprisoned within their species' genetic cage.

This scientific definition of human nature, and of human rights, poses the most important of all crises in mankind's differing notions of law of society and religious beliefs, in sundry times and places.

Ancient, medieval, and modern cultures, such as those of ancient Mesopotamia, Sparta, Tyre, Rome, Byzantium; medieval forms of imperial and ultramontane imperial maritime power, such as Venice; and the modern neo-Venetian, imperial maritime power of Anglo-Dutch liberalism, have been intrinsically predatory cultures, which violated that principle of human nature which I have referenced above, by degrading most of humanity to the virtual status of herded, or hunted human cattle. So, the Physiocrats Dr. François Quesnay and Turgot defined men and women as did the Adam Smith who plagiarized their writings. They defined the producers in society as axiomatically human cattle, and defined economy as the herding and culling of human cattle: the unspeakable predators, so to speak, preying liberally upon their inedible victims.

Therefore, the creation of our U.S.A. as a Federal constitutional republic, has been among the most notable historical exceptions to the predatory legacies of ancient Mesopotamia, Sparta, Rome, Venice, the Habsburg tyrannies, and Anglo-Dutch financier oligarchs' imperial liberalism.

Our republic was created, chiefly, by Europeans, both as immigrants and as sponsors from across the Atlantic. These leading founders of our republic, such as scientist Benjamin Franklin, acted, chiefly, in that Christian tradition which incorporated that alternative to imperial

Rome which we have inherited from the revived, Classical Greek heritage of Solon and Plato.

The first clear precedent for that later founding of our republic, was that Italy-centered Fifteenth-century, Classical Renaissance which produced the first attempts at true modern nation-states, Louis XI's France and Henry VII's England. Unfortunately, the imperial ultramontane forces mobilized by Venice struck back against civilization, attempting to exterminate the Renaissance's achievements, through launching the awful period of religious warfare, 1511-1648. The emerging, post-1648 domination of Europe by the combination of the predatory Habsburg and Anglo-Dutch liberal successors to the former power of the Venetian state, reduced the Eighteenth-century options for launching a true constitutional republic meeting Classical Greek standards, to the English-speaking colonies in North America.

The intent expressed by Benjamin Franklin's circles, in the 1776 U.S. Declaration of Independence and the Preamble and general outline of the 1787-1789 draft of the U.S. Federal Constitution, is clear. However, the perilous situation created by the French revolution, Napoleonic wars, and domination of Europe by the rival, anti-American forces of the Anglo-Dutch liberals and post-1815 Habsburg relics such as the lunatic "Carlists," left our so-imperilled republic divided and thus corrupted to the present day.

Therefore, although the intention of Franklin's circle and its European friends is a clear affirmation of the Classical notion of the republic, there is no perfect model of a just form of modern nation-state in practice today. The principle is clear; but, the practice is contested and usually contradictory. The job is, to bring practice into conformity with scientific principle. The job is to establish the Classical principle securely in power, at last; the horrifying situation which grips our nation, its culture, and the world today, warns us not to postpone attainment of our historic objective.

Principle must rule practice. The nature of man is, in principle, clear. The principled notion of human rights, under natural law, follows from that.

How I Was Educated

My focus in this report, is upon an audience of active-minded young adults, chiefly in the university-age range of eighteen to twenty-five years of age. This is the age-interval typical of those today, who are old enough to think emotionally as adults, but younger than that stratum of university graduates which have tended to become cognitively sterile, at about some time as early as between their securing their M.A. or Ph.D. degree, and securing their first tenured position in a university or

6. This relationship between powers and hypothesis is typified by the attack on the relevant errors of d'Alembert, Euler, and Lagrange, in Carl Gauss's 1799 report of his own original discovery of the fundamental theorem of algebra. This work of Gauss is the root of Bernhard Riemann's 1854 definition of an anti-Euclidean universal physical geometry, in the latter's celebrated habilitation dissertation. The power to discover and employ such powers, is a power of the human mind, a power which, as indicated in a note above, is *spiritual* in nature.

analogous professional status.⁷ My own youthful rejection of that popular pathway to intellectual sterility should help today's active mind of university-student age—and, also, their parents—to recognize certain issues which are crucial for their understanding of the challenge confronting their generation today.

As a child, even of pre-school years, I had begun to see myself as an “ugly duckling.” I had come to recognize that my parents and, later, teachers and classmates, most adults, including religious figures, and adolescents and children, alike, lied most of the time. It is much worse in the U.S. today. My resulting frustration was, that I had not become sufficiently matured to be positioned to induce these slippery fellows to depart those erring ways.

Sometimes the prevalent moral corruption which I witnessed then, was called “company manners”: swapping lies with the guests against whom one's parents gossiped as soon as the visitors were safely out of the door. “I had to say it!” or “You forced me to tell that lie!” “Lying for a good cause,” is typical of the immorality encountered, not only among government officials still today, but the population generally. Such observations then, were, and remain typical reflections of the way in which most people, including actually observed Federal judges, university professors, and whatnot, usually lie today. Most such lying took the form of the liar's sense of a need to come up on the side favored by either “popular opinion” in general, or some special in-group variety of generally accepted common assumptions. For example, by using a certain ritual patter of terms and phrases as if they were Masonic handshakes, one attempts to show oneself as an insider to the particular brand of cant common to a certain sort of “in-group.”

So, our universities and learned professions today, are chiefly the tyrannized victims of the power of agencies akin to some ancient Babylonian priesthood, who exercise the virtually capricious power of professional life-and-death over what is accepted as learned opinion. The fact that the

reductionist folly of Lagrange and his followers is hegemonic in official physical science today, even after Carl Gauss's 1799 publication of the discovery of the fundamental theorem of algebra, only typifies the scope and depth of the currently reigning corruption of professional conduct.

That same tendency to lie, is the root of that rampant, popular psychopathology called “other-directedness,” which is epidemic within society today.

Knowing that such behavior was a form of lying, indicated the existence, somewhere, of an alternative to such lying, an alternative which is at least an approximation of something which might be treated as pointing toward knowledge of truth. Reflecting today upon the points of my exceptional personal intellectual accomplishments in later life, I was more fortunate than most of my childhood, adolescent, and young-adult peers, in resisting the heavy social pressures to submit to what I doubted to be truth.

Fortunately, in my search for truth, there came a time, beginning at the age of twelve, when I relied, increasingly, upon my parents' and other available libraries, for an intensive study (in English translations) of leading English, French, and German philosophers of the Seventeenth and Eighteenth centuries. This included my rejection of taught classroom geometry, on the basis of rather obvious evidence that real-world geometry is defined by consideration of physical principles which point to real-life facts contrary to an abstract classroom geometry. This led me, eventually, to my early 1950's adoption of Bernhard Riemann's notion of relativistic physical geometry.

That unfolding search for truth, led me, by mid-adolescence, to adopt Gottfried Leibniz as my mentor in such matters, and to focus upon exposing the axiomatic frauds in the *Critiques* of Immanuel Kant. For me, aided by the adolescent philosophical reflections on the Classical notion called epistemology, this showed that the pathway to truthfulness was an accessible one. Whatever is notable in what I have accomplished since, is the outcome of that parting of the philosophical ways, from populism, which occurred during my adolescence.

A related challenge confronts each future leader of society from among the 18-25 age-interval today. The crossroads at which the young person's choice of direction must be made, is the point at which that person will decide to rely only on actual knowledge, rather than submitting to social pressures merely to learn (i.e., “conform”).

Perhaps, a monkey could be trained to learn to pass a multiple-choice questionnaire designed to be scored by computer; I fear that present programs of public and higher education would tend toward fostering such an anomalous outcome. Would you wish to choose a successful graduate of such an education as your physician or President? What kind of person are you? Are you some

7. Cf. Dr. Lawrence S. Kubie, *The Neurotic Distortion of The Creative Process* (Lawrence: University of Kansas, 1958) and “The Fostering of Scientific Creative Productivity,” *Daedalus*, Spring 1962. I have observed typical such cases of once-fertile minds gone sterile some time after 25 or even earlier. The extreme case of combined intellectual and moral sterility, is typified among the radically empiricist mathematical formalists, such as the followers of Bertrand Russell. I have compared the onset of this type of neurotic disorder, as I observed it first among members of my own generation, and, since the mid-1960's, among the “Baby Boomer” generation. Typical onset in both cases, occurred some time between the mid-twenties and mid-thirties. The typical difference between those two generations on this account, is the effect of the mid-1960's transition from a production-oriented culture, to a “consumer society,” and, later, the hedonistic depths of a “credit-card-with-sex culture.”

pathetic creature who has learned to be socially accepted in a society like that of George Orwell's *Animal Farm*, or Aldous Huxley's *Brave New World* of cannabis, ergotamine, and LSD? You must choose between truthful knowledge and learning, or, under present conditions of global crisis, be prepared to give in to a curious impulse to swarm over the edge of the now waiting cliff, squeaking in gregarious ecstasy on the way to doom, as the fabled lemmings would.

All that which is of singular importance among what I know today, is the outcome of a youthful process of adopting a certain form of the Socratic dialectic as a standard of truthful knowledge. Although my youthful contempt for Francis Bacon, Thomas Hobbes, John Locke, and David Hume was an important, if negative part of this process, it was adopting the standpoint of a relative handful of the most widely circulated of the works of Gottfried Leibniz, which led me to focus my principal attack on the central thesis of Immanuel Kant's series of *Critiques*. The focus on Plato came later. It was from Leibniz that I first learned Plato's method, second-hand.

All of my intellectual and related achievements, have emerged as, principally, an outgrowth of that adolescent experience with epistemology. This experience equipped me with the means for insight into the popular varieties of mental disorders in my society. It equips me to present young people with the means for understanding the mass psychological disorder which dominates popular opinion-making today.

I begin with a few crucial observations, on background, which are needed to make clear the challenge which confronts our present young generation of future leaders today.

My own original discoveries in the branch of science known as physical economy, were all generated by my attention to the interdependence of effect between two principles. On the first account, I adopted my own reconstruction of the principle of the Socratic dialectic from my wrestling against Kant. I distinguished between conceptions, such as experimentally verifiable universal physical principles, generated in that Socratic way, and those contrary types of notions which are learned in the way a lower form of life might learn. This is my strict definition of *cognition*, as distinct from mere learning. Then came the second count, as follows.

These points of distinction led to a new, deep problem: the evidence that *the individual's cognitive mental processes are of a specifically sovereign quality*. This topic was: How are discoveries of universal physical principles, which can not be described as objects of sense-perception, transmitted from the interior of the mind of an original, individual discoverer, into the interior of the mind of another person? That is the central issue of epistemological

method throughout Plato's work. Plato's Allegory of the Cave is typical. This problem is the foundation of all competent work in science still today. How does the development, or lack of development, of the mind of the children, affect the potential adult performance of the grandchildren's generation? It was from my focus on this second aspect of scientific discovery that all of my principled achievements in economic science were generated.

Gauss: Educating Young Americans Today

The first objective in education, is to guide the self-development of the mind of the student to the vantage-point that he or she recognizes truthful knowledge, such as the reenactment of an experimentally validated universal physical principle, as a uniquely human state of mind. For that reason, during the assembling of the present youth movement, I introduced the proposal, that the crucial benchmark of reference for secondary and undergraduate higher education, should be a mastery of the broader implications of Carl Gauss's 1799 report of his discovery of the fundamental theorem of algebra. For crucial historical reasons, as I have explained the significance of this earlier, it must be that 1799 report, in which Gauss attacks the common epistemological follies of d'Alembert, Euler, and Lagrange, which is adopted as the point of reference for launching a well-organized, coherent approach to both the history of physical science and a science of history.

On this account, I must summarize again here, a part of the argument employed in "The Historical Individual."⁸ This time, elements of that argument serve a complementary set of conclusions, respecting the more direct, functional relationship between multi-generational economic analysis and political leadership: the subsuming topic identified in the prefatory observations here. To the degree this includes restatement of arguments featured in the first article of a series on the topic of leadership, that restatement is indispensable for the reader who does not have the preceding article at hand, and perhaps the repetition in a slightly different context may be helpful to those who are still wrestling with the conceptions presented in the preceding piece.

So, at this point, I must state, summarily, a point I have made in many locations. It is a point which must not be evaded; all competent notions of physical science, Classical art-forms, and statecraft depend on this argument. The preliminary form of strict proof of the distinctive characteristics of human nature, lies in a close examination of the

8. Lyndon H. LaRouche, Jr., "The Historical Individual," *Executive Intelligence Review*, Nov. 1, 2002 (Vol. 29, No. 42).

way in which experimentally valid discoveries of universal physical principles are generated and replicated. This argument must always be featured in any contemporary presentation of the nature of scientific knowledge.

To restate the argument supplied in “The Historical Individual”: As Plato illustrates the point by his famous Allegory of the Cave, and as the Apostle Paul wrote in 1 Corinthians 13, what we perceive with our sense-apparatus, are only the shadows of the reality which stimulates those sense-experiences. The sense organs are part of our living bodies, and are incapable of reporting more than the reaction of those organs to the impact of the real world. Sense-perceptions are merely the shadows cast by an unsensed, but efficient reality. On that account, any competent teaching of matters of science makes a fundamental separation between what we adduce, by learning, from sense-certainty as such, and actual knowledge of the reality of the universe beyond the shadow-world of the senses.

Science depends absolutely, therefore, upon a principle known as *hypothesis*, as this is typified by Kepler’s uniquely original discovery of the principle of universal gravitation. I develop this crucial argument as briefly as possible.

The decadent trend in matters of science which had been promoted earlier by the Roman imperial culture’s adoption of Aristotle, is typified in modern teaching, by the common error of Claudius Ptolemy, Copernicus, and Tycho Brahe. The Sixteenth-century revival of various forms of anti-Classical philosophical reductionism, including Aristoteleanism and empiricism, was a correlated feature of the Venice-orchestrated religious warfare of the 1511-1648 interval. This occurred as a pro-feudalist, reactionary attack on the previous century’s great Classical Renaissance, a renaissance based on a Christian reading of pre-Roman Classical Greek science. This Renaissance was typified by the progress of the modern experimental science which was set into motion by the work of Cardinal Nicolaus of Cusa and his follower Leonardo da Vinci. The typically Aristotelean error common to the Roman Ptolemy and the modern Copernicus

and Brahe, was the Romantic reductionist’s radical presumption that the idea of physical lawfulness in the universe must be limited to a form of uniform statistical regularity in sense-perceptual observations as such.

For that reason, the beginning of a competent approach to a comprehensive development of modern mathematical physics, was set into motion by Kepler’s overturning that Aristotelean fallacy, by his discovery of universal gravitation. The fact that the measured orbit of Mars is neither circular—but elliptical—nor of uniform motion, presented Kepler with a Classical, Platonic type of dialectical paradox, akin to the Classical Greek paradox of doubling the cube by construction. This proved the existence of *something outside the range of sense-certainty*, acting efficiently as an efficient agent on the universe. Kepler argued that this paradox showed the existence of an efficient form of (God’s) *intention*, acting upon the universe in such a way as to get around the limitations of mere sense-perception. This approach enables us to reveal the existence of that intention to the human mind: universal gravitation as defined by Kepler.

This discovery posed a Classical form of Platonic *hypothesis*. By suitable experimental tests, Kepler’s hypothesis was proven to be a universal physical principle, susceptible of measurement. The same point was made, subsequently, by Fermat’s insight into the fact that the refraction of light is ordered by a principle of “quickest time,” rather than “shortest distance.” The work on this by Christiaan Huyghens, Leibniz, and others, led to Leibniz’s discovery of the catenary-related principle of universal physical least-action, which the Eighteenth-century Venetian Party’s Euler rejected, incompetently, in an hysterical fit of reductionism. Gauss’s 1799 report of his discovery of the meaning of the complex domain, refuting Euler’s error in his presentation of the fundamental theorem of algebra, opened the highway leading into Riemann’s 1854 habilitation dissertation.⁹

Although Kepler’s discovery of gravitation was a unique event in modern European civilization up to that

9. During the late Fifteenth century, into the Sixteenth, Venice’s original impulse had been to crush the work of the Renaissance with the bludgeons of obscurantism and religious warfare. Later, an added weapon against reason, crafted by a faction led by Galileo’s master Paolo Sarpi, introduced what became known as empiricism. From about the time of tyrant William of Orange’s coup d’état in England, empiricism in the guise of the Anglo-Dutch liberalism of John Locke, Isaac Newton, Bernard Mandeville, David Hume, *et al.*, served as the stock-in-trade of that Europe-wide liberal faction known variously as “the Venetian Party” or “The Enlightenment.” The “Venetian Party’s” influence in philosophy was spread throughout Eighteenth-century Europe by a network of salons, coordinated, until the middle of that century, by a Paris-based Venetian, Abbot Antonio Conti. The mathematicians d’Alembert, Euler, and Lagrange were among the numerous

notable recruits to that network of salons which included the infamous Voltaire. Out of Napoleon Bonaparte’s taking political control over France’s Ecole Polytechnique, and a British-directed continuation of that policy, Lagrange’s followers Laplace, Cauchy, *et al.*, imposed the “mechanics” dogma of the “Enlightenment” on most institutions of science throughout Europe, excepting the Franco-German circles of such Alexander von Humboldt associates as Gauss, Dirichlet, and Riemann. It was this early-Nineteenth-century witch-hunt atmosphere, to which Gauss referred in 1830’s and mid-1840’s references to his self-suppression of his 1790’s discoveries in the anti-Euclidean field defined by his teacher Abraham Kästner. It was not until Riemann’s 1854 habilitation dissertation that the implications of Gauss’s own contributions to defining an anti-Euclidean (rather than non-Euclidean) geometry were made clear.

time, the method Kepler used was not original to modern Europe; it was the same method of Plato shared with Archytas and kindred minds of Classical Greek science through the time of Eratosthenes and Archimedes. The Fifteenth-century Renaissance had retrieved that Classical method from the ruinous influence of feudalism's Roman imperial tradition. That Renaissance, typified by the work of such included notables as Brunelleschi, Cusa, Toscanelli, Pacioli, Leonardo da Vinci, and Raphael Sanzio, had relaunched the work of Classical science on the new social basis provided by the emerging modern nation-state.¹⁰

These ancient and modern cases, combined, illustrate the point, that *science is hypothesis*. The object is to know "what is out there," behind the mere shadows of sense-perception. Thus, Gauss's 1799 attacks on the anti-scientific blunders of d'Alembert, Euler, and Lagrange, including Lagrange's attacks upon Gauss's definition of the complex domain, which those three had each denied to exist, by denying the efficient reality of what they labelled as "imaginary numbers."¹¹ Most simply said: The complex domain reflects that actual physical universe, which generates what is imperfectly reflected as the shadow-world of sense-certainty.

2.

Arithmetic, Geometry, And Physics

For the admittedly rare competent economist today, there are two general standards of measure for determining the relative performance of national economies.

10. The difference was the introduction of the Platonic-Christian notion of *agapē* (General Welfare, common good, as in the Preamble of the U.S. nationalist Constitution draft of 1787-1789) as a universal natural-law principle superimposed upon governments. This ended the toleration of imperial and related forms of government which degraded large sections of humanity to that status of wild or herded and culled forms of human cattle, which Adam Smith adopted from the Physiocratic mumbo-jumbo of François Quesnay and Turgot.
11. For the student's reference: This problem had been implicitly solved by Leibniz's recognition of the significance of the catenary as expressing a universal principle of physical least-action, thus curing the blunder of seeking to explain "quickest path" in terms of the cycloid. The catenary function, so viewed, which defined natural logarithms prior to Euler, is situated as the characteristic feature of the complex domain.
12. A notable comparable case, is that of the increased contribution of the Jewish population to the economic and other progress of Germany, over the period from Moses Mendelssohn's departure from Dessau, until the British success of Jan. 30, 1933, in bringing Adolf Hitler to power. This benefit was chiefly a by-product of the Classical renaissance in Europe, led by Lessing's mentor, and one-time

One is accessible without resort to what would be widely regarded as sophisticated scientific techniques. A more reliable standard, required for long-range policy-shaping, compels us to focus on certain underlying implications of the successive work of, most notably, Leibniz, Gauss, and Riemann.

I wrote in my prefatory remarks, above, that the value expressed by a competent form of economic policies of practice for today, can be judged only as the increase in the *per-capita* physical productivity of a subsequent two generations of the population considered as an indivisible whole. In some respects, the justification for that argument is clear even from a study of the patterns of improvement accomplished by successive generations of U.S. immigrants, especially those who arrived as preponderantly illiterate or semi-literate rural or analogous poor. When history takes the proper turn, the cultural development accomplished by the successive work of the grandparents and parents, blossoms in the achievements of the grandchildren's generation.¹² The contrary is also true, as witnessed by the "no future" prospects which today's university-student-aged generation has inherited, with fortunate, but rare exceptions, from the prevalent decadence of the preceding two generations.

While such observations on multi-generational long-wave effects are well-founded, and relatively obvious in themselves, those observations are not sufficient to show the exact way in which such connections are to be adduced correctly from study of the physical-economic process as such. The problem so posed, is not merely a matter of measurement as such. Before pulling out a tape-measure and scales, we must first discover what it

Benjamin Franklin host, Abraham Kästner, based on Kästner's explicit defense of the work of Gottfried Leibniz and Johann Sebastian Bach, and the Kästner-Lessing rescue of Shakespeare's work. As John Keats and Percy Shelley could have explained it, without the influence of Kästner, Lessing, and Moses Mendelssohn, the success of the American Revolution led by Kästner's one-time Göttingen University guest Benjamin Franklin, would not have been possible. The Germany-centered revival of Classical science and art radiated throughout Europe, until those catastrophic, pro-populist effects of the Paris events of July 14, 1789, on both Europe and the young U.S.A., which led to the 1803-1806 unleashing of the new wave of wild-eyed Romanticism typified by G.W.F. Hegel's almost sexual enthusiasm for the Napoleon Bonaparte of Jena-Auerstadt, and Hegel's later systemization, as Prussia's official state philosopher, of the doctrine premised upon the model of Emperor Napoleon's fascist state. Few realize, when hearing modern faithful expressions of Classical string-instrument performances, that they are enjoying the legacy of a conception of performance developed to a large degree by those Jewish circles closely allied with Mendelssohn, Haydn, Mozart, Beethoven, Schubert, *et al.* Without the German Jew, one can not speak honestly of the achievements of German Nineteenth-century scientific progress and contributions to the planet as a whole.

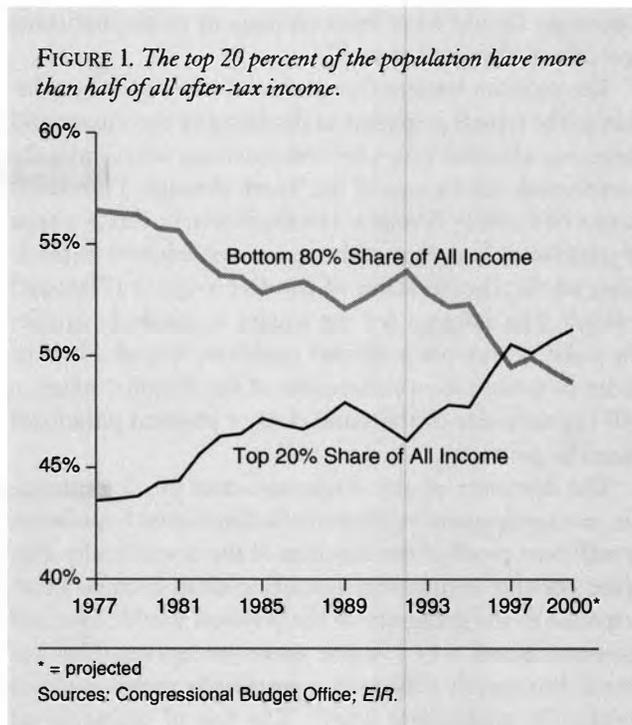
is—what universal physical principle—the which must be measured. Such are the challenges addressed by my currently proposed program of emergency infrastructure-rebuilding reforms now desperately needed by our disintegrating national U.S. economy.¹³

In one aspect, the measurable causes for the collapse of the potential relative population-density of Europe and the Americas, over the recent thirty-six years, especially the 1971-2002 interval, can be identified rather simply. The destruction of the physical standard of living of the lower 80 percent of the family-income bracket during the 1977-2002 interval, as accompanied by the savage cannibalization of basic economic infrastructure, including post-1973 looting out of health-care systems, is obvious [SEE Figure 1]. The present standard of literacy, measured according to an often multiple-choice-questionnaire-scored sliding-scale for a competitive standard of increasing popular illiteracy, is a relevant example of the galloping decadence afflicting the minds as the bodies of our population in general. The spread of wildly irrationalist cults, such as the frankly pro-Satanic sex-and-money-god cult of Sun Myung Moon, typifies the effect of the “information society” cult, in promoting the spread of mental and moral disease rotting out the souls and minds of increasing rations of our population.¹⁴

Those rule-of-thumb standards for historical estimates of human progress, point toward those phenomena of progress which may be represented as effects which can be identified within the scope of the facts attributed to the senses. However, when we attempt to go beyond such admittedly indispensable generalities, when we take up the matter of actual economic-policy-planning, competence demands that we focus upon those economic issues which are situated functionally (i.e., *systemically*) within the scope of that seemingly invisible, but efficient complex domain as defined successively by Archytas, Plato, Kepler, Leibniz, Gauss, and Riemann. So, we proceed now.

13. See *EIR Special Report: LaRouche's Emergency Infrastructure Program for the United States* (Washington, D.C.: EIR News Services, Inc., November 2002).

14. Within the U.S. Civil Rights movement, the decay of the movement can be correlated with the popularization of the frankly “anti-intellectual” cult of “information theory.” One does not need to think conceptually any more. It is sufficient to “receive information,” and let “street-wise gut-instinct” do the rest. Increased susceptibility to the influence of the sex-and-money Moon cult and its allies, correlates with increased hostility toward the memories of that noble person of African descent typified by Frederick Douglass and the sublime Rev. Martin Luther King. No one is less free than the man who puts such dumbed-down populist shackles of the mind upon his own arms and legs.



The foundation of the argument here, is that: Since efficient universal principles exist only as powers outside the scope of sense-perception, the mathematical form of representation of their efficient existence lies only within what Gauss defined, in his 1799 report of the fundamental principle of algebra, as that complex domain whose characteristic feature is what Leibniz showed, in collaboration with Jean Bernouilli, to be the expression of *the universal physical principle of least action*, in the generalization of the catenary function. The relevant conflict within contemporary mathematical physics, still today, is, historically, the following.

Lagrange’s fraudulent rebuttal of Gauss’s referenced 1799 paper, made the claim that Gauss had “cheated” in his criticism of Euler and Lagrange, by introducing geometry into a discussion of arithmetic. Under less decadent and repressive general political circumstances than the reductionist Romanticism which dominated most areas of Nineteenth-century culture, the implicit retort by the Gauss of his *Disquisitiones Arithmeticae* would have been the devastating evidence, from number theory itself, that Lagrange’s rebuttal had cheated, by pretending that the issue was anything other than those false, “ivory tower” assumptions respecting geometry, which underlay the arithmetic of d’Alembert, Euler, and Lagrange. Since the relevant Classical Greek history of the doubling of the square and cube was known to leading European mathematicians at that time, the element of fraud in the argument by Bonaparte’s protégé

Lagrange should have been obvious to mathematicians and others, then and since.¹⁵

The relevant ancient Greeks had shown, that the solution to the typical problems of doubling of the square and cube—as also the line—by construction, is systemically paradoxical. As the case of the Tenth through Thirteenth Books of Euclid's *Elements* attests, similarly, this is a type of paradox akin to that of the more sophisticated implications of the construction of the five regular (Platonic) solids.¹⁶ The solution for the square is relatively simple; the cube represents a related problem, but of a higher order of power; the construction of the Platonic solids, a still higher order of the same class of physical paradoxes posed by geometry.

The discovery of any single universal physical principle, as experimental validation of a discovered hypothesis, is sufficient proof of the falseness of the scientifically illiterate, popular assumption that a Euclidean geometry corresponds to the geometry of the physical world. The real universe is one which mere sense-perception does not reveal, but merely reflects in a potentially useful, but also implicitly misleading way.¹⁷ The use of pedagogical devices, such as referring to sense-perception as merely a world of shadows, or reflections seen in a darkened mirror, are each appropriate ways of pointing to this paradox. As Gauss's definition of the complex domain

implies, sense-perception, when combined with the ontological paradoxes which that domain expresses, such as that of doubling the cube, is a projection of the experienced reality, a projection which is often interpreted in a way systemically false to reality. Such false assumptions persist, until knowledge of the complex domain replaces the Aristotelean or empiricist delusions polluting the Euclidean. Riemann's 1854 habilitation dissertation is the generalization, as an anti-Euclidean physical geometry, of the argument on behalf of the complex domain, made by Gauss in 1799.

To restate that crucial point: This fallacy of Euclidean geometry led Gauss's Professor Abraham Kästner to define the root-concept of an *anti-Euclidean*, as distinct from merely "non-Euclidean" geometry such as those of Lobachevsky and Janos Bolyai. Kästner's argument is that we must go to a point prior to Euclid's definitions, and start over from Greek science prior to the writing of Euclid's *Elements*. This, Kästner student Gauss was already on the road to doing, as early as 1792, as reflected in his *Disquisitiones* and 1799 announcement of the fundamental theorem of algebra. Riemannian anti-Euclidean physical geometry, as expressed with audacious clarity by the 1854 habilitation dissertation, is the fulfillment of both Kästner's intention and that of Gauss's 1799 attack on the "ivory tower" empiricism of Euler and Lagrange.

15. The rise of Romanticism, and the accompanying, post-1789 disorientation among U.S. patriots, can not be understood except as an outcome of King Louis XVI's foolish rejection, out of hand, of the constitutional monarchy crafted under Bailly's and Lafayette's leadership. This rejection led to the British Foreign Office's deployment of its assets the Duke of Orleans, Jacques Necker, and Necker's daughter, the notorious Madame de Staël, to orchestrate the bloody farce of the siege of the Bastille, and subsequent imprisonment and decapitation of the foolish pair of Louis XVI and his silly wife, Emperor Joseph II's sister Marie-Antoinette of 1787 "Queen's Necklace" notoriety. Orleans and Necker were rapidly superseded by London-trained and directed agents of the British Foreign Office such as Danton and Marat, leading into the subsequent Jacobin Terror. These developments unleashed waves of populist lunacy among former admirers of the U.S. struggle for independence on both sides of the Atlantic. From July 14, 1789 on, the successive tyrannies of British assets such as Orleans, Necker, Danton, Marat, and of the cabals of Barras and Napoleon Bonaparte, sent shock waves of political and cultural demoralization into motion throughout Europe and the U.S.A. The British, for example, used the always treasonous Essex Junto Federalists to spin the administration of President John Adams into a tizzy, with a fraudulent British Foreign Office-orchestrated publication, Sir John Robison's hoax, *The Roots of the Conspiracy*. Had Adams not resisted that hoax's influence even on some members of his own family, the intent of the British, to recapture the U.S.A. as a British colony, would have succeeded. Only the subsequent emergence of the American Whig current around Mathew Carey and Henry Clay, saved the United States from the ruin of both the Federalists and confused

Jefferson's self-doomed Republican Party. This was the Whig legacy continued and developed, around the theme of U.S. Manifest Destiny, by John Quincy Adams, Abraham Lincoln, and James Blaine, and followed by President Franklin Roosevelt. In this setting, the emergence of the first modern fascist state, France under the tyrant Napoleon Bonaparte, set waves of anti-Classical pro-Bonapartist Romanticism loose throughout Europe, especially following developments of 1803-1806. The same decadence was reflected in the persistence of the fascist potential inhering in populism, within the U.S. itself, to the present day. The political success of Lagrange and his followers, over Gauss, can be understood only in the historical context of that conflict between the Classical current and the opposing legacy of the Caesarism on which Napoleon's fascist tyranny was intentionally modelled.

16. As noted below, this brings into focus the proof of the same *hylezoic* principle central to Vernadsky's definition of the Biosphere. See Johannes Kepler's 1611 *De Nive Sexangula* [(*On the Six-Cornered Snowflake*) trans. by Colin Hardie, Oxford University Press (reproduced by permission, by 21st Century Associates, 1991)]. This argument by Kepler is a continuation of that of Cusa followers Pacioli and Leonardo, and of Plato before them.

17. The relevant empiricist assumption, as of Euler and Lagrange in this instance, is not a matter of "honest academic differences of opinion"; it is an elementary issue of principle, which lies at the ultimate root of the distinction between science and charlatany. Physical science, as distinct from sometimes extremely clever childish games at the blackboard, lies within the domain whose very existence Euler, Lagrange, Immanuel Kant, and their followers have passionately denied.

The Fundamental Theorem of Algebra: How Gauss Restored the Primacy of Physical Geometry

Gauss's 1799 doctoral dissertation on the fundamental theorem of algebra has its roots in the Classical Greek investigations of the paradoxes arising from doubling the line, square, and cube [Figure I]. As discussed by Plato in the *Meno*, *Theatetus*, and *Timaeus* dialogues, line, square, and cube are visible objects, but are generated by an unseen principle, which he called "power," as evidenced in the incommensurability of the magnitudes which double them.

Through the Arab and later Italian Renaissances, these investigations were continued within the domain of what the Arabs named "algebra," which was a more general investigation of the different powers associated with lines, squares, and cubes. For example, the relationship of combining the areas of squares and rectangles could be expressed by an algebraic equation [Figure II].

In the Eighteenth century, the mathematicians Euler, Lagrange, and D'Alembert, among others, investigated algebraic expressions as a formal set of rules and operations divorced from their original physical basis, giving rise to a paradox in the form of the question, "how many solutions (roots) does an algebraic equation have?" For example, the algebraic equation $x^2=4$ expresses the problem of determining the side of square whose area is 4. In this case, there are two solutions, 2 and -2 , signifying the two diagonals of the square of area 2, which are equal in magnitude but opposite

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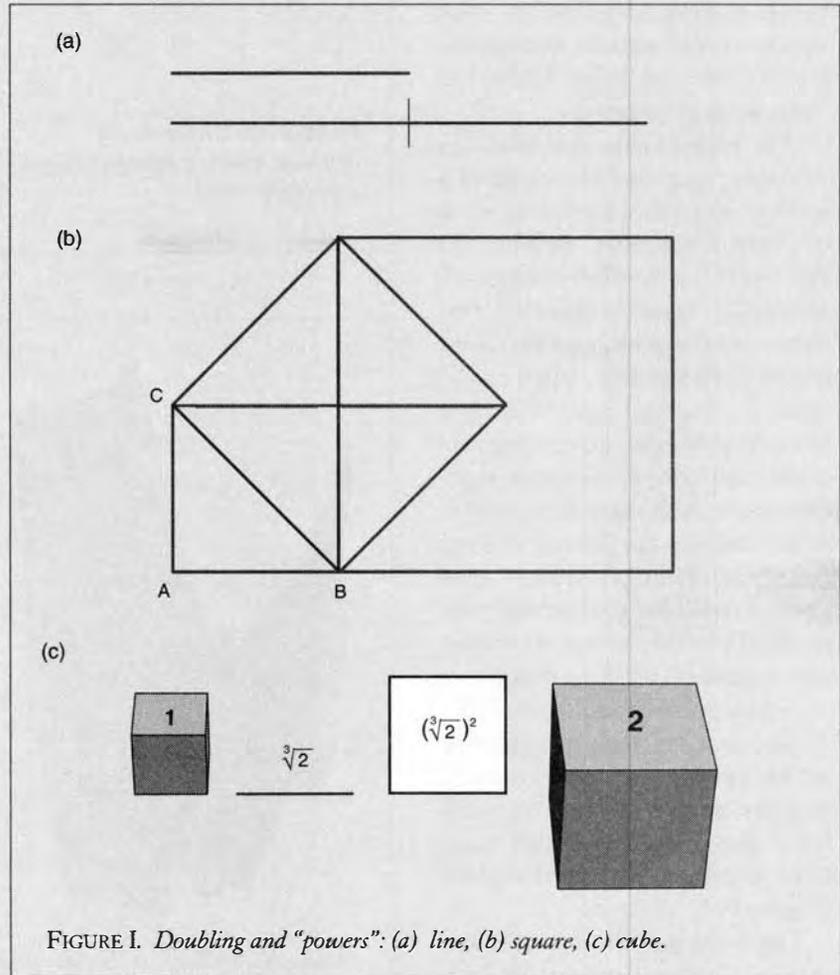
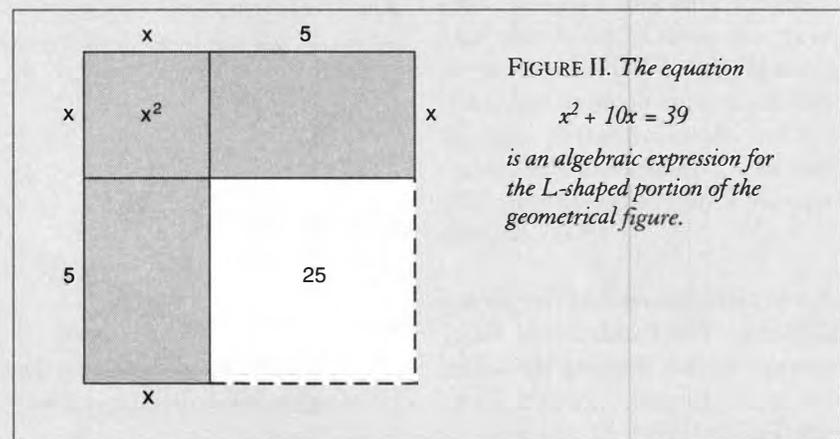


FIGURE I. Doubling and "powers": (a) line, (b) square, (c) cube.



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 in direction. However, the equation $x^2 = -4$ had no solutions, either physical or formal.

Euler, Lagrange, and D'Alembert claimed to "solve" this problem by employing magnitudes—the square roots of negative numbers—which they nonetheless libelled as "impossible or imaginary."

The young Gauss ridiculed this sophistry, and used his attack as a basis to establish the modern form of physical geometry. Building on the work of Leibniz and the Bernoullis, Gauss recognized that the so-called algebraic powers associated with the line, square, and cube, were special cases of a more general principle governing the generation of a succession of higher powers. Although these powers existed outside the domain of sense perception, their principle of generation could be represented geometrically as the actions of rotation and extension; as, for example, in an equiangular spiral [Figure III].

Gauss called such magnitudes, which include the square roots of negative numbers, "complex numbers," and insisted that such numbers be given "full civil rights" [Figure IV].

Gauss devised a means to represent all algebraic powers by such complex numbers, and any algebraic equation by geometric surfaces [Figure V]. The number of solutions to an algebraic equation, Gauss, demonstrated, can be known by the geometrical characteristics of the surfaces [Figure VI].

—Bruce Director

For a full presentation, see Bruce Director, "The Fundamental Theorem of Algebra: Bringing the Invisible to the Surface," *Fidelio*, Summer/Fall 2002 (Vol. XI, No. 3-4).

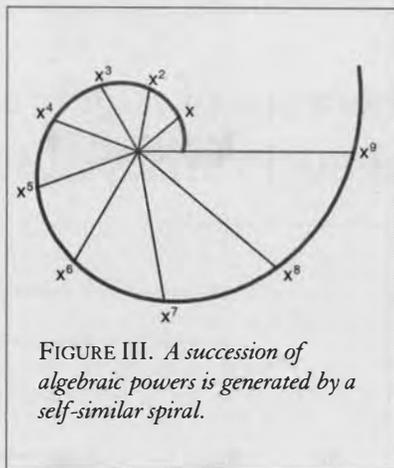


FIGURE III. A succession of algebraic powers is generated by a self-similar spiral.

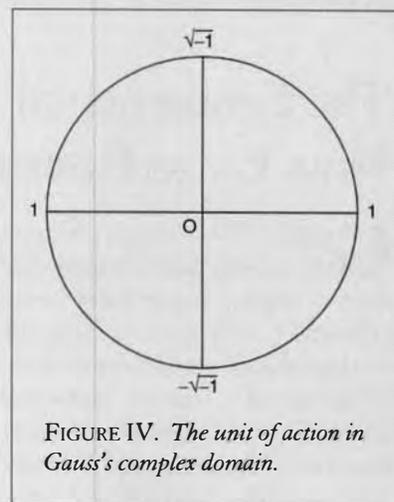


FIGURE IV. The unit of action in Gauss's complex domain.

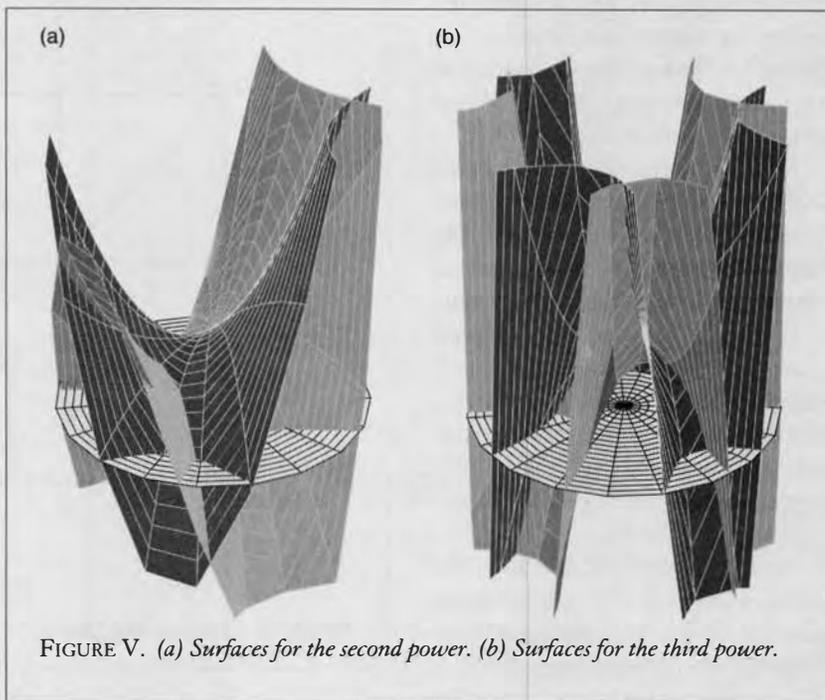


FIGURE V. (a) Surfaces for the second power. (b) Surfaces for the third power.

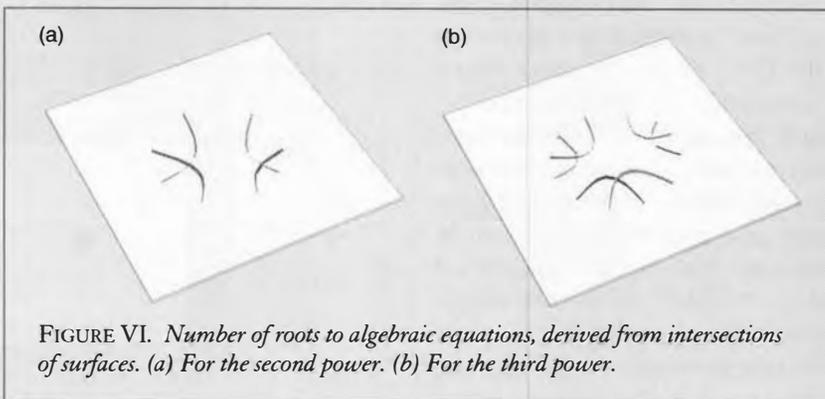


FIGURE VI. Number of roots to algebraic equations, derived from intersections of surfaces. (a) For the second power. (b) For the third power.

Those discovered universal physical principles, typified by Gauss's locating the constructive doubling of the cube within the complex domain, each express a demonstration of universally efficient *physical*, rather than formal-mathematical action. The projected effect of that demonstration can be recognized, paradoxically, by means of sense-perception, but the continuing principle of action which causes that result, can not. Thus, "ivory tower" geometries, such as Euclidean, Cartesian, or counting-number-arithmetic, are false when their images are mistaken for the reality of the domain in which the relevant efficient action, such as gravitation, occurs. Hence, the absurdity of the Galileo-Newton attempts to plagiarize Kepler's discovery of gravitation, and the absurdity of Lagrange's effort to systematize physics as a system of mechanical action located within the Euclidean-Cartesian domain of empiricists such as Abbot Antonio Conti.

Thus, as my relevant associates have emphasized, the crux of the moral crisis of most taught physical science, is the conflict between the *dynamic* universe of Plato, *et al.*, and the pathological, Aristotelean image of *energy*. This pivotal moral crisis of the reductionists, is key to comprehension of Gauss's conclusive exposure of the follies of d'Alembert, Euler, and Lagrange respecting the complex domain. The Platonic conception echoed by Gauss and, later, Riemann, is the only competent basis for an attempted mathematical form of a physical science of economics.

The point is best made, as I have insisted repeatedly, by looking at Gauss's 1799 paper retrospectively from the vantage-point of Riemann's habilitation dissertation. My critical reassessment of Vernadsky's treatment of the subject of the Noosphere, requires situating the discussion of multi-generational economic processes ("trajectories") within a mental framework cohering with Riemann's Gaussian conception of an anti-Euclidean physical geometry. To accomplish that, we must eradicate the presently conventional classroom and related use of the Aristotelean term "energy," and substitute the correct notion, that of "power."

The Conception of Power

We must define "power" from the standpoint of three historical benchmarks in the history of physical science. *First*, the Platonic Classical Greek notion of *power*, in opposition to the pathological concept, *energy*, as employed by Aristotle and the modern empiricists, such as Clausius, Grassmann, Kelvin, Helmholtz, and other followers of Ernst Mach, who ape the reductionist notions of Aristotle on this point. *Second*, we follow Leib-

niz's introduction of that Classical, Platonic concept of power (German: *Kraft*) in the course of his 1671-1716 founding of the science of physical economy. Third, the identical use of the notion of *power*, in Gauss's 1799 definition of the complex domain: the mathematical-physical notion of *power* employed in defining the fundamental theorem of algebra.

In the case of power versus energy, in particular, sane people argue the significance of the usage of terms as if by pointing to an object, or action, or both. There are two most general types of cases for such "pointing" action: to that shadow naively considered as a sense-observable object, or, rigorously, as an object whose physically efficient existence is expressed by its observed or conjectured effect on the domain of sense-perception, such as an object within the bounds of nuclear microphysics.

In Classical science and Classical artistic composition, the most important class of objects, belongs to a sense-invisible domain of universal physical principles. These principles are defined by application of Plato's Socratic principle of hypothesis to the domain of experimental practice, like Kepler's definition of universal gravitation, or the definition of a principle of life by the combined efforts of Pasteur and followers such as Vernadsky, The mapping of the existence of the objects specific to that domain, is to be understood broadly, today, from the standpoint of reference of a Riemannian, anti-Euclidean physical geometry. The principles of modern physical economy can not be identified efficiently, without reference to the specifically topological implications of a Riemannian physical geometry, if not such a mathematics itself.

As for Kepler's discovery of gravitation, or the concept of the related principle of universal physical least action by the successive efforts of Fermat, Huyghens, Leibniz, and Jean Bernouilli, and Leibniz's unique discovery and proof of a notion of infinitesimal calculus contrary to the reductionist apriorism of Euler, Lagrange, Cauchy, *et al.*, the discovery of universal principles pertains to *relationships*, not things as such. Archytas' solution for the challenge of constructing a doubling of the cube, epitomizes the principle otherwise expressed more simply by constructing the doubling of a line *per se*, or Plato's treatments of the solution for doubling the square.¹⁸

Plato's treatment of the implications of the five Platonic Solids, and the late Professor Robert Moon's treatment of the role of a series of Archimedean solids in grasping Mendeleev's Periodic Table from the standpoint of the physical chemist, only typify a crucial issue of the *hylozoic*

18. See "The Historical Individual," *op. cit.*, pp. 28-29.

principle addressed by such avowed followers of Cardinal Nicolaus of Cusa as Luca Pacioli, Leonardo da Vinci, and Kepler. That is the crucial issue of Riemann's 1854 habilitation dissertation, the concept of the universal ordering of relationships among principles as such. This standpoint, of Riemann, is crucial for a competent notion of physical economy.

Think of what are sometimes referenced as "thought-objects." When that reference to "thought-objects," as distinct from mere sense-objects, is made to a competent effect, it is a way of speaking which intends to convey ideas of that distinct class to which Kepler's notion of gravitation belongs. It references not an object of sense-perception; it references an efficient, universal principle of the universal physical-space-time for which sense-perceptual objects are merely, as Plato states, shadows. All members of this class of real, as distinct from shadow-objects, have the common characteristic of referring to *relations*, rather than discrete objects like those attributed to sense-perceptual space.

For example, Kepler locates the mathematical expression of gravitation in the relationship among the harmonic characteristics of planetary and other orbits.¹⁹ Universal gravitation is an objective quality of the ordering of relations among observed objects. Gravitation assumes the character of a "thought-object" when it is the subject of relations to other sets of "thought-object" forms of relations. This point is crucial for grasping Plato's, Leibniz's, and Gauss's referenced use of the notion of powers, as opposed to, and distinct from the Aristotelean hoax of "energy."

A Riemannian physical geometry is, itself, such a thought-object. The subject of that geometry is a relationship among a set of relations, each of which corresponds to a universal physical principle. The crucial characteristic of that geometry, is the effect of introducing a new array of principles. The catenary-cued notion of universal physical least action, is carried over from Leibniz, such that the difference between any among two of the universal phase-spaces so defined, should be expressed as a measurable difference in the way least-action is expressed in those cases. This sort of comparison may be identified as a "higher geodesic," that in the sense of those general principles of curvature which Riemann adopts from Gauss. The type of effect to be expected, includes

the notion of a universe undergoing a speeding-up or slowing-down process as the relevant Riemannian n -fold domain is altered. This, in fact, is, as I shall show here, precisely what does occur in a modern physical economy. This fact, is the underlying feature of any competent science of physical economy.

A Riemannian Reading of Vernadsky

From the outset of his revolutionary, 1854 habilitation dissertation, Riemann follows Gauss's teacher Kästner, in expunging all of the arbitrary, *a priori*, elements, such as definitions, axioms, and postulates, from geometry. Hence, Gauss and Riemann represent *anti-Euclidean*, rather than merely *non-Euclidean* geometries.

In that dissertation Riemann explicitly excludes from mathematical physics the *a priori* elements of both a Euclidean, and non-Euclidean geometry, and also of counting-number arithmetic. For him, there is no purely mathematical proof of principle; matters of principle are matters of physical-experimental tests of hypotheses, not of a so-called "pure mathematics."

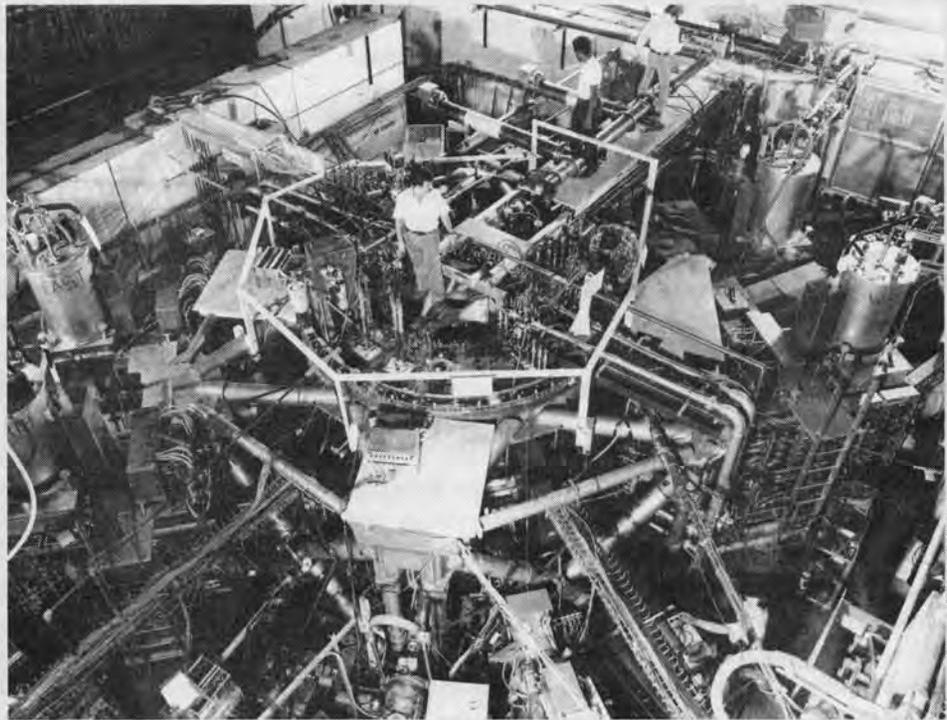
So, earlier, Gauss, in his *Disquisitiones* and later report on the subject of biquadratic residues, had proven that the underlying basis for a competent arithmetic lay in those underlying physical-geometric roots and powers which are expressed by the complex domain. So, Lejeune Dirichlet and Riemann have shown, successively, the fallacy in Euler's efforts to define the prime-number domain. *Scientifically efficient knowledge exists only in experimentally provable, hypothetical, Platonic solutions for evidence of true ontological paradoxes among the relations within the domain of sense-perception.* Such proven hypotheses are universal physical principles which express, not objects *per se*, but relations among either, in the first case, sense-perceptual experiences, or among sets of universal physical principles. These relations replace the reductionist notions of a Euclidean or non-Euclidean geometry. Knowledge of these relations comes only as solutions for a form of irony which is to be recognized as *metaphor* in Classical artistic composition, and as ontological paradoxes in formal epistemology and physical science.²⁰

It is the experimentally demonstrable relations among such relatively universal sets of universal physical principles, which define a Riemannian physical geometry. Such

19. On this basis of harmonics, Kepler indicated the earlier existence of a since-disintegrated planet lying among the inner planets of the solar system, between the orbits of Mars and Jupiter. This was confirmed by Gauss's discovery of the Asteroid Belt, with the latter's harmonic characteristics coinciding with Kepler's values for the exploded former planet.

20. This is also expressed by that Classical Greek principle of sculpture, by means of which a body in mid-motion is conveyed to the mind. The new method of defining perspective, by Leonardo da Vinci, achieves the same effect in painting. The "miraculous" power of Leonardo as artist expresses the same principle as Gauss's notion of the complex domain.

In the science of physical economy which was introduced by Leibniz, the term *power* references, implicitly, the mastery of a relatively higher order in what Gauss was later to define as the complex domain. In Riemannian geometry, it points to a qualitative change in the manifold through incorporation of a new universal physical principle.



Princeton Large Torus (PLT), built for experimental fusion development, 1977.

Princeton Plasma Physics Laboratory

a geometry is not defined as a fixed geometry, as Euclidean and non-Euclidean aprioristic geometries do. It is defined by a process of change, whose expressed characteristic value must be determined, as Riemann insists in the close of his habilitation dissertation, by physical-experimental methods, not by methods of mathematical or other modes of deduction. I have placed this Riemannian principle as the cornerstone of a competent modern mode in the science of physical economy.

In the science of physical economy which was introduced by Leibniz, the term *power* references, implicitly, the mastery of a relatively higher order in what Gauss was later to define as the complex domain. In Riemannian geometry, it points to a qualitative change in the manifold through incorporation (e.g., addition) of a new universal physical principle. In the latter case, the effect whose measure is to be adduced experimentally, is a change in the expressed characteristic curvature of the domain expressed as the effect of that change.²¹

21. Bernhard Riemann, Habilitation dissertation, Sec. 3.

In economy, the reflection of the introduction of a new physical principle to bring about an increase of the effective, cross-sectional “energy-flux density” of a process, changes the characteristic curvature of the economy, without need of any other change applied, to increase the pre-existing productive potential *per capita* and *per square kilometer* of the Earth’s surface area.

The point about economies which that illustrates, is that increases in the productivity of the component productive processes of an economy, may be effected through changes in the infrastructure of the economy, even without any internal changes in the affected individual productive enterprises of that economy. Thus, improvements in the state sector’s generation and maintenance of basic economic infrastructure, such as transportation, power, water-management, health-care, and education, will tend to be most efficient in fostering increases reflected in the productivity of local private enterprises, even without any additional change internal to those enterprises themselves. This kind of functional relationship in the environment of a subsumed local phase-space, is specifically Riemannian. Similarly, it is qualitative changes of princi-

ple in technology introduced to local enterprises, such as in the developmental sector of the machine-tool sector, which will have the relatively greatest beneficial impact on the productivity of the economy as a whole.

Thus, the greatest improvements in the performance of a local enterprise, are indebted to conditions external to them, such as improvements in infrastructure, and also scientific and other cultural changes, supplied from outside them, for the greatest relative improvements in internal performance. For that benefit, the individual enterprise must be directly, or indirectly taxed by government. It is through relevant action by government, or by institutions aided by government, that such indispensable external benefits are supplied to the individual households, local communities, and private economic enterprises.

Take as an illustration of the just-cited paradox, the idiocy implicit in the present model of U.S. National Income and National Product accounting, as, similarly, the childish folly of most of today's generally accepted professionals' interpretation of financial- and cost-accounting reports.

Basic economic infrastructure, such as mass-transport systems, functionally integrated power-generating and distributing systems, national and regional water-management systems, national and regional health-care systems, and educational systems of regions of the nation, or nation as a whole, have beneficial effects on local physical production whose causes can not be located as internal to that production itself, but which determine the relative physical productivity of operations within such individual enterprises. The provision of such systems must be organized by governments, not private enterprises, which must maintain such systems through a repertoire which includes a combination of general tax-revenues and Federal, state, and local regulation of prices and practices of relevant utilities.

In effect, the quality of those public works and their regulation supplies an effective degree of relative (Riemannian) physical-space-time curvature to the domain within which the relevant private enterprises are situated.

Similarly, for related reasons, progress in productivity of agriculture and manufacturing depends chiefly on entrepreneurship in technologically progressive family farms and relatively small manufacturing enterprises, rather than under representatives of absentee "shareholder" ownership. The function of partnership between government initiatives and regulation of basic economic infrastructure, and technologically motivated entrepreneurship, rather than absentee harvesting of extracted financial profits from a looted field of agriculture, is an essential feature of the uniquely American creation, the American System of political-economy. This is the economic system, as defined by Alexander

Hamilton, Mathew Carey, Friedrich List, and the world's greatest Nineteenth-century economist Henry C. Carey.

For similar reasons, the American System demands that European-style central banking, including the similar function of the Federal Reserve System, be banned from the Americas, in favor of national banking as defined by Treasury Secretary Alexander Hamilton. On these and related accounts, the superiority of the American System is rooted in characteristic features which cause it to differ axiomatically from the morally and technically inferior European system of so-called "capitalism," as defined by such followers of the British East India Company's Haileybury School as Karl Marx.

My primary emphasis on the technologically aggressive entrepreneur, as farmer or manufacturer, does not disregard the role of large corporate enterprises. However, we must recognize the danger inherent in the role of a profit-interest which seeks to divorce itself from a sense of primary accountability to the public, rather than merely private (e.g., "shareholder") interest. On the latter account, the state must circumscribe the corporate form of for-profit private enterprise with its own adopted devotion to some adopted mission of benefit for society in general, and also impose governmental regulations which channel its behavior into conformity with that adopted, authorized corporate mission. In this example, as in the role of basic economic infrastructure, in economy in general, the primary site of performance is the economy considered as a coherent unit, rather than a sum-total of parts. The whole must be a source of added benefit to the local function, as the local function must be a contribution to the essential mission-function of the society as a whole.

Restate the immediately preceding series of points in terms of the relationship of Noösphere to Biosphere, as follows.

The Earth without the intervention of those cognitive powers of hypothesis unique to the human individual, were merely a Biosphere, in which human beings, if they existed, merely learned, as apes do, and accomplished virtually nothing which an ape could not achieve, or even, perhaps, surpass. *It is the accumulation of transmitted discoveries of both universal physical, and kindred cultural principles, which is the action which transforms a mere Biosphere into a true Noösphere. It is that specific quality of action which defines the functional presence of the individual human mind, and it is only the effect of actions so accomplished, which defines the transformations which distinguish a Noösphere from a mere Biosphere.* The complex of efficiently employed, accumulated such principled actions, defines the universal phase-space, a Riemannian phase-space, which is economy.

However, that is not all. The social process which defines an economy depends upon an additional principle.

Society and Economy

As I have emphasized earlier in this report, my contributions to the development of a science of physical economy, have depended upon two systemic considerations of a pervasively axiomatic quality. *First*, my studies of the sovereign act of cognition, the role of experimentally validated discovery of a universal hypothesis, as the original source of the power by means of which mankind's power in and over nature is increased. *Second*, the crucial, ostensibly paradoxical challenge of replicating such an hypothesis generated within the "hermetically sovereign" processes of one mind, in another's. On the second count, my recognition of the absolute superiority of Classical culture, as typified by the Schiller-Humboldt model of a Classical humanist education, has been crucial for my unique contributions to a science of economy.

On the second count, I have warned repeatedly against the intrinsic incompetence and bestialization of students subjected to such horrors as education aimed at training victims to achieve satisfactory scores on computer-audited, standardized multiple-choice questionnaires. Only a Classical humanist program of education, of the type virtually banned by Germany's Brandt reforms in education, promotes the actual transmission of knowledge from one generation to the next.²² This process of transmission of the experience of an act of hypothesizing, defines a sub-phase-space. This sub-phase-space is composed of an array of universal physical principles which has the form associated with principles of Classical artistic composition, as distinct from, and opposed to Romantic practices of artistic composition and political statecraft.

The first such principle is, of course, the reenactment

of an experimentally validatable form of hypothesis within the sovereign cognitive processes of a second mind.

The first principle focusses our attention on three distinct phases of such a transmission. First, the Socratic form of ontological paradox which begs the discovery of a validatable hypothesis, as Plato's *Parmenides* dialogue typifies such a challenge to the folly of all reductionists. Second, the generation of the required hypothesis in the mind of a discoverer, or rediscoverer. Third, the experimental validation of the hypothesis as a universal physical principle. The first and third phases are representable in terms of sense-perception; the second, which lies in the complex domain of reality, is not. If, however, the first and third phases are in agreement, the first and second persons know that their respective hypotheses are coincident notions of relationship: *ideas*.

Since such *truthful* ideas have physical effects upon the universe, effects produced by persons acting upon such ideas, the class of artistic principles associated with the experimentally based transmission of such ideas, are universal physical principles. Such ideas, and only such ideas of hypothesis-based social relations qualify as principles of Classical artistic composition, as distinct from Romantic, modernist, existentialist, etc. Such is the difference between the Classical mode of composition of J.S. Bach, Haydn, Wolfgang Mozart, Beethoven, Schubert, Mendelssohn, Schumann, and Brahms, and such malicious, Romantic parodists of the Classical composition of Bach, *et al.*, as Czerny, his pupil Liszt, Berlioz, and Richard Wagner. All Classical artistic composition leads to a specific variety of definition of a unifying universal idea; Romantic composition, leads to a sensual effect instead of an idea; systemic Romantic corruption in the performance of Classical musical compositions degrades the composition from a Classical idea, to a sensual effect, or series of such effects.²³

22. Those "Brandt reforms" were but one instance of the implicitly genocidal, 1963 Paris OECD report on educational policy of Dr. Alexander King. This report's demand for the destruction of European systems of Classical education was an integral part of the same neo-malthusian pestilence otherwise represented by King's, and the Cambridge Systems Analysis group's leading role in founding, and steering the pro-genocidal Club of Rome and Laxenberg, Austria-based International Institute for Applied Systems Analysis (IIASA). These radically empiricist, pro-genocidal programs were outgrowths of the work of the arch-Mephistophelean Bertrand Russell's founding of the Unification of the Sciences project currently linked with the right-wing, pro-Satanic sex-and-money cult of Sun Myung Moon.

23. For reference, consider the emphasis of the leading conductor of the Twentieth century, Wilhelm Furtwängler, upon what he sometimes describes as "performing between the notes." The Classical score is a Classical composer's projection of an intrinsically anti-Euclidean idea upon the pages of Euclidean geometry. The reality of the intended performance of that composition lies, episte-

mologically, within what Gauss defines as the complex domain. The great performer, as typified by Furtwängler, is performing nothing but the entire composition, bringing to bear a higher sense of Bachian contrapuntal integration of the indivisible whole composition upon each part of the performance. The "meaning" of the composition is expressed by those variations from the strict reading of the score which effect the functional integration of each portion of the performance to the whole. These variations are of the same, delimited scope which separates a Euclidean reading of nature from the reality located within the complex domain. The objective is not to hear the interpretation of a score crafted by Beethoven, but to hear Beethoven's voice speaking directly to the performers and audience alike. Hence, "between the notes." Hearing an HMV pressing of a recorded performance of Furtwängler's conducting of a Tchaikovsky symphony, in a U.S. replacement depot in India, in early 1946, changed my life, for precisely this reason. This experience contributed in a crucial way to my discovery, beginning a few years later, of the implications of Classical principles of artistic composition for science.

So, therefore, Classical tragedy is never an expression of mere fiction. It is a study of a referenced page from either actual history, or a legendary account which exerts an effect similar to the impact of actual history upon the members of a culture. Thus, for example, we have Shakespeare's English histories, which reflect the legacy of Sir Thomas More's studies, or the legendary material which Shakespeare used for the cases of Hamlet, Macbeth, and Lear. We have Schiller's Don Carlos and Wallenstein, which are truthful accounts of living history, based upon historical studies of the crucial strategic features of the referenced case. Classical poetry, as Shelley defines in his "In Defence of Poetry," or Keats's "Ode on a Grecian Urn," addresses the subject of those matters which pertain to "the power of imparting and receiving profound and impassioned conceptions respecting man and nature."

Ancient through medieval and modern European history, is essentially a reflection of the ebbs and flows of a continuing conflict between the legacy of ancient Rome (Romanticism and its even more decadent derivatives, such as pragmatism and existentialism) and the Classical Greek culture typified by Solon and Plato (the Classical tradition upon which the U.S. Declaration of Independence and Preamble of the Federal Constitution were premised). The most crucial issue is Plato's Socratic principle of *agapē*, as expressed by 1 Corinthians 13 and the Fifteenth-century Renaissance notions of what was termed, alternately, the general welfare or common good. *Agapē* is a universal physical principle, which separates Roman and medieval ultramontane cultures absolutely from a society based on that Christian doctrine of natural law which defines the modern sovereign form of nation-state (as distinct from the opposing, neo-Venetian Anglo-Dutch liberal model of imperial maritime power, for example).

For example, the two principles and added key corollary of the Preamble of the U.S. Constitution—sovereignty, general welfare, and posterity—like the incorporation of Leibniz's anti-Locke specification of life, liberty, and the pursuit of happiness in the U.S. Declaration of Independence, represent universal physical principles which set such states absolutely apart from nations not self-ruled by the integrity of those inseparable three principles.

The normal mode of transmission of knowledge of such principles, like the transmission of knowledge of universal physical principles through regeneration, is what is recognizable as Classical humanist education, which is itself a matter of universal physical principles.

That is a method of education in opposition to all decadent modes of mere learning, such as "sharing of information," etc.

This matter of the role of principles of Classical artistic composition as universal physical principles, defines many volumes of exposition, but the essential principle is clear from what is written here thus far.

It is through the addition of universal physical principles to a society's practice, that the manifold of society as a whole may be transformed to the effect of increasing the power to exist expressed by the improvement in the characteristic of the society considered as a manifold. In short, a "zero-technological-growth" culture is a dead man walking, but, in history's long-ranging eyes, not for much longer.

Ideas as Power

Combine the two sub-phase-spaces of discovered universal physical principles: individual discoveries of principle respecting man's action on the Biosphere, and those principles of social cognitive interaction which are typified by Classical artistic composition. Without human intervention within the Noösphere, no man-made profit is generated. If we measure the rate of growth *per capita* and *per square kilometer* over three to four generations, or perhaps longer in pre-modern existence, the margin of net social profit of entire societies is a reflection of the accumulation of new applications of combined such types of universal physical principles.

I explain. In the case of zero-technological growth, the apparent rate of physical-economic growth may appear to be positive over as long as the medium term, after which an entropic attrition sets in. In such cases, the apparent profit of output over acknowledged expenditures may appear to be sustained, up to the point that a marginal decline in *per-capita*, *per-square-kilometer* physical income through technological attrition becomes implicitly measurable. Over the longer term, as now, the evident rate of attrition becomes catastrophic. Depletion of earlier capital improvements in society's basic economic infrastructure, as now, takes over.

When such types of technological and related attrition set in, generally accepted accounting methods can no longer conceal the approaching catastrophe.

Or, when cost-reduction is used to maintain a nominal profit-margin, the claimed "cost-reductions" which are wishfully considered a product of good, tough-minded management, those foolish notions of "cost reduction" build the foundations of a looming catastrophe,

even in the accountant's picture of things, as in today's collapse-wracked U.S. economy and monetary-financial system.

The core of competent economic science, is study of the very long wave of increase of the human species' potential relative population-density. On this account, man is studied from two standpoints. First, as a creature of a relatively fixed range of variations of potential, as a part of what Vernadsky defined as the Biosphere. Second, as a creature of the Noösphere. On the first account, we compare the range of human potential with the ranges found among, or reasonably adduced for the higher apes. On the second account, we treat man as a species which evolves in an upward direction, through the production of what I find it convenient to identify as "super-genes": *culturally transmissible discoveries of universal physical principles*. I describe these as "super-genes," to point out that there is no visible change in the equivalent of an ape-like genotype accompanying the culturally determined increases in potential relative population-density of society. The changes in human potential accomplished through the realization of discoveries of universal physical principles, have the same kind of "ecological effect" as upward genetic development within the bounds of the Biosphere's phase-space, but no known changes in the human-specific genotype account for this effect.

For example, global experience demonstrates that there is no actual racial difference in cultural potential among human beings from any part of the population. If we adopt new-born infants from any part of the world, and develop them in any one choice of culture, the range of potential development will be in the same range of variability as for infants from other family backgrounds. There are no human races; there is only one human species, and one human race. The essential differences to be studied are culturally determined, not biologically pre-determined.

On the first count, looking at the condition of our planet over approximately two millions years to date, and taking into account the changes in the conditions for ape-like or human biologies during cycles of glaciation and other gross environmental values, we must estimate that the pre-cultural "ecological" potentials of our species were reached long prior to any part of historical time. Any increase in human potential relative population-density above those paleontological levels, is due entirely to cultural determinants [SEE Figure 2 and Table I, pp. 27-28].

That category of cultural determinants of variable human potential relative population-density, points to

the topic of what I have identified as "super-genes." At this point, for purposes of approximation, distinguish two functional types (sub-phase-spaces) of universal physical principles. First, discoveries of universal physical principles, respecting the individual's functional relationship to the Biosphere, as those discoveries are effected by the sovereign dialectical-cognitive powers of individual discoverers. Second, those principles which pertain to the willful coordination of social relations within society. Situate the domain of "super-genes" as the Noöspheric phase-space of a Riemannian manifold, accordingly.

For that case, it must appear to be the prevalent tendency that, first, the potential relative population-density of society must tend to increase as a function of the degree of practice of increased accumulation of discovered universal physical principles of the mankind-Biosphere relationship (e.g., "scientific progress"); but, second, the possibility of realizing such a benefit is delimited by progress in discovery and realization of those universal physical principles which are specific to social relations. Therefore, the general rule is, in first approximation, that the potential rate of increase of society's potential relative population-density is a function of the rate of discovery and application of universal physical principles of the first class, but within bounds determined by the realized practice of principles of the second class of sub-phase-space.

Each such discovery of a dialectical-cognitive principle represents a *power*, in the sense of my references to such a notion by Plato, Leibniz, Gauss, *et al.* It is a power expressible mathematically only in terms of Gauss's definition of that complex domain which does not exist within the axiomatically reductionist framework of the mathematics of Euler, Lagrange, Laplace, Cauchy, Clausius, Grassmann, Kelvin, Helmholtz, Felix Klein, *et al.* It is the addition of discovered *powers* of this quality to the repertoire of human practice, which generates the long-ranging increase of the potential relative population-density of a culture. These powers express what I have identified as "super-genes."

The immediately foregoing outline of the argument does provide simply pre-calculable estimates of progress; it does define the way we must think about our subject of potential.

Since all of those principles are situated, epistemologically, within the Gauss-Riemann definition of functions of the complex domain, rather than the domain of deductive (e.g., empiricist) readings of simple sense-perception, the only viable human policy for the practice of economy, is a science-driver policy coherent with the non-capitalist

domain which U.S. Treasury Secretary Alexander Hamilton identified as the American System of political-economy.²⁴ This means a science-driver policy articulated in a manner consistent with a Classical culture, rather than a Romantic one.

3.

The Economic Role Of Leadership

The necessary function of the exceptional leader for a time of crisis, is definable against the background of the immediately foregoing discussion.

For such reasons, in modern society until now, during any period nations attempt to settle into a routine of what might be esteemed as “normal” day-to-day, week-to-week, year-to-year life, the nation tends to slide into a pattern of increasing economic, cultural, and moral decadence. Periods of economic, cultural, and moral vitality, appear to coincide with times during which everything notable about a society is subordinated to a “science driver” mission-orientation, or its like, such as the Fifteenth-century Renaissance; or, as during the leading roles of Cardinal Mazarin and Jean-Baptiste Colbert, in leading Europe, for a time, out of the 1511-1648 horror of Habsburg-led religious warfare; or, the Germany-led, anti-Romantic Classical Renaissance of approximately the 1763-1789 interval of trans-Atlantic scientific and Classical cultural developments; or, the role of the Humboldt brothers in keeping European civilization alive during the 1815-1861 interval; or, the world-wide impact of the leadership provided by Henry C. Carey and President Abraham Lincoln; or, the rescue of civilization from a threatened world-wide new dark age under the leadership of President Franklin Roosevelt; or, President Charles de Gaulle’s commitment to “indicative plan-

24. “Capitalism” signifies the neo-Venetian, imperial maritime system of financier-oligarchical rule typified by the Anglo-Dutch models of William of Orange and the Eighteenth and Nineteenth centuries’ British monarchy. The doctrine of the British East India Company’s Haileybury school of Bentham, Adam Smith, Thomas Malthus, *et al.*, is typical. The characteristic feature of such a system is the “independent” political reign of a central banking system. Literate U.S. patriots do not refer to the United States as a capitalist economy, except to curse such alien influences among us. Patriots say “American System,” as Hamilton, the Careys, and Friedrich List define a non-capitalist national system of economy. Many U.S. university professors will disagree with me, but never truly literate ones.

ning”; or, the space-oriented science-driver program as adopted and boosted by President John F. Kennedy; and so on.

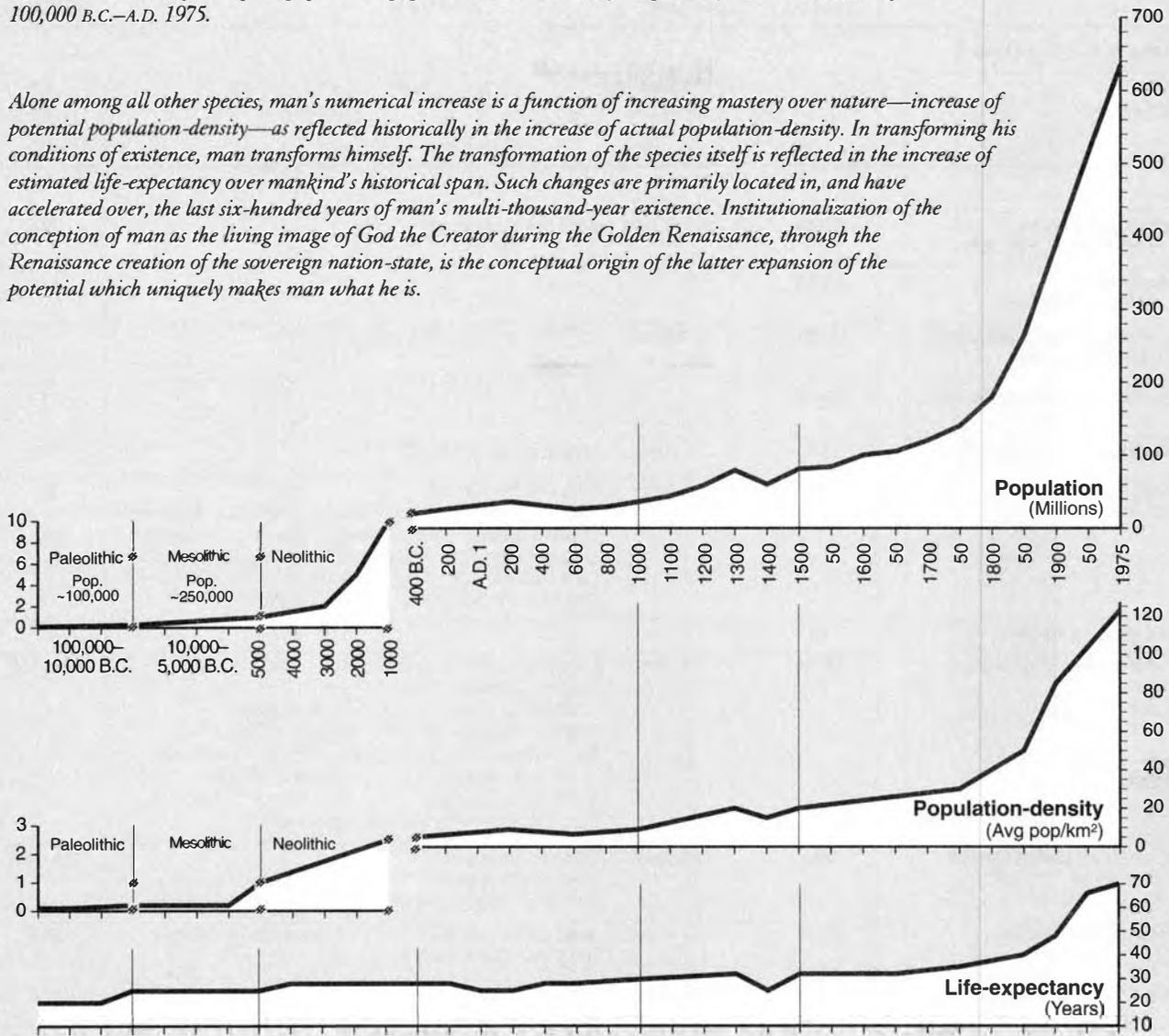
Those aspects of my own experience which have been proximate to leading features of U.S. and other policy-shaping, which gave me insight into the crucial factor determining the choice between economic-cultural “up-ticks” and economic-moral decadence, center around the presence, absence, and fate of powerful “science-driver” programs. The highest rate of long-term economic progress tends to occur only under the impact of major, mission-oriented “science-driver” types of so-called “crash programs,” such as President Kennedy’s sledgehammer acceleration of the Manned Moon Landing program. Franklin Roosevelt’s commitment to rescue the nation from the 1929-1933 Depression caused by the cumulative effects of the policies of the President Theodore Roosevelt, Woodrow Wilson, and Calvin Coolidge Administrations, was such a mission-oriented “crash program” in effect. The most notable feature of that FDR recovery program was the military-logistical aspect set into motion beginning about the time of the 1936 election, when the inevitability of Hitler’s war against civilization became undeniable among thinking political leaders around the world. It was this feature of President Franklin Roosevelt’s leadership which gave the relatively greatest impetus to post-war recovery and new growth world-wide.

This curious importance of mission-oriented “crash programs” can be understood best by comparing their two principal aspects: the subjective (political) and objective (physical-economic). Objectively, all competent economic policies are based on programs which require one to two generations to bring to completion. Subjectively, since most of the population, including politicians and corporate and banking leaders so far, are so poorly developed intellectually, so pathetically pragmatic, that they do not actually understand the decisive “long-wave” features of real economic processes; usually, it has only been under conditions of pending or actual major war-fighting, that most such strata of society, and also popular opinion, are capable of committing themselves to those broad-based, long-term policies on which the success of modern economies depends absolutely.

So, preparing, beginning the mid-1930’s, for the state of virtually world-wide warfare expected for the 1940’s, was crucial in laying the basis in economic development for U.S. survival and victory in World War II. So, the highest rate of technological progress in the post-1945 U.S.A., was accomplished under the impact of the Kennedy Manned Moon Landing commitment, that

FIGURE 2. Growth of European population, population-density, and life-expectancy at birth, estimated for 100,000 B.C.—A.D. 1975.

Alone among all other species, man's numerical increase is a function of increasing mastery over nature—increase of potential population-density—as reflected historically in the increase of actual population-density. In transforming his conditions of existence, man transforms himself. The transformation of the species itself is reflected in the increase of estimated life-expectancy over mankind's historical span. Such changes are primarily located in, and have accelerated over, the last six-hundred years of man's multi-thousand-year existence. Institutionalization of the conception of man as the living image of God the Creator during the Golden Renaissance, through the Renaissance creation of the sovereign nation-state, is the conceptual origin of the latter expansion of the potential which uniquely makes man what he is.



All charts are based on standard estimates compiled by existing schools of demography. None claim any more precision than the indicative; however, the scaling flattens out what might otherwise be locally, or even temporally, significant variation, reducing all thereby to the set of changes which is significant, independent of the quality of estimates and scaling of the graphs. Sources: For population and population-density, Colin McEvedy and Richard Jones, *Atlas of World Population History*; for life-expectancy, various studies in historical demography.

Figure compiled by Kenneth Kronberg

Note breaks and changes in scales.

even despite the 1964-1976 phase of “de-industrialization” of the U.S. economy in general.²⁵ President Reagan’s S.D.I., as I had proposed and worked to build up that policy-conception and its support during the 1977-

1983 interval and beyond, would have given the U.S.A. the greatest rate of growth in its history, had my efforts and those of the President and others not been sabotaged by such fools and worse as the Heritage Founda-

25. The process of wrecking the U.S. space program during fiscal year 1966-1967. Despite the wrecking of the advanced R&D phases beginning that year, the momentum of development was sufficient to make the immediate mission a successful one. The contri-

bution to technological progress in the economy in general was later estimated to be in excess of ten times what had been spent for it. However, by the end of lunatic Zbigniew Brzezinski’s term as National Security Adviser, the United States had destroyed much of the capacity which had made the 1969 mission a success.

TABLE I. *Development of human population, from recent research estimates.*

	Life expectancy at birth (years)	Population density (per km ²)	Comments	World population (millions)
Primate Comparison				
Gorilla		1/km ²		.07
Chimpanzee		3-4/km ²		1+
Man				
Australopithecines B.C. 4,000,000-1,000,000	14-15	1/ 10 km ²	68% die by age 14	.07-1
Homo Erectus B.C. 900,000-400,000	14-15			1.7
Paleolithic (hunter-gatherers) B.C. 100,000-15,000	18-20+	1/ 10 km ²	55% die by age 14; average age 23	
Mesolithic (proto-agricultural) B.C. 15,000-5,000	20-27			4
Neolithic , B.C. 10,000-3,000	25	1/km ²	"Agricultural revolution"	10
Bronze Age B.C. 3,000-1,000	28	10/km ²	50% die by age 14 Village dry-farming, Baluchistan, 5,000 B.C.: 9.61/km ² Development of cities: Sumer, 2000 B.C.: 19.16/km ² Early Bronze Age: Aegean, 3,000 B.C.: 7.5-13.8/km ² Late Bronze Age: Aegean, 1,000 B.C.: 12.4-31.3/km ² Shang Dynasty China, 1000 B.C.: 5/km ²	50
Iron Age , B.C. 1,000-	28			50
Mediterranean Classical Period B.C. 500- A.D. 500	25-28	15+/km ²	Classical Greece, Peloponnese: 35/km ² Roman Empire: Greece: 11/km ² Italy: 24/km ² Asia: 30/km ² Egypt: 179/km ² * Han Dynasty China, B.C. 200- A.D. 200: 19.27/km ² Shanxi: 28/km ² Shaanxi: 24/km ² Henan: 97/km ² * Shandong: 118/km ² * * Irrigated river-valley intensive agriculture	100-190
European Medieval Period A.D. 800-1300	30+	20+/km ²	40% die by age 14 Italy, 1200: 24/km ² Italy, 1340: 34/km ² Tuscany, 1340: 85/km ² Brabant, 1374: 35/km ²	220-360
Europe, 17th Century	32-36		Italy, 1650: 37/km ² France, 1650: 38/km ² Belgium, 1650: 50/km ²	545
Europe, 18th Century	34-38	30+/km ²	"Industrial Revolution" Italy, 1750: 50/km ² France, 1750: 44/km ² Belgium, 1750: 108/km ²	720
Massachusetts, 1840 United Kingdom, 1861 Guatemala, 1893 European Russia, 1896 Czechoslovakia, 1900 Japan, 1899 United States, 1900 Sweden, 1903 France, 1946 India, 1950 Sweden, 1960	24 32 41	41 43 40 44 48 53 62 73	90+/km ² Life expectancies: "Industrialized," right; "Pre-industrialized," left	1,200 2,500
1970 United States West Germany Japan China India Belgium	 59 48	 71 70 73 180/km ² 183/km ² 333/km ²	1975 26/km ² 248/km ² 297/km ² 180/km ² 183/km ² 333/km ²	3,900

Table compiled by Kenneth Kronberg

tion's Lt.-Gen. (ret.) Daniel P. Graham.²⁶

As long as the typical intellectual and moral mediocrity of today's leadership of most nations, and the generality of their populations, persists, it will remain the case, that governments and populations can not think rationally about economies, except as a sense of extreme danger or some admired, long-range mission enables them to overcome that miserable, heteronomic littleness of mind and soul gripping most of the U.S. and European population still today. Only through adoption of such unifying special goals, are such populations rendered capable of adopting emotional commitment to sustained development of national economies as a whole.

For reason of that customary, heteronomic irrationality of the overwhelming majority among populations and their customary leaderships, it has been generally the case, that only through inducing a population, and its government, to adopt a long-term mission-orientation of not less than one or two generations' span: such as Fifth Republic President Charles de Gaulle's "indicative planning"; or President Kennedy's Franklin Roosevelt-like Moon-landing mission; that a nation in crisis is capable of avoiding a drift into a desultory, kaleidoscopic array of anarchic short-term goals. It was not war which produced U.S. war-time and post-war growth. War persuaded the nation to accept the adoption of that long-ranging sense of mission-orientation which resulted in the growth, but the same mission without war would have been a better performer. War does not produce prosperity; exactly the opposite. It is a powerful sense of economic mission which produces prosperity. It is not the slaughter, but the growth which produces the meat.

The danger is, that under conditions of crisis, with the lack of, or exclusion of truly rational leadership such as that which President Franklin Roosevelt supplied the United States under the conditions of the Coolidge-Hoover Great Depression, an Adolf Hitler, or the equivalent, will be found and used as a rallying point of pop-

ulist mass-lunacy. Hence, under present conditions, when no other leader capable of rational U.S. leadership out of the present global breakdown-crisis has been yet produced to fill the gap, the survival of our nation requires my present-day role as a successor for the Depression-period role of a Franklin Roosevelt.

This does not signify that a mission-orientation is merely some sort of trick used to prevent the reign of heteronomy. What is required is my specific quality of leading competence, which no other known economist has shown thus far. Even more urgent is a leader with both an impassioned and competent commitment to what must be crafted as the state of the nation and world. Without a sense of mission, the solar system could not have existed.

I explain.

The Exceptional Individual in History

The voluntarist's role supplied by exceptional leaders, in any field, has contributed an indispensable role in human progress so far. All crucial discoveries of Classical forms of universal physical principle, whether in so-called physical science, or artistic composition, have been supplied by exceptional individuals. By "exceptional" we point to the role of dialectical-cognitive creative powers of the individual mind, as an experimental validation of the truthfulness of a discovered hypothesis expressed as a true voluntarist principle. It is a principle otherwise known, in Classical artistic composition, as that quality of the *Sublime* which opposes the *Tragic*. As the opposition of the exceptionally good leader, President Franklin Roosevelt, to the exceptionally bad Adolf Hitler, typifies opposing outcomes of a common, existential world-crisis of the 1923-1945 interval, exceptionally good leaders of a nation are usually of irreplaceable, determining importance in periods akin to the world crisis currently entering its terminal phase.

The obvious question so posed is: Why must we subject ourselves to the choice of exceptional leaders? Two statements should be submitted in response to that common, foolish objection from among populists and others. First, this should not be forever the case; but it is now, as it was in President Franklin Roosevelt's time. Second, the distance between the required quality of exceptional leader and the generality of the population, is essentially a moral one. This is a difference of the type shown by the failure of the leading circle around the Rev. Martin Luther King, once he, like President Abraham Lincoln, the exceptional leader, had been removed by use of the methods typical of our enemies' customary practices of defamation, imprisonment, and assassina-

26. In the mid-1970's, Lt.-Gen. Daniel P. Graham was already seeking to wreck any U.S. development of methods of ballistic-missile defense based upon "new physical principles." Later, in mid-1982, Graham, now retired from active duty, and a Heritage Foundation "double dipper," launched a personal vendetta against me, and, later, also Dr. Edward Teller, in opposition to the policies which President Reagan identified, in a March 23, 1983 televised address, as a Strategic Defense Initiative (S.D.I.). After the Reagan address, Graham listed himself in support of S.D.I., but demanded that only "kinetic energy" systems proven to be incompetent should be employed, keeping the scientists out of the picture, and limiting expenditures to technologically superannuated junk available from the archives of defense contractors.

tion of exceptional leaders whose relatively exceptional moral authority that class of enemies fears. No selected leader of the Civil Rights movement had both the well-earned recognition and the moral qualities of that Reverend King who should have become a President of the U.S.A.

The distinction of the exceptional leader of trans-Atlantic European nations, especially in the political domain, is the way in which the truly exceptional leader more or less consciously defines his self-interest as that crafted in imitation of the Jesus Christ of Gethsemane and the Crucifixion, as Martin Luther King did. *The morally inferior type of individuals in general, and of leading figures, especially, is expressed by the way in which the morally inferior person defines the esteemed "self-interest" of "me, my family, and my community." He prefers too much the sense-experienced, momentary pleasures of mortal life, that, like the deserter under fire, he can not dedicate himself, without qualification, to the outcome of that mortal life, as the image of Christ exemplifies this, and as Plato's Socrates defines the immortality of the human soul. Under conditions of systemic crisis, individuals who can not put themselves willfully at risk for humanity, can never be trusted in the most crucial positions of political authority.*

Notably, that moral flaw is more emphatically characteristic of the present "Baby Boomer" generation, than the generation of veterans of World War II. It is a weakness embedded in the households of the "white collar" culture of the 1950's, which became a rampant moral pathology under the influence of the post-1964 shift into the prevalent immorality of the shift from a productive, to a consumer culture. Even to the degree that members of that generation may be susceptible of redemption, despite the conditioning to decadence to which their generation was subjected, they are not a source of that firmness of quality of immortal personal commitment required among top-ranking leaders of a world teetering at the present brink of self-inflicted doom.

The fault in most failed leaders for a time of systemic crisis, is not simply physical cowardice. Blustering cowards of the ordinary kind are a dime a dozen among the like of Vice President Cheney's "Chickenhawks" these days. Shakespeare's Hamlet was cowardice of a different, less ignoble type. Shakespeare captured the essence of the problem in depicting that kind of cowardice of a swashbuckling butcher-of-men, Hamlet, when confronted with the issue of the immortality of the soul. Hamlet's flight forward to death, embracing the corruption of the self-doomed nation he failed to lead out of its own corruption, typifies what our republic must fear

from an inadequate occupant of the Presidency under presently unfolding conditions of crisis. "For what purpose, with the immortality of the soul before your eyes, would you put your life at jeopardy, without vacillation, were the future of mankind to demand this consummate expenditure of one's mortal talent?" No U.S. President since John F. Kennedy is to be suspected of having such a specific quality of courage which Shakespeare's Hamlet lacked.

It works in the following way, to the following effect.

The term Tragedy, as an object of Classical principles of artistic composition, refers to that pollution of the widespread force of popular culture which carries a nation, including the nation's choice of leaders, to self-inflicted general catastrophe. It is not misleaders who carry an aggrieved people to doom, or the like; it is the absence of a quality of accepted, exceptional, institutionalized leaders, which allows a people to destroy, or nearly destroy itself, as did that majority among the upper 20 percent of family-income brackets, and similar strata of Europeans, which succumbed to the popular culture of "consumer society," "free trade," "deregulation," and the now fallen "new economy" hoax. There was never a sane reason for any person in modern Europe, or the Americas, to accept those hoaxes; popular opinion on these and related accounts was, speaking objectively, a clear-cut case of mass-insanity, just as the "fundamentalist" religious cults allied with the pro-Satanic sex-and-money lunacy of the Moonies and their flagrantly gnostic, right-wing nominally Catholic and Protestant allies, are a dangerous expression of Tragic mass-insanity.

In what is called physical science, it is the scientist whose methods of work generate experimentally valid hypotheses, which typifies the Sublime, as the specific quality of work of the true exceptional individual leader in society. In politics, it is the leader who exposes the hoax of current popular opinion, and presents that appropriate alternative needed to rescue society from its own Tragic follies, who expresses the Sublime, as Friedrich Schiller attributes that quality, the Sublime, to the historical, martyred Jeanne d'Arc.

Two types of expression of the Tragic are to be considered. Both are examples of a general epistemological mental disorder called "fallacy of composition." The most significant of today's commonplace expressions of that pathology are typified, on the one hand, by reductionist interpretations of experienced reality, as typified by empiricism, positivism, and existentialism in general. These are fallacies of systemically methodological misinterpretation of actual experience. On the other hand, we

All crucial discoveries of Classical forms of universal physical principle, whether in so-called physical science, or artistic composition, have been supplied by exceptional individuals. By ‘exceptional’ we point to the role of dialectical-cognitive creative powers of the individual mind, as an experimental validation of the truthfulness of a discovered hypothesis expressed as a true voluntarist principle—a principle otherwise known, in Classical artistic composition, as that quality of the *Sublime* which opposes the *Tragic*.



Dr. Martin Luther King, Jr., press conference, 1960's.

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have those forms of mass, more or less psychotic hysteria typified by beliefs in magic, such as stock-market and other gambling manias, and the “Dungeons and Dragons,” “Harry Potter,” “Moon,” and “Protestant Fundamentalist Armageddon” cults. It is those practices of society which are shaped by either, or a combination of both such delusions, which steer a society toward the brink of self-inflicted destruction such as that gripping the Americas and Europe today. Unless those pathological elements of widely accepted, or merely tolerated popular opinion, are overridden, there will be no future existence of our U.S.A. The trolley-line has broken off at the edge of the cliff just ahead. The conductor of the trolley, popular opinion, would rather go over the cliff than break faith with habituated, if presently illusory senses of progress.

To be the kind of leader who fits today’s crisis-stricken requirements, the actor can not merely act out the appearance of the part; he must, as the best professional actors understand, actually “own the part,” gripped by all the passion that part implies. The exceptional leader for a

time of systemic crisis “owns the real-life part he, or she must play.” He is exceptional, because he is immortal, and owns the part of immortality he must play. He wears no mask; he is the part he plays. His reflection on Christ’s sublime mission in Gethsemane and on the Cross, and the kindred reflection of the sublime Jeanne d’Arc, will help such a leader draw upon himself the specific quality of strength which Hamlet lacked, the strength needed for the immortal mission to be performed by a man of Providence for mankind.

The desire to be such a person is commendable, but not sufficient. He must actually know what needs to be done, and he must be capable of knowing what past and future generations require of him at this moment of juncture of the Tragic and the Sublime. Without that knowledge of the principles of physical economy, as I have summarized that matter here, the leader who might be otherwise exceptional could not grasp competently that economic mission, without which humanity’s escape from the present crisis were not foreseeable for earlier than a very long time to come.

Prints and Photographs Division, Library of Congress



Benjamin Franklin



The Granger Collection

G.W. Leibniz

INTELLIGENCE INVESTIGATION

The American Revolution: Leibniz to Lessing, 1676-1776

“Back-tracking from Lessing and Mendelssohn by aid of reference to the exemplary case of Abraham Kästner, takes us into a period, approximately 1676-1776, of dense connections among the continuing, and overlapping networks of Leibniz and the Bach family, not only in Germany and France, but worldwide, including the rallying, around Franklin, of what became the American Revolution and its Federal Constitution, the ‘American Exception.’”

“From the U.S. side, the relevant points include the fact, that the American Revolution was not an epiphenomenon of internal developments within, and figures of North America but rather was a product of the direct influence of, and intervention by chiefly, the Leibniz-centered networks of Europe, in the creation and support of the cause of independence of the first true sovereign nation-state republic, the U.S. under the Preamble of its 1789 Federal Constitution. The networks centered around Leibniz and his followers are the very real, but much overlooked key to understanding how the U.S.A. came into existence, and also understanding the fact that the present-day dupes of the cult of the charlatan Isaac Newton, typify the essence of the corrupting ideology responsible for the virtually treasonous ideological follies threatening the presently impending self-destruction of today’s U.S.A.”

—Lyndon H. LaRouche, Jr.,
from an intelligence memo,
September 19, 1999

INTELLIGENCE INVESTIGATION

Leibniz and the American Revolution

Leibniz, Halle, and The American Revolution

by Edward Spannaus

When the true history of the American Revolution—the Leibnizian American Revolution—is finally written, a important chapter will be the role played by the city of Halle in Germany, which was, in the early Eighteenth century, perhaps the most important center of the scientific activity and ecumenical efforts for the common good which are associated with the name of Gottfried Wilhelm Leibniz.

This history is almost unknown, outside of a few specialist scholars, in either Germany or in the United States. But to understand how the principle of the General Welfare came to be the bedrock of the Federal Constitution, it is essential to examine the role of the Leibniz networks around the University of Halle and what became known as the *Franckesche Stiftungen*—the Franckean Foundations—associated with it.

H. Graham Lowry's groundbreaking work *How the Nation Was Won*¹ identified, for the first time in modern history, the trans-Atlantic, republican conspiracy which set into motion the process of creating a continental republic in the New World, which process culminated in the American Revolution and its historically unique Constitution committed to the principle of the common good, or General Welfare. That conspiracy emerged during the



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A.H. Francke (1663-1727) corresponded with Boston's Cotton Mather, from the Leibnizian intellectual center at Halle, Germany.

latter years of the reign of Queen Anne of England (1702-1714), and centered around three towering figures of the day: Leibniz (working out of the courts of Hanover and Berlin), Jonathan Swift (in London and Dublin), and Cotton Mather (in Boston). Boston-born and -trained Benjamin Franklin, a protégé of Mather, assumed the leading role in the mid-Eighteenth century, carrying this tradition forward into the period of the Revolution.

Lowry located the crucial period of this nation-building conspiracy around the year 1710, when, under the sponsorship and protection of the republican faction in Queen Anne's court, Governor Alexander Spotswood of Virginia, and Robert Hunter of New York, laid their plans for western expansion of the American colonies.

Cotton Mather, Leibnizian Conspirator

Cotton Mather (1663-1728), the most prolific intellectual figure in colonial America, was the direct political heir of the republican founders of the Massachusetts Bay Colony.

In his youth, Cotton knew John Winthrop, Jr., the leading New England statesman and scientist of his day, who corresponded late in life with the young Gottfried Leibniz (1646-1716). Winthrop's ally and political successor was Increase Mather, Cotton's father, who led the fight for the Massachusetts Charter, and in 1683 founded the Philosophical Society, the forerunner of Benjamin Franklin's American Philosophical Society.

Cotton Mather published his *Essays To Do Good* in 1710. Mather's work served as an organizing manual for the American Revolution, and was widely reprinted as late as the 1860's. Its original title unfurled the banner of Plato and Leibniz: *Bonifacius, An Essay Upon the Good, that is to be Devised and Designed, by Those Who Desire to Answer the Great End of Life, and to Do Good while They Live.*

Against the oligarchical claim that man is a beast, Mather declared, "*Government* is called, the *ordinance* of God," and thus "it should vigorously pursue those noble and blessed *ends* for which it is *ordained: the good of mankind.*"

Cotton Mather published 455 works during his lifetime, including treatises on philosophy, religion, ancient languages, history, politics, biology, botany, geology, the art of singing, and the only medical guide for American physicians of that time. He developed a vaccine for smallpox, during a deadly epidemic in Boston in 1721—which nearly cost him his life from an assassination attempt, run from London by the Hell-Fire Club networks of Bernard Mandeville. That battle brought the young Benjamin Franklin, Cotton Mather's most distinguished protégé, into political warfare for the first time. Franklin brilliantly managed an "undercover" role, directed by Mather, which led to his deployment to Philadelphia in 1723, at age 17.

—H. Graham Lowry

Not accidentally, 1710 is also the year of the publication of Cotton Mather's *Bonifacius, or Essays To Do Good*—the work which Franklin later described as the single most influential book in forming his own outlook, and which was inspired not a little, by Mather's study of the work of August Hermann Francke in Halle.

Lowry's 1987 book refers to Francke as an associate of Leibniz, and as William Penn's recruiting agent who organized the German emigration to Pennsylvania. Those few references in Lowry's book, opened up an entirely new avenue of investigation for this author, since I was already somewhat aware of Francke's importance for the Pennsylvania Germans, from my combined interest in American history and my own family history, which intersected Francke's networks in Eighteenth-century Pennsylvania and Maryland.

What follows, are the first fruits of that inspiration.

Francke and Leibniz

August Hermann Francke was born in Lubeck, in 1663; his father was a juridical counsellor in the court of Duke Ernst the Pious of Saxe-Gotha. Gotha, where Francke spent most of his youth, was an early center of the scientific and ecumenical movement in Germany which emerged in the wake of the unimaginable catastrophe of the bloody religious conflicts of the Thirty Years' War.² The center of this movement—of which the towering figure is Leibniz—later shifts to Halle, and then still later to Göttingen. Berlin was also built up as a scientific center in the period following the Thirty Years' War, and as a bridge between Europe and Russia. The spreading, ecumenical "spirit of Halle" is the environment which later nurtured Lessing and Moses Mendelssohn, among others.

Francke attended the Universities of Erfurth, Kiel, and then Leipzig, where he took his Masters Degree in 1685. By this time he had come under the influence of Philip Jacob Spener, regarded as the founder of the controversial Pietist current within German Lutheranism, a reaction to the religious warfare which devastated the German states, and also to the rigid formalism of Orthodox Lutheranism. Francke was expelled from Erfurth in 1691, where he had led the Pietist chapter, and soon after received a call to be pastor at Glaucha, a suburb of Halle. In 1694 he became Professor of Oriental Languages at the newly founded University of Halle. In that year, the University was established by the Elector of Brandenburg, Frederick III (later King Frederick I of Prussia), when Christian Thomasius and a group of students came from Leipzig.

Along with the Elector of Hanover, Brandenburg's Frederick and his wife Electress (later Queen) Sophie Charlotte, were principal sponsors of Leibniz's work, including his contacts with Russia. In 1700, Frederick

and Sophie Charlotte founded the Berlin Society of Sciences (later the Berlin Academy of Sciences) and invited Leibniz to head it.

Sophie Charlotte was the daughter of Leibniz's closest patroness, the Electress Sophie of Brunswick-Lüneburg (Hanover), who was in line to succeed Queen Anne as Queen of England. (Sophie died, conveniently, about two months prior to Anne's strange death.) Had Sophie taken the throne of England, instead of the detestable Georg Ludwig (George I), Leibniz would likely have been named Prime Minister, or would have assumed another influential position in England—and how different history would have been!

Meanwhile, in 1697, Leibniz published his *Novissima Sinica*, a collection of letters and essays from the Jesuit missions in China, and he sent a copy to Francke in Halle, seeking Francke's comments; this launched a correspondence between the two, focussed on Russia and the Orient, which continued until Leibniz's death in 1716; Leibniz also recommended Francke for membership in the Berlin Society of Sciences.

Halle quickly became the focal point for collaboration between the Leibniz networks in the German states, and Russia. In 1697, Peter the Great of Russia met both Sophie and Sophie Charlotte, who put him in touch with Leibniz. This collaboration continued for the rest of Leibniz's life, with Leibniz being named Privy Counsellor of Justice to the Czar, and later helping to found the Russian Academy of Sciences, along with collaborators from Halle. Peter the Great was favorable toward Halle, and it is reported that his wife Katherine once visited the *Stiftungen* incognito. Scientists from Halle played important roles in expeditions to Russia and the Far East, including to Kamchatka and the Bering Straits.³

Leibniz's firmly held view was that the unity of the churches—his life-long project—was in large part a question of languages, and he of course devoted much effort to their study, and himself developed a system for

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By 1700, the University at Halle was Europe's leading center for language studies. H.W. Ludolf (left) organized study of Oriental languages, travelling to Russia and the Far East, as well as London.

Right: A University lecture by A.H. Francke. Below: Students attend a lecture in the Great Hall at Halle.



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the Slavic languages. Halle became the center of language studies in this period. Among those associated with Halle were Hiob Ludolf (1624-1704), acknowledged as the founder of Ethiopian studies in Europe, and his nephew Heinrich Wilhelm Ludolf (1655-1710), who founded Russian, Slavic, and Polish language studies at Halle around 1697.

Hiob Ludolf was an acquaintance of Leibniz; among their topics of mutual discussion were a project for the creation of an Imperial College of History, and the Jesuit edition of the writings of Confucius published in the mid-1680's. A volume of correspondence on linguistics and the origin of languages between Leibniz and Hiob Ludolf has been published in English.⁴

H.W. Ludolf published the first Russian grammar in Latin, in 1696, and he was part of Francke's Bible translation project. As was the case for Leibniz, Francke and Ludolf viewed their work on languages as part of an ecumenical project for the reunion of the churches. Francke's

vision of establishing a Universal Seminary at Halle, coincided with Ludolf's plan for an Ecumenical Seminary at Halle, to unite the German Pietists and the Eastern Orthodox Churches in preparing for missionary work. H.W. Ludolf was well-acquainted with leaders of the churches in Greece, Constantinople, Jerusalem, Egypt, and Abyssinia (Ethiopia), having mastered the languages of those countries.

By the turn of the century, Halle was the leading European center for the study of languages, with an Oriental Institute and a Judaic Institute, among others, and there also existed a major project for translating—and printing—the Bible into many languages.

In 1698, with a charter from the Elector Frederick III, Francke established the celebrated ecumenical orphanage (*Waisenhaus*) at Glaucha, just outside the city wall of Halle, which taught children from all over Germany and other countries, and which became a model and inspiration worldwide for its education of poor children—a direct continuation of the project for the education of orphans and poor children of the Brotherhood of the Common Life in the Netherlands and Germany beginning in the 1390's, which had played such a crucial role in bringing into existence institutions dedicated to the common good (*commonweal*), through the work of both Nicolaus of Cusa, and later, Erasmus of Rotterdam.

And, as this author happily discovered recently, the buildings of the *Franckesche Stiftungen*, dating from 1701, still exist in Halle, and have been in the process of being restored since the reunification of Germany.

The London Connection

The influence of Halle and Francke on America was mediated through London via Queen Anne's court, and more specifically through the court of her husband, the Queen's consort Prince George of Denmark (1653-1708). Prince George is one of those figures who has been written out of history, except for his name living on in Prince



Top: In 1698, Francke established an ecumenical orphanage (*Waisenhaus*) and charity-school for the education of poor children at Glaucha, a Halle suburb. Above: Published reports review methods for educating young children, institutional operations, and progress in the education of young girls.

George County, Virginia, and Prince George's County, Maryland.

As is the case with many of the important figures in the Commonwealth or republican faction, Queen Anne and Prince George are disparaged by the oligarchical history writers. Queen Anne is the most notable example, usually described as fat, stupid, and drunk. Her husband George is generally characterized as a shallow nobody—Queen Victoria referred to him as “the very stupid and insignificant husband of Queen Anne.” Yet this “very stupid” man was known to be well-schooled in the sciences, and was in the middle of a global network of Leibnizian scientists and scholars.⁵

Prince George was the son of King Frederick III of Denmark and Sophia Amelia of the House of Brunswick-Luneburg—thus making him a relation of the Electress Sophie of Hanover, Leibniz's chief patron.

Prince George's secretary from 1686 to 1691 was the above-cited Heinrich Wilhelm Ludolf, the founder of Slavic and Russian Studies at the University of Halle.

The crucial individual linking the German Pietists of Halle to America's New England Puritans—specifically,

Cotton Mather—was Anton Wilhelm Boehm, the chaplain in Prince George’s Court. Boehm was personally recommended to Prince George by Francke, after George had difficulties with his first court chaplain, a strict Orthodox Lutheran. Boehm became the center of an extremely active ecumenical movement in England, and was a leading figure in the Society for the Propagation of Christian Knowledge (S.P.C.K.), along with H.W. Ludolf, who had returned to London in 1700 after a trip to the Near East. Boehm translated ecumenical writings from German into English, and *vice versa*, and translated writings in Latin, such as the Mather-Francke correspondence, into both languages, for broader circulation. By the time of his death in 1725, Boehm had become the clearinghouse for a global correspondence of Francke and the German Pietists, connecting them with the Boston Puritans and connecting Boston with the Halle-sponsored missionaries in India and South Africa.

The Francke-Mather Correspondence⁶

The first correspondence between Mather and Francke took place in 1709; those letters have not been found. Mather’s diary for Dec. 9, 1709, references his circulation of two of his essays on “ye true American pietism” to Ministers throughout America and to “Dr. Franckius, in Saxony.” The diary entry references charity schools and Reforming Societies. Charity schools, for educating poor children, are a principal topic of the triangular Mather-Francke-Boehm correspondence (the other principal topic being missions and ecumenicism); interestingly, the first known reference to charity schools in Mather’s diaries, is the 1709 entry which also mentions “Dr. Franckius.”

In 1711, Mather’s diaries contain four references to his sending an account of his work in establishing an orphan asylum in Boston, which was modelled on that in Halle, and “a present of gold . . . for use of ye University & ye Orphan-house” in Lower Saxony. Mather references “[h]aving received a collection of good and great Things doing of later years in Germany (excellent Advances of ye kingdome of God)” and he writes that it would not only glorify God but “also animate ye like Things among ourselves, to publish it unto ye country.”

In 1714 comes Francke’s letter to Mather which was first published by Mather as *Nuncia bona e terra longinqua* (Good News from a Distant Land). The full letter was later published in English translation by Boehm in Part III of *Pietas Hallensis* in 1716. Boehm had published Part I of



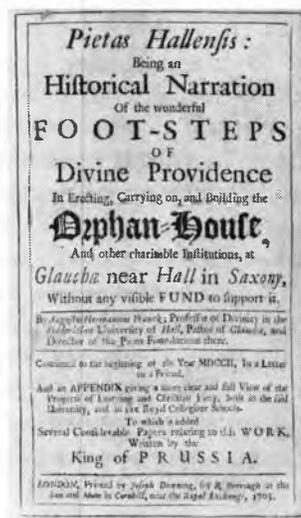
The Granger Collection

The court of England’s Queen Anne (above) and her husband Prince George, was home to Francke’s associates H.W. Ludolf and A.W. Boehm (below).



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A.W. Boehm translated the Mather-Francke correspondence for broad circulation. Right: “*Pietas Hallensis*,” Francke’s 1705 report on the Halle orphanage, translated by Boehm.



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Pietas Hallensis in 1705, and Part II in 1707-08. Part I was subtitled: “An abstract of the marvellous footsteps of divine providence, in the building of a very large hospital, or rather, a spacious college, for charitable and excellent uses. And in the maintaining of many orphans & other poor people therein: at Glaucha near Hall, in the domains of the k. of Prussia. Related by the Reverend Augustus Hermannus Franck.”

The letter to Mather provides a thorough account of Francke’s endeavors at Halle, in the fields of charity, education, and foreign missions.

Francke opens the letter by noting that he had received Mather’s letter, books, and a piece of gold, in April 1713 (referring apparently to the correspondence cited in Mather’s diary for Nov. 10, 1711), and he apolo-



Cotton Mather was the leading intellectual figure of colonial America. Left: Mather's 1710 'Essays To Do Good.' Right: Mather letter to Francke, 1712.

gizes for the long delay in answering, but promises to “make Amends for its Delay” by setting forth “a pretty large Account of our present State of Affairs here, which, I perceive, you are desirous to know.”⁷

Francke reports that the Orphan-House, which maintained 360 persons in 1709, has increased by 100 more who receive their daily dinner and supper in the House. This includes 100 poor boys and 30 girls, plus 24 apprentices and servants who work in the print shop, the library, and the apothecary's shop. The rest are divinity students and scholars, who are permitted to eat their meals there if they need to do so; in return, they are obliged to teach two hours a day in the schools, or to transcribe sermons that are publicly preached, “or also some other matters relating to the good of the Publick.” There are twelve students comprising the “English table” who are maintained by monies allocated by Queen Anne; these students study and teach English, and translate certain books from English into German.

Thus, Francke writes, the Orphan-House is concerned with “the Improvement of the Mind,” as well as with “the eternal Salvation of Souls.” In the Charity School, the youth are brought up “in a living Knowledge of Christ, as also in useful Arts and Sciences.” There are about 600 children in the “German School” (so named to distinguish it from the schools where foreign languages—Latin, Greek, and Hebrew—are taught), most of whom are taught for free, or for a nominal fee. Those in the Latin School are taught history, geography, mathematics, and “Vocal Musick.” These students come from many foreign countries.

Francke also describes the Seminary of School Masters, by means of which the influence of the teaching methods of Halle has been spread throughout Germany. About twelve years earlier there had been established an Oriental School of Divinity, where students learned Eastern languages under Professor Johann Henry Michaelis, who was preparing a new Hebrew Bible. Francke also writes with pride about Christian Benedictus Michaelis, who had taught Oriental languages at Halle for many years.⁸

Not everyone was pleased with what Francke was doing; he reports that there are some who “openly condemn it, as a bad and pernicious Undertaking,” including some “as call themselves Ministers of the Gospel” (probably a reference to the Orthodox Lutheran opponents of the Pietist movement).⁹ Some of these, when having made “some stricter Enquiry into the Matter and thereby having acquainted themselves with the true End and Design of the whole Undertaking,” were delivered from their prejudices, Francke writes. He relates how his enemies hoped, with the death of King Frederick I, his successor King Frederick William would cut off support for the Halle institutions.

Francke then reports the occasion when King Frederick William, accompanied by top officers of his Army, visited and inspected the Orphan-House, and how the King was well-satisfied, and in fact confirmed and enlarged the royal privileges granted to the Hospital. At the *Stiftungen* museum today, the walls are delightfully adorned with key parts of the dialogue between the “König” and Dr. Francke, in which the King asks why Francke is educating poor children, how Francke man-

ages to feed and house so many children, and to keep them warm in winter, and whether the boys will be good soldiers as a result of their training.

Other institutions described by Francke in his letter, are the “Royal Pedagogium” established under Elector Friedrich III in 1695, for the education of the sons of the higher estates, in subjects such as geometry, natural philosophy, astronomy, botany, and like useful sciences. Also the Gynaceum (a school for gentlemen’s daughters), a Cherotrophea (for the support of poor widows), the Apothecary Shop (famous worldwide, and a primary source of pharmaceuticals among the Germans in the American colonies), and the Bookseller’s shop and the printing presses which “have hitherto proved highly serviceable, for promoting Religion and Learning both at Home and Abroad.” Francke also tells of a project for the printing of inexpensive Bibles, which are able to be purchased by poor families.

Francke reports himself pleased by the manner in which in the Halle model of orphanages and teaching of poor children has spread to other parts of Germany, and how “a more enlarged Spirit of Charity . . . has appeared in Germany, among Protestants of both Denominations,” no doubt referring to the Lutherans and the Reformed (Calvinists).

Missions and Ecumenicism

The last part of the Francke letter to Mather is taken up with an account on the mission in Tranquebar in the East Indies, sponsored by Frederick IV of Denmark, in which two missionaries from Halle were sent and later a printer from Leipzig. Francke is pleased that the missionaries were invited to become corresponding members of the S.P.C.K. (At Francke’s suggestion, Mather himself later carried on a direct correspondence with these missionaries, relating his own experiences in the “West Indies” to the missionaries deployed in the “East Indies.”)

Boehm wrote a preface to the edition of the Francke-Mather letter he published, a plea for the ecumenical, universalizing spirit of foreign missions. He declared that it was not the task of missions to draw the heathen into the religious conflicts of the Occident, but to preach true Christianity and to promote the “Church universal.” Boehm warned against “the spirit of partiality” which “sours the mind, rendering it unfit for propagating true wisdom,” and of those who are “more concerned about propagating their peculiar way of worship . . . than the Truth as it is in Jesus Christ.”

In his letter to the Tranquebar missionaries, Mather is critical of the Churches of the Reformation for ignoring missions, terming this “a great and heavy scandal in the Protestant churches.” As did Leibniz, Mather contrasted

the lack of missionary spirit in the Protestant churches to the active missionary activities of the Roman Catholic Church (although Leibniz was rather more sympathetic to the Roman Church than was Mather). This was one of Leibniz’s purposes in the design of the Berlin Society of Sciences: to establish a Protestant mission to China, from which would follow a commerce in manufactured goods, and also in scientific knowledge and wisdom. This feature comes across clearly in the exhibits at the *Franckesche Stiftungen* today: that missions were expected to be accompanied by economic development and trade.

The Outer Darkness

In his 1717 reply to Francke, Mather begins by defending American Christianity against the European anti-American prejudice of the day which identified the “outer darkness” of the Parable of the Talents (Matthew 25:30) in which there will be “weeping and gnashing of teeth,” with America, which was said by some continental theologians to be outside the knowledge and interests of Christ. Mather treats roughly this interpretation identifying America as the “outer darkness,” and comparing emigrants to America with “the worthless servant.”

In his *Magnalia Christi Americana* of 1702, Mather wrote:

But behold ye *European Churches*, There are Golden Candlesticks . . . in the midst of this *Outer Darkness*: Unto the *upright* Children of Abraham, here hath arisen *Light in Darkness*. And let us humbly speak it, it shall be *Profitable* for you to consider the *Light*, which from the midst of this *Outer Darkness*, is now to be Darted over unto the other side of the Atlantick Ocean.

In his reply to Francke, Mather put it this way: “But into these outer regions the salutary, blessed light of the Gospel did finally penetrate. The sun of righteousness and blessedness arose. This is the work of God” Mather further declares that, “in the present depraved and deplorable state of this impure world, there is not to be found a place in which true and genuine Christianity is more cultivated than here in New England.”

Mather, seeing America’s Christian churches as “the light on the candlesticks” illuminating not only the darkness of the American continent, but degenerate European Christianity, frequently polemicized against the idea which linked the West with the Devil, contrasting that with his view of the enlightening mission of America:

It was an odd Ceremony and Superstition in some ancient Baptisms, that when they *Renounced Satan*, they turned their Faces to the West, where the Sun sets in *Darkness*; But professing their Faith in our SAVIOUR, they turned their Faces to the *East*, the Region where *Light* arises. We have

seen the *Sun Rising in the West*; a Forlorn People in the Western World now said, *Thro' the Tender-Mercy of our GOD, the Day-Spring from on high has Visited us.*

Mather found his view of the corruption and decay of the Continental Reformation, to be very close to the attitude of the German Pietists. In an Appendix to his 1716 edition of *Pietas Hallensis*, Boehm had written a brief summary of developments in continental Pietism, emphasizing the practical side of religion, with examples pertaining to the education of children, and the erecting of hospitals and foundations for the care of the poor, and attacking “the vast degeneracy and apostacy of the modern Churches of all Parties.”

“The superficial and common way of philosophizing, together with *Aristotle's* Heathenish trash, has begun to lose credit in some Schools, and a philosophy more favouring of a Christian temper, and rais'd upon more solid Principles, set up again,” Boehm wrote. “*Aristotle* begins to retire before the Light of the Gospel.”

As one might expect, there was a common, strong ecumenical current in the shared outlook of the Mather and the German Pietists, a shared reaction against the religious conflict and religious warfare in Europe, where men would march off to slaughter each other with a sword in one hand and a Bible in the other. In addition to his interest in the unity of the Western churches, Mather was particularly concerned with the Eastern Orthodox Church. In 1701 he published a book entitled *American Teares upon the ruines of the Greeke Churches.*

Related to this was the shared intense interest in missions. Mather, for his part, rejected the view that native Americans were an inferior, sub-species of human, proclaiming that “we are sure, that the *Americans* are of the *Noetic Original.*” For Mather, the American natives, just like the people of Asia, were created in the image of God.

Charity-Schools and Their Enemies: Mandeville and Adam Smith

The same view of man is reflected in the common enthusiasm of Mather and Francke regarding charity schools and the advisability of educating poor children. This is a significant theme of their correspondence and of Mather's diaries. In January 1713 Mather mentions “our overstockt Charity-Schole.” He refers to the Charity-School having “expired” in March 1716, and in July 1716, Mather says that something must be done about a second Charity-School.

In October of the same year Mather writes that he wants to see about a Charity-School for Negroes to learn to read, including reading the Catechism. This is probably the first time anyone in American undertook to educate Blacks—which was of course prohibited in the slave-

holding colonies; Franklin did the same thing years later in Philadelphia. In January 1718 Mather wrote that “I have a Charity-School erected for the Instruction of Negroes and Indians.” In December 1721 he wrote that he has maintained, at his own expense, a Charity-School for the instruction of Negroes in reading and religion.

This must be understood as a bold idea at the time. As indicated above, Francke encountered intense opposition from the strict Orthodox churchmen in Germany to his charity projects and education of the poor.

To put the factional battle in sharp relief, and in its contemporary—and current—setting, we must attend to the evil Bernard Mandeville, who is proclaimed as the founder of free-market economics, and as the intellectual godfather of Adam Smith and of the “Austrian School” of economics of Friedrich von Hayek, Ludwig von Mises, and Milton Friedman.

Graham Lowry's book relates how the young Benjamin Franklin was deployed from Boston on an intelligence mission to London in 1724, to gather intelligence on the operations of the satanic “Hellfire Club” and other enemies of the republican faction in England and America, and how Franklin sought out Mandeville as part of this mission. The previous year, Mandeville had published an expanded version of his infamous *The Fable of the Bees: or Private Vices, Publick Benefits*—an attack on the Leibnizian view of a “grand design” for society and on creating institutions to promote the common good. Men must be free to do their own selfish thing “in the small,” Mandeville insisted, and the combination of individual, selfish, even criminal, actions, will invariably lead to the greatest good “in the large”:

Thus every part was full of vice,
Yet the whole mass a paradise . . .

Millions struggling to supply
Each other's lust and vanity . . .

Their crimes conspired to make them great . . .

The worst of all the multitude,
Did something for the common good.

Attached to Mandeville's expanded *Fable of the Bees* was a new work, an *Essay on Charity and Charity-Schools*, which makes the battle lines very clear indeed. Accounts of Francke's work report that he created the Halle Foundations in direct opposition to the English model of the poorhouses—which were workhouses, poorhouses, and penal institutions, all wrapped up in one.

Mandeville flaunts his oligarchical outlook and his bestial view of man, attacking the Charity-Schools as not just a waste of time, but counterproductive.

Mandeville's theory, simply put, was that every society needs a large body of workers who would patiently sub-

mit to drudgery and poverty. In his “Essay on Charity and Charity Schools,” he wrote:

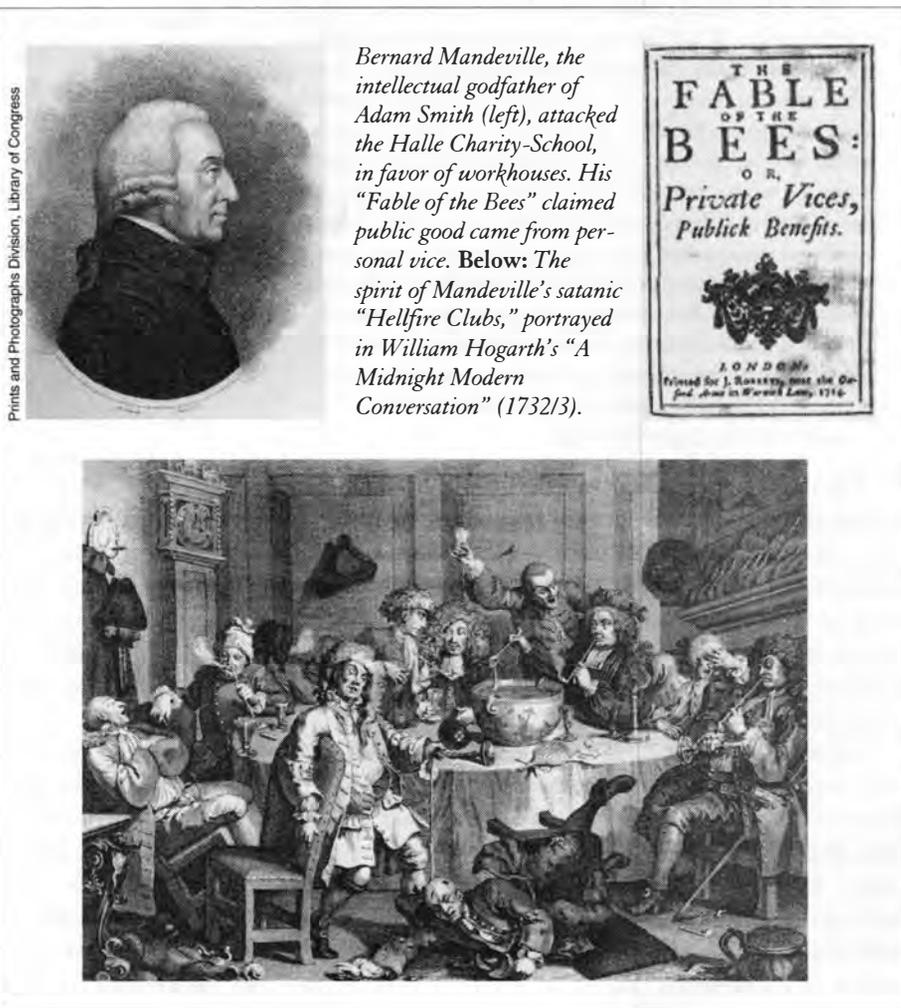
It is impossible that a Society can long subsist, and suffer many of its members to live in idleness, and enjoy all the ease and pleasure they can invent, without having at the same time great multitudes of people that to make good this defect will condescend to be quite the reverse, and by use and patience inure their bodies to work for others and themselves besides.

The plenty and cheapness of provisions depends in great measure on the price and value that is set upon this labor, and consequently the welfare of all societies, even before they are tainted with foreign luxury, requires that it should be performed by such of their members as in the first place are sturdy and robust and never used to ease or idleness, and in the second soon contented as to the necessaries of life; such as are glad to take up with the coarsest manufacture in every thing they wear, and in their diet have no other aim than to feed their bodies when their stomachs prompt them to eat, and with little regard to taste or relish, refuse no wholesome nourishment that can be swallowed when men are hungry, or ask anything for their thirst by to quench it. . . . If nobody did want nobody would work; but the greatest hardships are looked upon as solid pleasures, when they keep a man from starving.

Going to school in comparison to working is idleness, and the longer boys continue in this easy sort of life, the more unfit they’ll be when grown up for down right labor, both as to strength and to inclination. Men who are to remain and end their days in a laborious, tiresome and painful station of life, the sooner they are put upon it at first, the more patiently they’ll submit to it for ever after.

Throughout the “Essay on Charity,” he attacks the idea of educating the children of the poor, because it incapacitates them for labor. From another edition of the same work:

No Body will do the Slavish Dirty Work, that can help it. I don’t discommend them, but all these things shew that the People of the meanest Rank know too much to be Serviceable to us. Servants require more than Masters and Mistresses can afford, and what madness is it to Encourage them in this, by industriously encreasing at our Cost that Knowledge which they will be sure to make us pay for over again!



Prints and Photographs Division, Library of Congress

Bernard Mandeville, the intellectual godfather of Adam Smith (left), attacked the Halle Charity-School, in favor of workhouses. His “Fable of the Bees” claimed public good came from personal vice. **Below:** The spirit of Mandeville’s satanic “Hellfire Clubs,” portrayed in William Hogarth’s “A Midnight Modern Conversation” (1732/3).

THE FABLE OF THE BEES: OR, Private Vices, Publick Benefits. LONDON: Printed for J. ROBERTS, near the Old-Shop, in Warwick-Lane, 1714.

Thus it is, that commentators on Mandeville observe that he viewed religion and trade as contradictory, and that he professed that a nation must choose between moral virtue and economic greatness.

One might expect that such vile rantings would have been consigned to the trash-barrel of Eighteenth-century England, never to be heard again; but, alas, Mandeville is lauded still by today’s “free-market” ideologues.

In his 1957 book *Theory and History*, Ludwig von Mises, one of the key figures of the feudal “Austrian School” of Economics (which “School” is now relocated at Milton Friedman’s University of Chicago) states that during the Enlightenment, eminent philosophers began to abandon the traditional methods of philosophy and finally stopped “brooding about the hidden purpose of Providence in directing the course of events.” They began to look at things from the standpoint of acting men, rather than from the standpoint of plans ascribed to God or nature. This is best illustrated by Adam Smith, says von Mises, but he cautions that,

in order to analyze the ideas of Smith we must first refer to Mandeville. . . .

The older ethical systems were almost unanimous in the condemnation of self-interest. They were ready to find the self-interest of the tillers of the soil pardonable and very often tried to excuse or even glorify the kings' lust for aggrandizement. But they were adamant in their disapprobation of other people's craving for well-being and riches. Referring to the Sermon on the Mount, they exalted self-denial and indifference with regard to treasures which moth and rust corrupt, and branded self-interest as a reprehensible vice. Bernard de Mandeville in his *Fable of the Bees* tried to discredit this doctrine. He pointed out that self-interest and the desire for material well-being, commonly stigmatized as vices, are in fact the incentives whose operation makes for welfare, prosperity, and civilization.

Adam Smith adopted this idea.

Friedrich von Hayek, another godfather of today's free marketeers, likewise praises Mandeville as "an anticipator of Adam Smith's argument for economic liberty," declaring that "the burden of his argument . . . is that most of the institutions of society are not the result of design, but how 'a most beautiful superstructure may be raised upon a rotten and despicable foundation,' namely, men's pursuit of their selfish interests"

Not for nothing did Alexander Hamilton attack the free-trade dogmas of Adam Smith. The lie that the American Revolution was fought for the ideas of Smith (and, therefore, those of Mandeville as well) is a most pernicious libel against the Founding Fathers and their commitment to the principle of the General Welfare—but unfortunately, it is one which still has some currency in certain quarters today.

Franklin and the General Welfare

Back to Benjamin Franklin. Franklin himself, who never questioned the link between moral virtue and economic greatness, avowed that Mather's *Essays To Do Good* was the book that had the greatest influence on him, and it is beyond question that the Franckean model of charity work and education was a powerful influence on Mather's *Essays*.

Truly, Franklin was the "American Leibniz"—who represents the very embodiment of the promotion of the concept of the General Welfare, *viz.*, his creation of the Junto in 1727 (a "club for mutual improvement"), his 1744 founding of the American Philosophical Society, his promotion of public works, etc., in Philadelphia.

Not surprisingly, Franklin was a promoter of Charity-Schools and had a deep interest in the education of Negro slaves. He opened a school for the education of and teaching of the Catechism to Blacks in 1760. Franklin was also a leading member of the S.P.C.K. in America (although the institution was very mixed), and he was a member of the governing board of Bray Associates—created by

Thomas Bray, a founder of the S.P.C.K. of Francke, Boehm, and Ludolf—which established a system of libraries in the English colonies, and promoted the Christian education of slaves.

Education and the Christianizing of slaves was violently opposed by most slaveowners and those of the John Locke "Life-Liberty-and-Property" persuasion. (Locke's Constitution for the Carolina colonies—in contrast to the 1787 Federal Constitution, ensured the primacy of private property, including slavery.) The terms of the opposition to converting slaves to Christianity, were remarkably similar to Mandeville's argument against educating poor children.

One study of slavery and conversion—which is sympathetic to these arguments—says: "Of great importance was the belief that religious instruction would impair their [slaves'] economic value." Many slaves were compelled to work on Sundays as on other days. "Another and more serious effect of conversion was the alleged change in the attitude and character of slaves. It was asserted that conversion developed notions of religious equality. . . . The notion was widespread that the converted negro became intractable and ungovernable, because of increased knowledge obtained through religious instruction."¹⁰

And, as I showed in my earlier article on the history of the "General Welfare" clause in the U.S. Constitution,¹¹ it was Franklin, the personification of the continuity from the Massachusetts Bay Colony through to the American Revolution, who provided the first draft for the 1775 Articles of Confederation, explicitly committing the "United Colonies" to the promotion of "their mutual and general Welfare," and also giving the Continental Congress the duty to legislate for the "General Welfare"—precisely that which Mandeville and Adam Smith railed against.

The American Republic was the first nation-state consciously created to promote the common good for all its citizens—in contrast to a Lockean oligarchical system, in which the government exists to perpetuate the power and wealth of a small stratum ruling over the majority of the population. The United States was the first sovereign nation-state dedicated to the principle that all men and women are created equal, in the image of God.

Whatever imperfections and compromises existed at the time of our republic's creation and thereafter, the very fact that the best minds of Europe, gathered in a trans-Atlantic commonwealth faction based on a Leibnizian conception of "Life, Liberty and Happiness"—and not "Property"—were able to wield their ecumenical commitment *to do good*, to create a commonwealth in the New World dedicated to that principle, is what continues to provide hope and inspiration for the world today.

Halle and the Muhlenbergs of Pennsylvania

The extraordinary Muhlenberg family exemplifies the role of Halle in the events leading into the American Revolution.

William Penn's agent James Logan, himself a correspondent of Leibniz, recruited Germans to emigrate to Pennsylvania via Leibniz networks in Germany, particularly through Francke at Halle. The German emigration to Pennsylvania in the early Eighteenth century, the Palatinate emigration organized by New York's Governor Hunter in 1709-10, and the German settlements in Virginia under Governor Spotswood, were all coordinated through Francke.

Other than the fact that Francke was a principal recruiter for Germans who went to America, the most important direct connection to the Pennsylvania German community—and indeed, for the entire German immigrant community the American colonies—was the Muhlenberg family.

To situate the Muhlenbergs, we must first refer to Conrad Weiser, James Logan's ambassador to, and chief negotiator with, the Indians, from the 1730's through the 1750's, whose life is a fascinating story in itself.^a Weiser came to America at the age of 14, in 1709, with the Palatinate Germans deployed by Queen Anne to Governor Hunter's New York. The Germans located first at Livingston Manor and then at Schoharie. Weiser's father sent him to live with the Mohawks at age 16, to learn their language. After the failure of the Schoharie project, the Weisers and others relocated to the Tulpehocken settlement in eastern Pennsylvania, located in the area between Reading and Lancaster, where Weiser lived for the rest of his life, amidst extensive travels (on foot and horseback), from Virginia to upper New York. Weiser regarded himself as a follower of Francke, and he always remained in correspondence with Francke and Francke's son Gotthilf August Francke (a correspondent of Cotton Mather's son Samuel).

Henry Melchior Muhlenberg was raised in Einbeck in the Electorate of Hanover, and was one of the first students at Göttingen University in 1735, where he studied Greek, Hebrew, and mathematics, among other subjects. He was already a proficient organist by this time. At Göttingen he met two "missionaries to the Jews," who convinced Muhlenberg to join them, but who first referred him to Halle for preparation. He left Göttingen for Halle

in 1738. At Halle, Muhlenberg did what most of the students there did—teaching in the Orphan-House, inspecting the sick wards, plus teaching Theology, Greek, and Hebrew to other students. He was first asked by the "Fathers at Halle" to go to India as a missionary.

In 1741 Gotthilf Francke presented Muhlenberg with a call to Pennsylvania, which had come through the Lutheran court chaplain in London, Friedrich Michael Ziegenhagen, the successor to Boehm.

Muhlenberg came to America in 1742, passing through Georgia and meeting with the Halle-trained pastors to the Salzburger. He located permanently near Philadelphia, whence he operated as a troubleshooter among the frontier churches—plagued as they were with itinerant impostors and factional tumults. His duties required continuous travel under the worst of conditions, something for which he was well-suited, his physical strength having been a factor in his assignment to America. Muhlenberg ministered for many years to the German Lutheran and Reformed congregations in Pennsylvania, Maryland, and the Shenandoah Valley of Virginia, and in New York.

In 1745, Muhlenberg married Conrad Weiser's daughter Anna Maria. A plaque commemorating this marriage—of importance to the coming American Revolution—may still be seen at Christ Church near Stouchberg, Pennsylvania, west of Womelsdorf—where the old Weiser Homestead can still be visited.^b

Many other important ministers in this period also came from Halle and Göttingen to New York, New Jersey, and Pennsylvania, and also to Georgia accompanying the Salzburger refugees. Among these were John Christopher Hartwick, who translated Abraham Kästner's comments on the work of the American scientist Cadwallader Colden [SEE "Leibniz to Franklin on 'Happiness,'" p. 44, this issue].

Muhlenberg's three sons were sent to Halle for their

b. The writer's ancestors in his maternal line, the family of Hans Juergen Loy (Loy), first settled in the Tulpehocken settlement near Stouchberg, after having arrived in Philadelphia from Germany in 1733; after a few years, part of the Loy family resettled near present-day Frederick, Maryland; it is documented that Hans Juergen Loy met Papa Muhlenberg when Muhlenberg came through Maryland in 1747 on a trouble shooting mission; at that time, Muhlenberg chartered the Evangelical Lutheran Church in Frederickstown, amid a raging controversy with the followers of Court Nicholas Zinzendorf, the Halle-trained leader of the "Moravians." As was his invariable custom, Muhlenberg reported back to the Fathers at Halle on his activity at Frederickstown.

a. See Paul Wallace, *Conrad Weiser: Friend of Colonist and Mohawk* (Philadelphia: University of Pennsylvania Press, 1950).

education in 1763, with Papa Muhlenberg specifying that, “I would desire them to be practised in singing, chorals, and thorough bass on the piano” The Halle of the second generation had already deteriorated, and ultimately, Muhlenberg was compelled to partly break with it, and to chart his own course in the New World. What forced the break was the treatment of his 16-year-old son Peter, who was unhappy in his studies, and was placed as an apprentice to a druggist in Lubeck, who cruelly exploited him. Peter finally ran away and signed up with a British “Hessian” military regiment, which was on its way to America. Four months later, after serving as “Secretary to the Regiment,” young Peter was back in Philadelphia, having acquired some military training—fortunately for the American Revolution, as we see below.

The three Muhlenberg sons were:

- **Peter Gabriel Muhlenberg.** He became a clergyman in the Shenandoah Valley of Virginia, and organized the German regiment in Virginia in January 1776. He is famed for throwing off his clerical garb after Sunday services, revealing the military uniform underneath. He rose

to the rank of Major General in Washington’s Continental Army, playing key roles at Brandywine, Germantown, Monmouth, and in the Southern Campaign that culminated at Yorktown. After the war he returned to Pennsylvania, was elected vice-president of the Commonwealth, and then served three terms in the U.S. Congress.

- **Henry August Muhlenberg** became a widely known botanist, and was often described as “the American Linnaeus.” He was a founder and president of Franklin College in Lancaster, Pennsylvania (originally established as a German college), and a member of the Göttingen and Berlin philosophical and scientific societies. The naturalist Alexander von Humboldt visited Henry in Lancaster in 1807.

- **Frederick Augustus Muhlenberg,** also a minister, became a member of the Continental Congress in 1779, and was the presiding officer of the Pennsylvania Constitutional Convention. A collaborator of Alexander Hamilton, he served four terms in the U.S. Congress, and was the first Speaker of the U.S. House of Representatives—a matter of some pride at Halle still today.



1. H. Graham Lowry, *How the Nation Was Won: America’s Untold Story. Vol. I: 1630-1754* (Washington, D.C.: Executive Intelligence Review, 1987).
2. In Gotha, during the latter part of the Seventeenth century, were the philologist Hiob Ludolf, (see *infra*), A.H. Francke, and Laurentius Blumentrost, the founder and first director of the Russian Academy of Science, who was later in contact with Halle.
3. Clearly, Halle was far different from the likes of its well-known professor, the “Leibniz-popularizer” Christian Wolff, who was actually thrown out of the University by the Pietists in the 1720’s, on account of his Enlightenment proclivities.

Among the scientists from Halle who participated in the scientific expeditions to the Far East, were Daniel Gottlieb Messerschmidt, educated at Halle, who made important discoveries in Siberia, and Georg Wilhelm Steller, who studied theology at Wittenberg and then Halle, and was certified in botany by the Berlin Academy of Science. Steller went to St. Petersburg, where he met Archbishop Feoton Prokovich, who was also in contact with Francke. Besides Vitus Bering, Steller was the most important scientist on the second Kamchatka expedition (1741-42), which went on to Alaska. Another American connection! (I am indebted to Karl-Michael Vitt of Dusseldorf for his insights on the Halle-Russia connection. Vitt is preparing an article on this subject for *Ibykus*, the magazine of the Schiller Institute in Germany.)

4. John T. Waterman, *Leibniz and Ludolf on Things Linguistic: Excerpts from Their Correspondence, 1688-1703* (Berkeley: University of California Press, 1978).
5. One could also note the case of another of Leibniz’s sponsors, Frederick III, the Elector of Brandenburg. Comparing him to his father, Frederick William (the “Great Elector”), one historian writes that Frederick III “had none of his father’s great qualities,” and continues: “Ostentatious and extravagant, he . . . devoted himself to the beautification of Berlin. . . . He founded the Berlin Academy of Sciences, the University of Halle, and also attracted a

number of learned men to his court.” Quite obviously the actions of a ruler with no great qualities!

6. Sources for this section include: Cotton Mather, *Diary of Cotton Mather* (Massachusetts Historical Society, 1911-12); *Pietas Hallensis* (London), Part I (1705), Part II (1707-08), Part III (1716); Kuno Francke, “Cotton Mather and August Hermann Francke,” *Harvard Studies and Notes in Philology and Literature*, Vol. V, 1896; Kuno Francke, “The Beginning of Cotton Mather’s Correspondence with August Hermann Francke,” *Philological Quarterly*, July 1926; Ernst Benz, “Pietist and Puritan Sources of Early Protestant World Missions (Cotton Mather and A.H. Francke),” *Church History*, Vol. XXII, 1951; Ernst Benz, “Ecumenical Relations between Boston Puritanism and German Pietism: Cotton Mather and August Hermann Francke,” *Harvard Theological Review*, July 1961.
7. Quotations are taken from Boehm’s 1716 translation, a microfilm of which is accessible at the U.S. Library of Congress in Washington.
8. When Benjamin Franklin visited Göttingen University in 1766, he met with John (Johann) D. Michaelis, a theologian and orientalist—undoubtedly related to those at Halle.
9. These same divisions later spilled over among German immigrants to the U.S. Midwest in the Nineteenth century. The more Orthodox Lutheran synods had little or no involvement in social welfare work, whereas it was church groups influenced by Franckean Pietism that first established orphanages and related institutions. This insight was provided by the author’s father, who has written a history of Lutheran social welfare. [Ruben Spannaus, *Love Never Fails* (unpublished, 1962).]
10. “Slavery and Conversion in the American Colonies,” *American Historical Review*, April 1916, available at <http://www.dinsdoc.com/jernegan-1.htm>.
11. Edward Spannaus, “What is the ‘General Welfare’?,” *New Federalist*, May 15, 2000 (Vol. XIV, No. 17); available at http://members.tripod.com/~american_almanac/welfare.htm.

Leibniz to Franklin On ‘Happiness’

by David Shavin

In 1766, ten years before the Declaration of Independence, Benjamin Franklin met and discussed, with the German scientific republican Rudolph Erich Raspe, the Leibnizian idea of forming a nation based upon “life, liberty, and the pursuit of happiness.” In 1765, Raspe had just edited and published the first edition ever of Leibniz’s suppressed manuscript, *New Essays on Human Understanding*, in which Leibniz had systematically torn apart the colonialist apology of John Locke’s *Essay Concerning Human Understanding*.

Locke had based man’s freedom upon the sanctity of property relations, a materialist and barbarian philosophy that Locke personally embedded in his authorship of the feudal, and pro-slavery, 1669 “Fundamental Constitutions for the Government of Carolina.” Leibniz, on the other hand, had asserted the characteristically human capacity for formulating ideas, as the key, causal element in fashioning human institutions.

In 1776, Franklin was the leader of the committee of five, which had Thomas Jefferson commit to paper: “We hold these truths to be self-evident: that all men are created equal; that they are endowed by their Creator with certain unalienable rights; that among these are life, liberty, and the pursuit of Happiness. That to secure these rights, Gov-



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Scientist and statesman Benjamin Franklin steered the trans-Atlantic conspiracy to found a republic based on Leibnizian “Happiness.”

ernments are instituted among men”

The Founding Fathers did not confuse “happiness” with pleasant entertainment, a “good time,” or material possessions. Happiness, or felicity, was and is the composition of the universe by the Cre-

ator, such that the physical, objective conditions of existence—life¹—are uniquely addressed and solved by the free exercise of man’s subjective, playful, agapic capacities—i.e., liberty. It would not be Leibniz’s “best of all possible worlds,” had the Creator flubbed it, and created a universe where the freedom of man was not uniquely necessary for life. “Life, liberty, and the pursuit of happiness,” is not a laundry list of rights. They are, and were for Benjamin Franklin, an encapsulization of Leibniz’s political philosophy.

How a bunch of *unhappy* ideologues ever managed to sucker Americans into hearing Leibniz’s “life, liberty, and the pursuit of happiness” as Locke’s actual laundry-list—“life, liberty, and property”—is a type of tale upon which civilizations have been won or lost. That Franklin actually met with the men who broke the tyranny of the suppression of Leibniz’s manuscripts, a tyranny run personally, for fifty years, by the Hanoverian Kings George I, George II, and George III of Great Britain, is a story that needs to be told. For, were a people to discover that they actually had a legitimate father, and an actual mission for human civilization, then, instead of acting like bastards, they might come to know happiness in the fulfillment of their world-historic mission.

I. Leibniz’s *New Essays* vs. John Locke

Leibniz had legitimate concerns over the mental health of England, both philosophical and theological. He would famously express these in the Leibniz-Clarke letters of 1715-1716—“Natural religion itself seems to be declining very much” in England—in which Clarke acted as stand-in for the man selected back in the 1680’s to counter Leibniz, Isaac Newton. Leibniz had successfully negotiated the Act of Settlement of 1701, which arranged for the court of his patroness, Sophie, Duchess of Hanover, to succeed to the throne of England.² A few years earlier, in 1690, John Locke’s *Essay Concerning Human Understanding* had epitomized the deliberately short-sighted and materialistic views of the faction that had taken power in England in the so-called “Glorious Revolution” of 1688/9. This “Venetian Party” in England established the Bank of England in 1694, and took aim at the republican institutions of America, such as the charter of the Massachusetts Bay Colony.

In Locke’s essay, the senses rule; what man can be sure of, is what he sees, hears, smells, tastes, or touches; and the mind can err only, if it does any more than passively process these impressions. Of course, any victim who cannot locate any better uses for his mind, might as well surrender his country and culture right then and there. Such a mind cannot carry out sustained deliberations over the proper development of culture, over the proper creation of credit, or over anything else that involves the species’ love for future generations—generations which, of course, cannot be seen, heard, smelled, tasted, or touched.

Initially, Leibniz communicated to Locke several pages of comments regarding his *Essay*.³ Locke, however,

desperately wished to avoid any open discussion of his ideological work, and, in private letters to William Molyneux beginning April 1697, offered only disparaging comments about Leibniz’s actions.⁴ After Leibniz had secured a beachhead in England, with the 1701 Act of Settlement, he turned his attention to a sustained treatment of the quality of thought threatening the English-speaking world.

Beginning in the summer of 1703, Leibniz used Locke’s conceits regarding the human mind, to compose a dialogue between himself (Theophilus) and Locke (Philaethes), over the issues of the human mind and human freedom. Working in-between many other projects, Leibniz substantially finished his *New Essays on Human Understanding* by the summer of 1704. Another of Leibniz’s projects at that time was the education of Princess Caroline of Ansbach, who was shortly to wed the Duchess Sophie’s grandson, the future King George II of England. This is the same Caroline, for whom Leibniz would engage in battle in the 1715-1716 Leibniz/Clarke letters. Her early, 1704-1705 education on Leibniz’s critique of Locke, would alter world history, as we happily shall discover. Leibniz indicated (in a letter to Locke’s patroness, Lady Masham) his intention to have these issues openly worked out. However, in November 1704, shortly after Leibniz had finished his revisions of the manuscript, Locke died. This particular avenue for dealing openly with the problems in England was put aside, and the *New Essays* remained unpublished in Leibniz’s lifetime. However, Sophie, the designated successor to England’s Queen Anne, and Caroline, the future Queen of England in 1727, were both students of the manuscript (as was, most likely, Sophie’s daughter, Queen Sophie Charlotte of Prussia).

Leibniz’s Strategic Triangle *Versus* the Venetians

In 1708, Locke’s faction published, posthumously, his bitter comments about Leibniz, who recognized this for what it was. When queried by a friendly diplomat about Locke’s remarks, Leibniz would only say, privately: “I am not surprised by it: we differed rather too much in principles.” The attacks upon Leibniz by the Venetian Party in England would grow ever more intense, the closer it came to the Hanover house taking over England. Most egregious were the 1711-1714 degradations of the Royal Society of London, where the “evidentiary hearings” and “findings” of their supposedly objective investigation into the work of both Leibniz and Newton on the development of the calculus, were largely run by Newton himself, who then secretly authored the “impartial”

report. (Perhaps, Newton thought this to be a better way to avoid an open confrontation with Leibniz over actual ideas, than the much more drastic course taken by his old friend, Locke.) Newton's behavior does, however, illustrate that ideologues who do protest overly much about their objectivity, are the first ones to be suspected of bias. This scientific show trial was the public side of a very intense, private campaign to keep Leibniz out of political power in England. The pressure was brought to bear on the weakest link of the Hanover house, Sophie's son, Georg Ludwig, soon to be King George I.⁵

From the 1701 Act of Settlement to the 1714 Hanover accession to the British throne, Leibniz was more and more at the center of European strategic confrontations. He was the declared "Solon" of Peter the Great of Russia, and he made bold inroads into attempting to civilize the Austro-Hungarian Empire—along with other operations in Berlin, Rome, Spain, and France. He came very close to healing European civilization of two centuries of Venetian-contrived brawls between Protestants and Catholics. An important part of this diplomacy is captured in Leibniz's universal justification to man of the ways of God, his *Theodicy*. While Newton spent the years 1711-1714, anonymously composing the public declarations of his superiority over Leibniz,⁶ Czar Peter had made Leibniz the "Russian Privy Counsellor of Justice" (1711); the new Austro-Hungarian Emperor, Charles VI, had agreed (February 1712) that Leibniz would become the Imperial Privy Counsellor; and (January 1713) the Emperor had had his new Imperial Privy Counsellor come to Vienna to develop an Austrian Society of Sciences. By June 1713, Leibniz could write to Sophie, the designated next Queen of England, about an alliance between an England under Sophie, and Russia and the Austro-Hungarian Empire, all managed by Leibniz!⁷

This was a potential strategic disaster for the Venetian Party in England. They have their Minister to Prussia, Mr. Bonet, undercut Leibniz in Berlin, spreading rumors that Leibniz is an anti-Prussian "Hanover spy." Simultaneously, the same Venetian Party attacks him in Hanover as too "Prussian." They rely upon Sophie's son, Georg Ludwig, to try to block the appointment of Leibniz as Imperial Privy Counsellor. Georg Ludwig sends his ambassador, one D.E. Huldeburg, to warn the Austro-Hungarian dowager Empress, Amalia, that she must make the Emperor heed his warning, that Leibniz was "not in the least a suitable person for the office." Howev-

Philosopher-scientist G.W. Leibniz (right) arranged for his protégé Sophie, Duchess of Hanover, to succeed to the English throne. When the House of Hanover took the throne after Sophie's death, Leibniz faced opposition from Venetian Party ideologues John Locke (below, right) and Isaac Newton (below, left). He battled the materialist philosophy of Locke in his "New Essays on Human Understanding," that of Newton in the "Leibniz-Clarke Correspondence."



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er, the Emperor went ahead and made Leibniz's appointment official. Since the warning was issued on the same day, Feb. 25, 1713, as the pronouncement of the Royal Society of London, that they had weighed the evidence, and found that Leibniz had cheated Newton, it tends to throw light upon both actions. The Venetian Party feared the same thing in both cases—Leibniz's method of thinking, whether it be physical analysis, or strategic statecraft. Leibniz's associate, Johann Bernoulli, reported the news to Leibniz, saying that "he was accused before a tribunal consisting of the participants and witnesses themselves," and that Bernoulli disliked "this hardly civilized way of doing things."

When, in August 1714, the Hanover house finally ascended the throne of England, Sophie had been dead for two months. Georg Ludwig, the new King George I, disposed of Leibniz, in a hardly civilized manner (in many ways, not too dissimilar from how his former wife was handled). Leibniz, the long-time chief Minister and strategist for Hanover, the man who organized the Hanoverian succession to the throne of England, would normally have been expected to take the lead in the new government in London. As John Ker wrote (Aug. 25,

1714) to Leibniz in Vienna: "It will be much for the King's Service, and the Happiness of Great Britain, that you instantly leave Vienna, and make Haste to Hanover . . . [Y]ou are fully entitled more than any Man in the World to be his chief Counsellor before he goes to England . . ."⁸ However, Georg Ludwig pulled out of Hanover three days before Leibniz arrived there from Vienna. Caroline, the new Princess of Wales, the future Queen in George II's reign, whose first studies with Leibniz had been during his composition of his *New Essays*, had Leibniz stay with her, planning to take him with her across the Channel. Over the next three months, Leibniz was given various excuses from the court in London, and then, in a letter from King George I's Prime Minister, von Bernstorff, he was explicitly instructed to stay away.

Meanwhile, Caroline could delay no longer, and had to go to London without Leibniz, setting the stage for the 1715-1716 battle for her soul and her happiness, represented in the Leibniz/Clarke letters. In a May 15, 1715 letter, Leibniz tried to explain to Caroline why she found the level of deliberation in London so mediocre. He wrote that Locke was less of a philosopher than he had once thought. The "good faith" that Leibniz had characteristically offered one and all, had been all used up by the Locke/Newton crowd. Caroline intervened on the situation, by choosing to have Leibniz's *Theodicy* translated into English and distributed. This work, which went quite deeply into unpacking the workings of the Creator in nature, in mankind, and in the soul, had done much to organize several European courts over the previous five years. However, in London, Caroline was told that the translation should be handled by the King's chaplain, one Samuel Clarke. And Clarke was (like his close associate, Newton) deeply anti-Trinitarian, and certainly not one who thought that men should inquire into how God does what He does. On behalf of Caroline, Leibniz examined Clarke's writings, whence come Leibniz's thoughts on the decline of religion in England:

Natural religion itself seems to be declining [in England] very much. Many will have human souls to be material: others make God himself a corporeal Being. Mr. Locke, and his followers, are uncertain, at least, whether the soul is not material, and naturally perishable. Sir Isaac Newton says, that space is an organ, which God makes us of to perceive things by. But if God stands in need of any organ to perceive things by, it will follow, that they do not depend altogether upon him, nor were produced by him. Sir Isaac

With the death of the Electress Sophie, Leibniz was banned from political leadership of the Hanoverian dynasty. Sophie's son Georg Ludwig (right) became King George I of England, her grandson, King George II (below, left). Leibniz's influence was felt through the Queen Consort of George II, Leibniz's student Caroline of Ansbach (below, right). Colonial America would organize the Revolution against Sophie's great-grandson, King George III.



Newton, and his followers, have also a very odd opinion concerning the work of God. According to their doctrine, God Almighty needs to wind up his watch from time to time: otherwise it would cease to move. He had not, it seems, sufficient foresight to make it a perpetual motion. . . . I hold, that when God works miracles, he does not do it in order to supply the wants of nature, but those of grace. Whoever thinks otherwise, must needs have a very mean notion of the wisdom and power of God.⁹

God did not create a universe that was so deficient as to require miracles in order to persist. God's miracles are acts of grace, not unlike his creation of the universe itself!

In May of 1716, Caroline reported to Leibniz that Clarke and (the Venetian superspy) Antonio Conti, the two sometimes accompanied by Isaac Newton, spent many hours together on her case, arguing to her on behalf of the void. Then, in Hanover on July 27, Leibniz actually met with King George I, and Caroline writes that she hopes her father-in-law will bring Leibniz back to London with him. Leibniz, meanwhile, writes the fifth of his six letters to Clarke, which included his doubt as to whether Clarke had ever bothered to read Leibniz's *Theodicy*, or had ever understood any of his philosophy.

At least, Caroline would now know that the assignment of Clarke to handle her project of publishing Leibniz in English, had not been made in “good faith”—and she could make her decisions accordingly.

Beginning September 1714, and for the last two years of his life, Leibniz was attacked from every quarter. His salary was stopped by Prussia, the first place that he had established a scientific Academy. The Austro-Hungarian Empire followed suit, by suspending his salary there. When Leibniz died in November 1716, the funeral was arranged for four weeks hence, time for proper ceremonies. Although King George was nearby, vacationing at his hunting lodge, he refused to attend; all the temporal powers, taking the hint, also stayed away.

Caroline’s ‘Göttingen University’ Project

However, King George I was, in fact, intensely interested in Leibniz—for he took possession of the *New Essays Concerning Human Understanding*, along with all of the vast amount of Leibniz’s private writings! Leibniz’s nephew, F.S. Loeffler, arrived two weeks before the funeral, but was not allowed to get his uncle’s writings. Three generations of Loefflers would be in a continuous lawsuit over Leibniz’s works. (It was never argued that the Leibniz heirs should get the works he composed for the House of Hanover, but only his private works.) For fifty years, Leibniz’s grave was unmarked, his works were suppressed, and his proponents were largely on the defensive. In fact, when Benjamin Franklin came to Germany in 1766, the lawsuit was still unsettled, and Leibniz’s works were officially under the control of King George III. The fight to free his works, and to free the American colonies, was one broad effort. And the story behind the 1765 publication of Leibniz’s *New Essays*, and Franklin’s 1766 meetings with Caroline’s associate, the Baron Gerlach Adolf von Münchhausen, and his collaborators Rudolph Erich Raspe and Abraham Kästner, is one that speaks to a deliberate and intentional offensive, that reached fruition with the 1776 Declaration of Independence and the 1781 victory at Yorktown.

After Caroline became Queen of England in 1727, one of her major initiatives was to create a new university. In 1734, the rector of Leipzig’s St. Thomas School, J.M. Gesner, was chosen to pull together a curriculum for the future Göttingen University. Of some note, Leipzig was a center for Leibniz’s supporters, and Gesner worked closely there with J.S. Bach (Gesner’s wife was godmother to one of Bach’s children).¹⁰ Most importantly, Caroline’s advisor for overseeing the creation of Göttingen, the Baron von Münchhausen, was the Royal Commission-

er who attended the 1737 inauguration of the University. After Caroline’s death, Münchhausen would play the key role in bringing back to life the *New Essays*.

II.

Scientists:

Leibniz, Kästner, Franklin

Abraham Kästner, Münchhausen’s collaborator, was a mathematician and scientist, the founder of “anti-Euclidean” geometry, who was the teacher of both Carl Friedrich Gauss and Gotthold Ephraim Lessing. Kästner grew up in Leipzig and attended the University there. In the 1740’s, he continued research and writing on Kepler and Leibniz at Leipzig. Two of his students there, the cousins, Christlob Mylius and Gotthold Lessing, joined Kästner in their defense of, and advocacy for, Leibniz. After Kästner and Mylius studied Franklin’s electrical experiments in 1752, Kästner would arrange for Mylius to go to America to visit Franklin.

Kästner, Mylius, and Lessing were involved in a major fight to defend Leibniz’s method, in the 1746-1748 period, when the Newtonian ideologues, Maupertuis and Voltaire, attempted to suppress the use of Leibniz’s notion of substance coherent with a living universe, the Leibnizian “monad.” It was at this time, that Kästner turned to the work of Franklin’s anti-Newtonian American collaborator, Cadwallader Colden, who had published a treatise in 1745, *Explication of the First Causes of Action in Matter, and the Cause of Gravitation*, which argued against Newton’s void, his empty space with mysterious actions occurring at a distance. Colden developed the notion of an elastic aether in his physics. Kästner studied the work, translated it into German, and provided a critical essay for its 1748 publication in Leipzig.¹¹

This work had occupied Colden’s thoughts since at least 1715, when he had visited London from Philadelphia, met with the astronomer Halley, and heard the controversies around Newton and Leibniz. Colden was never happy about the empty vacuum of Newtonian space, and attempted to describe the properties of non-visible, but very real, space. In 1718, he became a protégé of New York Governor Robert Hunter, who, in 1722, wrote Colden: “I am pleased with your former thoughts on ye Elasticity of ye air. I wish you would confirm them by Experiments.”¹² Colden and Franklin had access to James Logan’s thoughts and writings in the 1720’s and 1730’s, both on the Leibniz-Newton controversy, and on the superiority of an analysis of an “elastic aether” over the supposition of an empty void. Finally, Franklin



The Battle over Leibniz’s Scientific Method: Mathematician Abraham Kästner (left), the founder of “anti-Euclidean” geometry, studied Kepler and Leibniz in the 1740’s, and was the inspiration for the pro-American faction centered at Queen Caroline’s Göttingen University. Among his students were the dramatist Gotthold Lessing (below, left), the founder with Moses Mendelssohn of the German Classical period, and the scientist Carl Friedrich Gauss (below, center). Kästner translated the anti-Newtonian experimental works of the American Cadwallader Colden (right), a collaborator of Franklin and James Logan, into German.



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Meanwhile, the Berlin Academy of Sciences, founded by Leibniz, was taken over by the Venetian network of Voltaire, Maupertuis, and Algarotti, who launched a withchhunt against Leibniz’s ideas. Their leading spokesman was the mathematician Leonhard Euler (right).



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obtained the *Leibniz-Clarke Correspondence* for his Library Company of Philadelphia, no later than 1741, and was working with Colden by 1743.¹³

Colden’s 1745 treatise jarred the axioms in Philadelphia before reaching Kästner in Leipzig. In 1746, Franklin distributed Colden’s *Action in Matter*, to his Philadelphia network, a group that was closely following Franklin’s electrical experiments. However, Franklin had to report to Colden that everyone was having trouble comprehending the work fully. “Mr. Logan, from whom I expected most, when I desired his Opinion, said just the same [as the others]; only added, that the Doctrine of Gravity’s being the Effect of Elasticity was originally Bernouilli’s, but he believ’d you had not seen Bernouilli.” (The Bernoulli family of Swiss scientists were, by and large, collaborators and followers of Leibniz.) Not long afterward, in Leipzig, Kästner said that he was commanded to study Colden’s work, and “that the many new, good and just thoughts contain’d in it, made him willingly undertake the Task enjoin’d him.”¹⁴

By 1752, Franklin’s electrical experiments had caught the attention of Kästner and Mylius. In early 1752, Kästner’s German version of Colden’s book was sent to him in

New York. On May 20, 1752, Colden writes to Franklin:

I have received a Copy of the Translation of my first piece into High Dutch with Animadversions on it at the end of it printed at Hambourg and Leipsic 1748 but I do not understand one word of them. I find my name often in company with those of very great ones Newton, Leibnitz, and Wolfius[,] and Leibnitz’s Monades often mentioned [—] a New Doctrine which perhaps you have seen and is of great repute in Germany. The animadversions end—“Magnis tamen excidit ausis” which being in Latin I understand.”¹⁵

Evidently, Colden could pick out of the German, which he didn’t read, frequent references to Leibniz’s monads.

Franklin, saying that he knew a little German, offered to read Kästner’s essay on Colden’s work, but Colden had already arranged for a translator: “I have at last got the remarks on the First causes of Action in Matter well translated by Mr. Hartwick a Lutheran Minister who is well acquainted with the German systems of Philosophy.”¹⁶ It is quite possible that this J.C. Hartwick’s acquaintance with “the German systems of Philosophy” came directly from his study of Leibniz amongst Käst-

ner's circles in Leipzig and Göttingen. What is known is that Hartwick's sponsor, another Lutheran minister, the more famous Henry M. Muhlenberg, had himself studied at the University of Göttingen when it was first established, graduating in 1738 [SEE "Leibniz, Halle, and the American Revolution," page 33, this issue]. Hartwick graduated from Göttingen in 1739, and then studied with Muhlenberg for a period at the University of Halle. He owned works by two of Leibniz's collaborators, Christiaan Huyghens and Pierre Bayle.

Meanwhile, Kästner and Mylius had been working through Franklin's electrical experiments, including the idea that tiny sparks of static electricity were the same phenomenon as lightning bolts. Although Franklin's *Experiments and Observations* had been published in English in April 1751, it was not until the French publication of February 1752, that his lightning rod experiment was conducted for the first time.¹⁷ When the French King Louis XV read Franklin's work, and expressed interest in having the experiments described therein actually conducted, the Duc d'Ayen arranged for the Franklin experiments to be conducted on his estate, where they created a sensation. (This Duc d'Ayen, upon the death of his father in 1766, succeeded to the title of Duc de Noailles. He was to be the key pro-America figure in the French court at the time of the American Revolution, the sponsor of Beaumarchais and collaborator of Franklin. The Marquis de Lafayette would later marry the Duc de Noailles' grand-daughter Adrienne. Small world!)

Following this premiere, the lightning-rod experiment was repeated in Europe throughout the year. Mylius's letter on Franklin's work appears, along with other reports, in London's "Philosophical Transactions" (December 1752), which Franklin read soon thereafter. In 1753, Kästner arranged for the Leipzig scientific community to sponsor a trip to America for Mylius to meet with Franklin. However, he never arrived in America, having died along the way, during a stopover in London.

Franklin and Colden vs. Newton

What Kästner had in mind for Mylius in his discussions in America may not be known precisely. However, the poem that he composed for Mylius, along with the copy of Kepler's *Harmonici Mundi* that he gave Mylius for the trip, certainly suggest their side of the discussion. Kästner wrote that Kepler had written of the deeper coherency of the musical and astronomical forms, and that Mylius's "tender ear perceives" and his "deeper thoughts explore" these harmonies. Kästner thought of this underlying, Keplerian harmony—that of the subjective hearing of man, and of the creation and ordering of the solar sys-

tem—the way Leibniz thought of it, as the type of felicity, or happiness, that characterizes a loving God.

Some measure of the American side might also be taken from the discussions of Franklin and Colden at the time. In the same October 1752 letter, in which Colden secured Muehlenberg's friend to translate Kästner's remarks, Colden tells Franklin,

The remarks [16 pages by Kästner–DS] and Answer [3 pages by Colden–DS] are chiefly on the Metaphysical parts of my System. . . . I hope from your Friendship that you will give me your sentiments without reserve and I beg that you will take some pains because I have some distant prospect of being able to explain the phaenomena of Electricity from my Principles with your assistance. If this can be don I am perswaded that the greatest improvement will thereby be made in the most usefull parts of Physic. I conceive that Fermentations of all sorts arise from Electricity and that the life and vegetation of Animals and Vegetables arise from Fermentation. If so the knowlege of Electricity must give great light in Medecine and Agriculture. . . . I wish you would attempt some experiments to know whether the Electrical fluid can be drawn from fermenting liquors or Mixtures. I propose to try but what may fail with me may succeed with you, you have such sagacity in contriving proper experiments for any purpose you have in view.

Earlier in this letter, Colden had explained some of the problems with Newton. Along with the aether,

. . . some more perfect knowledge of the Air than we have is likewise necessary and the cause of the cohesion of the parts of bodies which last has been lately the subject of my Meditations. . . . Sir Isaac Newton accounts for the cohesion of the parts of bodies from the stronger attraction in little bodies than in great bodies but if this were the cause, the parts of bodies must run together into mutual contact if some other power do not keep them separated. What I call Aether is essentially different from . . . that Elastic fluid which I think produces Electrical phaenomena. Sir Isaac Newton was far from having clear conceptions of what I call Aether, though he perceived from the Phaenomena that some such medium must necessarily exist between the several bodies in the Universe and within them between their component parts.¹⁸

That winter, Franklin concluded a paper on whirlwinds and vortices in nature, with these remarks: "Here you have my Method of Accounting for the principal Phaenomena, which I submit to your candid Examination. If my Hypothesis is not the Truth itself, it is at least as naked: For I have not with some of our learned Moderns disguis'd my Nonsense in Greek, cloth'd it in Algebra, or adorn'd it with Fluxions." Evidently, this indictment of Newtonian fluxions was too strong for editors for the next 200 years, as the last sentence was simply omitted from all printed versions!¹⁹ Colden and Franklin

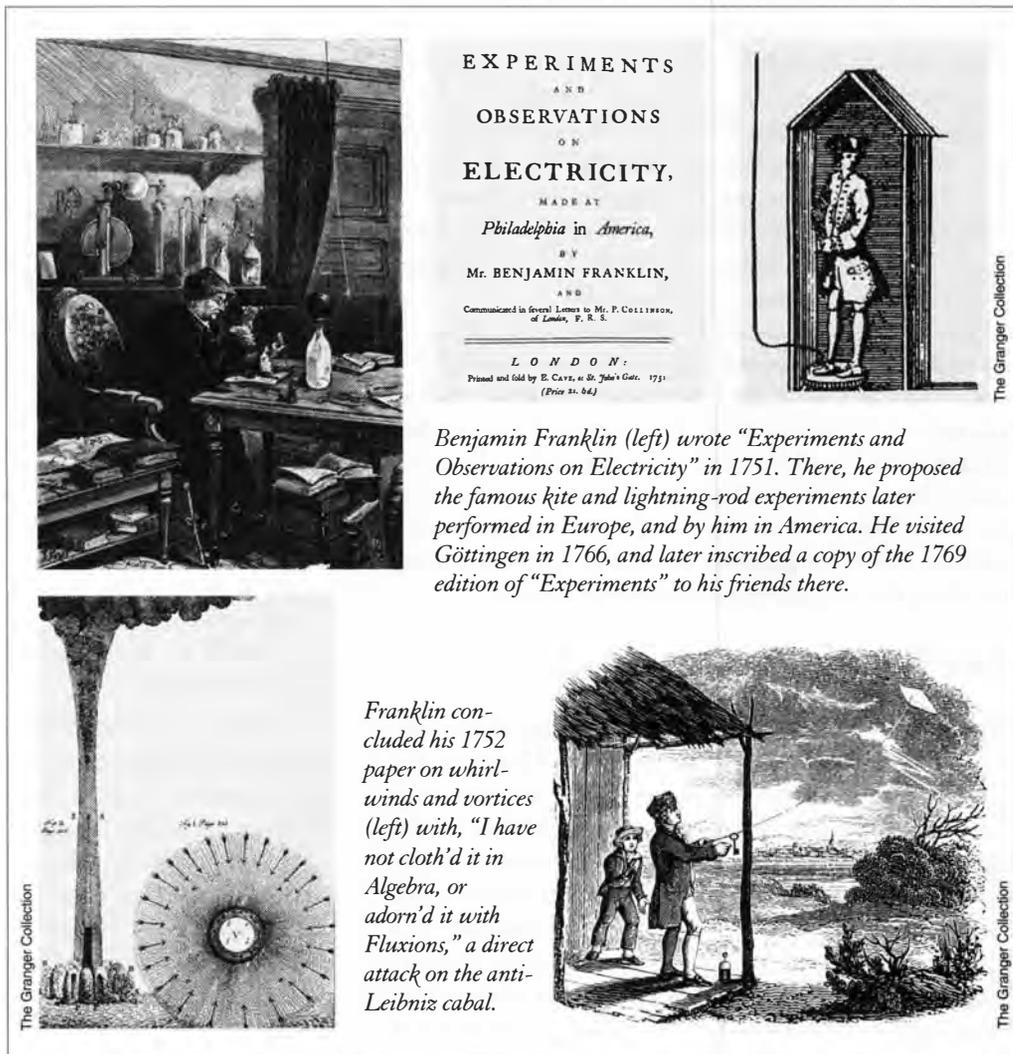
were at the peak of their investigations of the elastic aether, and prepared to free America of Newton's mind-constraining axioms, when Mylius was to arrive. Mylius had not only studied Franklin's experiments, but he had also worked under Kästner on a paper on the properties of the atmosphere, back in the period that Colden's work had been studied and published.

One of the same Newtonians that Kästner's group had to contend with, Leonhard Euler, was evidently quite concerned with Kästner's American dialogue. Euler had been a talented youth, trained by the Bernoullis, who later degraded himself by his attacks on Leibniz. He wrote that Colden's arguments were "destitute of all foundation. . . . [They were] attempts to attack the best Establish'd propositions of the late Sr. Isaac Newton" Euler's verdict, sent to London in November 1752, was meant to poison the environment there against Franklin's allies; and it speaks to the highly charged environment that Mylius walked into. Enemies of Kästner and of Franklin—that is, of Leibniz—may not have taken it as a casual matter, that Kästner was linking up with Franklin at this juncture. Colden, it seems, was capable of "analysis at a distance"—after reporting these matters to Franklin, he characterized Euler: "He writes much like a Pedant highly conceited of himself."²⁰

On Feb. 28, 1753, Franklin responded to Colden's request to edit his remarks back to Kästner: "I return you herewith Professor Kanster's Remarks. As far as I am able to judge, the Translation is just, and your Answer a good one. I am pleas'd with the Omission of that part of a Paragraph relating to the German and Pensilvanian Electricians, and have corrected the Copy as you direct." Otherwise, Franklin says

to Colden not to be too obsequious, as Kästner "himself freely says, 'that the many new, good and just Thoughts contain'd in it, made him willingly undertake the Task enjoin'd him.' " Franklin thinks it enough for Colden to say: "After all, Mr. Colden must think himself obliged to the Professor, for exposing the Difficulties his Treatise lies under in the Opinion of others, as thereby an Opportunity is given of explaining his Doctrine more fully to their Satisfaction."²¹

Franklin concludes: "We are preparing here to make accurate Observations on the approaching Transit of Mercury over the Sun. . . . I congratulate you on your Discovery of a new Motion in the Earth's Axis: You will, I see, render your Name immortal.²² I believe I have not before told you, that I have procur'd a Subscription here of £1500 to fit out a Vessel in Search of a N[orth]west Passage: she sails in a few Days, and is called the Argo, commanded by Mr. Swaine, who was in the last Expedition in the California, Author of a Journal of that Voyage



Benjamin Franklin (left) wrote "Experiments and Observations on Electricity" in 1751. There, he proposed the famous kite and lightning-rod experiments later performed in Europe, and by him in America. He visited Göttingen in 1766, and later inscribed a copy of the 1769 edition of "Experiments" to his friends there.

Franklin concluded his 1752 paper on whirlwinds and vortices (left) with, "I have not cloth'd it in Algebra, or adorn'd it with Fluxions," a direct attack on the anti-Leibniz cabal.

in two Volumes. We think the Attempt laudable, whatever may be the Success: if he fails, *Magnis tamen excidit ausis.*” Here, Franklin concludes with the same Latin quote Kästner used in his comments on Colden.

Thus, in brief, the collaboration of the Franklin and Kästner circles from 1745 to 1754 involved the following:

- The 1746-1748 deliberations in Philadelphia and Leipzig over the physics of an “elastic aether”;
- The 1749-1751 proposals from Franklin on experiments into the interaction of light moving through the aether, with both the static electric sparks and the lightning bolts being seemingly instantaneous actions, but actually analyzable for enhancing human powers;
- The 1752 proof of principle at the estate of the (future) Duc de Noailles, and the repetitions of the lightning-rod experiments by Mylius, then in Berlin; and
- The early 1754 trip by Mylius, attempting to establish a personal collaboration between Kästner in Leipzig and Franklin in Philadelphia.

A dozen years later, when Franklin finally met up with Kästner in Göttingen, he would be able to discuss the subjects that Mylius never could. However, in 1753-1754, Franklin was organizing an expedition to search for a Northwest Passage, and was about to launch the Albany Plan of Union, an early effort to unify the colonies. Mylius’s cousin, Lessing, showed great courage in defending Leibniz (and, indirectly, his cousin), against Euler’s group at the Berlin Academy of Science.²³ Kästner left Leipzig in 1756 to become a professor at Göttingen. His worked-out pedagogy from that period (the *Angangsgründe der Arithmetik und Geometrie, ebenen und sphärischen Trigonometrie und Perspektiv*) was obviously motivated by his new assignment in Göttingen. One of his earliest students there to benefit from his teaching would have been the young Rudolph Erich Raspe.

III. The Liberation of Leibniz’s *New Essays*

Rudolph Erich Raspe, born in 1737, the same year as the founding of Caroline’s Göttingen University, studied Leibniz’s works from 1755 to 1760 at Göttingen and Leipzig.²⁴ In 1757, he was probably inspired when Lessing visited Leipzig; for, although Raspe’s senior by only eight years, Lessing, along with his close collaborator Mendelssohn, had just outwitted and embarrassed the

organized anti-Leibniz cabal of Maupertuis and Euler that had taken over the Berlin Academy. The idea that the intellectual witchhunt against Leibniz could be beaten, was evidently a live and exciting prospect for Raspe. The lives of Raspe and Lessing would intersect over the next three decades.

Raspe began working with Kästner during this period, and from 1759 to 1762, they worked over many of the unpublished manuscripts of Leibniz, located in the Royal Library in Hanover. Münchhausen was probably the one responsible for placing Raspe in his first employment in 1760, working in the manuscript department of that same Royal Library. Raspe would travel the eighty miles between Hanover and Göttingen quite regularly, conveying his precious copies of the manuscripts to his associates.²⁵

The Hanover Court Councillor Jung, who, as the chief librarian at the Royal Library, had to account to (the new) King George III, was evidently rather nervous about these developments. When Raspe announced in the Leipzig *Nova Acta Eruditorum* in 1762, that there would be an edition of Leibniz’s philosophical and mathematical works never seen before, Jung would not allow it. It took pressure from Baron von Münchhausen to exact an arrangement, whereby Raspe could carry out the project, though with some sort of plausible deniability for Jung. Raspe would take the manuscripts home with him, to work on them there after hours, and Jung would keep official distance from the project. Münchhausen’s ability to maneuver inside the British Empire, and to crack open a little bit of the iron grip of the Venetian Party over Leibniz’s works, is perhaps to be compared to some of Franklin’s successes. The historic volume was published in 1765, and included six works, featuring (in Leibniz’s original French) the *Nouveaux Essais sur l’Entendement Humain*. Kästner’s Preface highlighted the scientific importance of Leibniz’s works [SEE Translation, p. 79, this issue].²⁶

The ‘Optimism’ Offensive of 1765-1767

The Raspe/Kästner 1765 publication of Leibniz can be said to have launched a cultural offensive “heard ’round the world”—a decade before the famous “shot heard ’round the world” reverberated from Concord and Lexington. Between 1765 and 1767, Leibniz’s followers engineered an amazing culture of optimism, centered around the first complete publication of Shakespeare in German, and Moses Mendelssohn’s *Phaedon*, a Leibnizian treatment of Plato’s “Phaedo” dialogue.²⁷ Wieland’s translation of the complete edition of Shakespeare’s plays, completed in 1766, brought a level of excitement, intellectual

challenge, and statecraft to the public stages of Germany—a new level of responsibility was being publicly articulated for a somewhat downtrodden population. Wieland’s publisher, Friedrich Nicolai, brought out Mendelssohn’s *Phaedon* the following year. Mendelssohn succeeded in engaging a tremendously expanded audience—until then largely devoid of Platonic philosophizing—with a Leibnizian treatment of mortality. Death became a subject that could deepen and strengthen how mortals composed their lives, should they take up the challenge of bending their mind and soul to the subject.

Benjamin Franklin stepped into the middle of this republican ferment on his trip to Germany in the summer of 1766. A fragment of a 1767 letter between two who would be Franklin’s best collaborators in France, highlights the republican spirit bursting out. Caron de Beaumarchais, who would be the catalyst for the French court in supporting the Americans with munitions and vital supplies, wrote to the Duc de Noailles, who would lead the pro-American faction amongst the old nobility of France:

I have loved [politics] with a passion. Readings, writings, travels, observations, I did everything I could for it. The powers’ respective rights, the pretensions of the princes which always upset the mass of mankind, the interaction of governments on one another, those were interests meant for the soul. More than anyone else, perhaps, I have felt crossed by my need to take a large view of things, while I am the least of men. I have sometimes felt like protesting, in my unjust humor, against fate which did not place me in a position more appropriate to what I felt I was suited for. Especially when I considered that the mission given by kings and ministers to their agents certainly do not impress on them, like the ancient apostleship, a sort of grace which would make enlightened and sublime men out of the puniest brains.²⁸

Franklin, the Stamp Act, and London’s Attack on Raspe

Franklin arrived in Germany, fresh from an historic victory before the Parliament in London, where his testimony (Feb. 13, 1766) was crucial in bringing down the imperial Stamp Act, authored by the former Prime Minister, George Grenville. Simultaneous with his testimony in Parliament, Franklin had published, in *The London Chronicle*, a letter from “Pacifcus,” advising the British: “If the Duke d’Alva had treated the people of the Netherlands with gentleness and humanity, they would never have revolted. Thank God, we have no Duke d’Alva in England.”²⁹ However, the actual “Duke of Alvas,” Grenville’s imperial faction in London, had thought that,

with the 1763 defeat of France in the Seven Years’ War (French and Indian War), they could put the stamp on a military power system, financed by tax-farming their colonies. Franklin inspired the less ideologically driven in Parliament, that it was not in their best interests to use their power in an imperial fashion. The Parliament voted to repeal the Stamp Act, and the colonies praised Franklin.

A matter of days before Franklin’s intervention into the Parliament, and in the midst of an intense showdown between Britain’s stated imperial policy and Franklin’s more mature pathway for handling the colonies, London’s *Monthly Review* launched an attack upon Raspe for his publication of Leibniz’s *New Essays*, censuring the work as being a harsh assault upon John Locke.³⁰ While the article probably did reflect the degree of anger coming from George III’s Privy Council, that someone had the audacity to publish that long-buried manuscript, it also was an ill-timed freakout. It very well might have put Franklin onto the track of Raspe, leading to his decision to visit Hanover that summer.³¹

Meanwhile, in Hanover that spring of 1766, Raspe composed poems called “Frühlingsgedanken” (“Thoughts of Spring”), occasioned by the marriage of his sister to Lessing’s friend, Herr Völger of Brunswick. The period of his discussions with Franklin also found him writing a play (*Hermin und Gunilde*) that was reviewed in the same issue of Nicolai’s literary journal, as Lessing’s book-length essay, *Laocoön*. Raspe was also translating another play (*Suleiman II*) into German, which was favorably reviewed in Lessing’s journal, *Dramaturgie*. Finally, Raspe had plunged into Shakespeare’s works, excited that he had found something comparable to Homer’s dramatic method. So, the Raspe with whom Franklin met, had been sponsored by Münchhausen, educated by Kästner and Lessing, and was a collaborator of Mendelssohn’s publisher, Nicolai. And, to put the point on it, the arch-enemy of both Lessing and Mendelssohn, J.G. Jacobi—a sort of Romantic fundamentalist—provided his measure of Raspe at this time: “What I disliked about him was the cocksure manner he had in company.” Clearly, Raspe had “American” written all over him!

Franklin Meets Raspe and Kästner

Franklin visited Raspe first in Hanover, accompanied by Sir John Pringle. Two days before his June 15, 1766 departure for Germany, Franklin informed his wife Deborah, “I purpose to leave him [Pringle] at Pymont, and visit some of the principal Cities nearest to it, and call for him again when the Time of our Return draws

nigh.”³² One infers from this, minimally, that (the newly titled) Sir John had given him the idea that he meant to accompany Franklin only to the spa at Pyrmont. (The much more aggressive inference would be that Franklin knew that Pringle intended to accompany him throughout Germany, and Franklin meant to abandon him at the spa!) It is to be suspected that Pringle accompanied Franklin not in full good faith. A decade later, Pringle would be at the center of King George III’s rage against Raspe.

After a fortnight at the spa in Pyrmont, Franklin arrived in Hanover on July 7, with Pringle alongside. He met with Raspe and Münchhausen over the next ten days or so. It is known that they took Franklin on at least one tour of the Royal Library (July 9), where the bulk of the Leibniz documents had been stored since King George I’s seizure of the documents exactly fifty years earlier. Among those vast documents lay a Socratic dialogue composed by Leibniz, titled “Pacidius to Philaethes.” (Leibniz would later use two of its four characters when he composed his *New Essays*—“Theophilus” as Leibniz, and “Philaethes” as Locke). The dialogue opens with a description that could have been that of the meeting of Franklin and Raspe—except that Leibniz had written the scene ninety years before. In the dialogue, Theophilus (the Franklin figure) is described as having been very successful and honored in business in the first part of his life, but had now

decided to dedicate the rest of his life to peace of mind and worship of the Divine. A man with a kind of inner sense of solid piety, he was consumed with the study of the common good [*communis boni*], on whose increase he had often



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Above: Franklin’s 1766 appearance before Parliament won a victory over the Stamp Act. **Below:** On the Continent, the political offensive continued with publication of “Phaedon” by Moses Mendelssohn (right) and of Leibniz’s “New Essays” by Kästner’s student, R.E. Raspe (center). In Paris, playwright Caron de Beaumarchais (left) prepared French support for the American cause.



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pinned his hope, and on which he had stinted neither wealth nor labor.³³

Pacidius (here, the Raspe figure) continues: “I had a close friendship with him, and enjoyed his company. At that time, by chance, we were having a long conversation about the State [Republica]”

How close Leibniz’s scene came to the actual event, we can only surmise. However, there can be no doubt that Leibniz’s contention with Locke over human nature, and human governance, was of intimate concern to both Raspe and Franklin. The subsequent developments leave no doubt about this. They must also have discussed the freakout in London over the publication of Leibniz’s *New Essays*, as they planned for Raspe to compose, and Franklin to get published, a rejoinder to the strenuous

defense of Locke in the London *Monthly Review*. Franklin, who read French, undoubtedly studied the text with Raspe, taking a copy of the Leibniz with him.

Before leaving Hanover, Franklin was shown the electrical apparatus of a Professor Hartmann. Münchhausen's letter, describing Franklin to their friends in Göttingen as being expert in "physical Economy and Agriculture," also gives some idea as to his impression of his discussions with Franklin.³⁴

Then Franklin reached Göttingen, and was able to meet with Kästner in person. Kästner had complained in the Preface to Leibniz's *New Essays*, about the need for English thinkers to read Leibniz's treatment of Locke, as the passive worship of Locke was cheapening thought. Franklin's arrival must have seemed a godsend. On July 19, Göttingen celebrated Franklin's visit there with an evening "Science Festival," including more electrical experimentation. Kästner had attempted a dialogue with Franklin thirteen years earlier, when he arranged for his collaborator on Franklin's electrical experiments, Mylius, to make his ill-fated trip to America. Now, Kästner had prepared a special paper on the nature of electricity, and it was presented as the highlight of the evening.³⁵

Franklin would remember this evening three years later, when he presented a copy of the new 1769 edition of his book, *Experiments and Observations on Electricity, made at Philadelphia in America*, with the inscription: "To the Royal Academy of Sciences at Göttingen as a small Token of his Respect and Duty, This Book is humbly presented by the Author."

Some of the discussions in Göttingen were reflected in Professor Gottfried Achenwall's publication, "Some Observations on North America from Oral Information by Dr. Franklin."³⁶ Achenwall and friends were interested in Franklin's 1751 "Observations concerning the Increase of Mankind," and the possibilities for the development of America. Franklin briefed them on the consequences of the recent British imperial attempt upon the colonies. Achenwall related:

[A]ll the colonies were of one mind, and so [in 1765] they decided on a general congress, to avert the storm. Such a congress of delegates from all the North American colonies had never been voluntarily called before, and the common decision not to accept the stamp taxes and to work for their repeal by united strength, was a significant agreement. . . . The general agreement of the colonies as shown in relation to the Stamp Act, is the more noteworthy, as the colonies have generally been jealous of one another. . . .³⁷

Achenwall was clearly struck by Franklin's emphasis upon the new political geometry, as a result of the imperial overstepping by Britain.

Otherwise, while in Göttingen, Franklin stayed at the home of Professor J.D. Michaelis, the publisher of the Leibniz-Ludolf correspondence on philology eleven years earlier.³⁸ Franklin's glass harmonica was performed upon by the mathematics professor A.L.F. Meister, which occasioned notice in the local papers. Other direct beneficiaries of Franklin's presence at Göttingen included the Danish minister, A.P.G. von Bernstorff, a collaborator of Moses Mendelssohn who would be involved in the League of Armed Neutrality; the natural law advocate and published champion of America, J.J. Möser, who would be jailed for five years by Duke Karl Eugen of Württemberg; and the student Christoph Daniel Ebeling, who would promote the cause of America his whole life, working with the likes of Lessing and Mathew Carey.³⁹

Franklin expended considerable effort to get as many as possible of the books that his Leibnizian friends in Hanover and Göttingen had recommended to him. He left funds for Raspe to purchase whatever books Franklin could not obtain first-hand on his trip through Germany. Although the list of books is not known, it seems certain that Franklin carried Raspe's historic edition of Leibniz with him.

Franklin and Pringle passed through Cassel, on their way to Frankfurt and Mainz; Trier and Cologne were visited on the return trip to London. Upon arriving in London, Franklin was intent upon consolidating the victory over the Stamp Act, by securing a policy of real economic development for America. A week after his mid-August return, he wrote to his son: "I can now only add, that I will endeavour to accomplish all that you and our friends [in the "Illinois Company"] desire relating to the settlement westward."

The Hardening of Enemies

Exploring the possibility of an intelligent alternative for England, Franklin met with Lord Shelburne about the internal development of America—and specifically, about a project to develop the rich area of Illinois. To his son, William, he wrote on September 27, that Shelburne had read William's "Illinois Company" plan. But Shelburne reported to Franklin:

[I]t did not quadrate with the sentiments of people here; . . . that their objections to it were, the distance, which would make it of little use to this country [Britain], as the expense on the carriage of goods would oblige the people to manufacture for themselves; that it would for the same reason be difficult both to defend it and to govern it; *that it might lay the foundation of a power in the heart of America*, which in time might be troublesome to the other colonies, and prejudicial to our government over them. . . .⁴⁰

Who were the “people here” with such entrenched imperial sentiments toward America? While Franklin had been in Germany, William Pitt had taken over the Prime Ministership for George III, as the previous (Rockingham) Ministry had manifestly failed to crack the colonists. The British leadership reacted to Franklin’s Stamp Act victory, as they had reacted to Leibniz, and to Raspe’s publication—by circling the wagons and getting nastier. Pitt’s policy toward the colonies, as summed up by Shelburne, had been articulated in a work called a “Plan for the West.”⁴¹ Its author, the 2nd Viscount Barrington, drafted it shortly after the repeal of the Stamp Act, and had since become War Secretary in the new Pitt government. It adequately conveyed the next stage of British policy toward the colonies. The British might have temporarily lost the Stamp Act battle; however, the colonies would be bottled up, and the financial looting would proceed, only temporarily delayed. Shelburne continued to play the “soft cop,” however, telling Franklin how much he approved of his plans—but, unfortunately, “they” (Pitt, Barrington, *et al.*) wouldn’t allow for the colonization of Illinois, or for the “foundation of a power in the heart of America.”⁴²

Through the winter of 1766/7, the Pitt government gave out that the colonies were the source of Britain’s problems, and had to be dealt with. Franklin’s “Reply to Coffee-House Orators,” published April 9, 1767 in *The London Chronicle*, sounded forth with an impressive voice:

Athens had her orators. They did her sometimes a great deal of good, at other times a great deal of harm; the latter particularly when they prevailed in advising the Sicilian war, under the burthen and losses of which war that flourishing state sunk, and never again recovered itself.⁴³ To the haranguers of the populace among the ancients, succeed among the moderns [—] your writers of political pamphlets and news-papers, and your coffee-house talkers.

It is remarkable that soldiers by profession, men truly and unquestionably brave, seldom advise war but in cases of extream necessity. While mere rhetoricians, tongue-pads and scribes, timid by nature, or from their little bodily exercise deficient in those spirits that give real courage, are ever bawling for war on the most trifling occasions, and seem the most blood-thirsty of mankind . . .

Every step is now taking to enrage us against America. Pamphlets and news-papers flie about, and coffee-houses ring with lying reports of its being in rebellion. Force is call’d for. Fleets and troops should be sent. . . . The principal people should be brought here and hang’d, &c . . .

[W]hen the wolf is determined on a quarrel with the lamb, up stream or down stream ’tis all one; pretences are easily found or made, reason and justice are out of the question.⁴⁴

Franklin’s very public intervention, besides being a

timely message for any modern country that would ape British imperial methods, makes clear his judgment at the time, of the unravelling situation since his return from Germany.

The newly hardened policy in London can also be seen in the treatment given to a new essay by Raspe on the Leibniz/Locke dispute. On Sept. 9, 1766, Franklin first wrote to Raspe after returning from his Hanover visit: “I received your obliging Favour of Augt. 28. with the Paper enclos’d for the Monthly Review, which I shall communicate to the Managers of that Work, and imagine I shall prevail with them to do you better Justice.”⁴⁵ This is the work that Franklin and Raspe had discussed that summer to counter the January 1766 attack on Raspe, when they had agreed for Raspe to write a follow-up for Franklin to use. However, Franklin was not able to achieve a “better Justice,” running into the same problems as with the Illinois project. A decision that fall by those who controlled the *Monthly Review*, consigned Raspe’s paper to the waste bin, and the work has never been located since.

The January 1767 *Monthly Review* did note the fact that Raspe *had* made a reply to their attack. As the editor of *The Papers of Benjamin Franklin*, Leonard W. Labaree, relates it, they published a cryptic comment, “acknowledging Raspe’s communication, expressing regret at his displeasure, and stating that the passages that had displeased him had not referred to his publication ‘but to another work, the natural produce of our own country.’”⁴⁶ This transparent nonsense could not have been meant to be taken seriously. It had been their review of Raspe’s publication of Leibniz, that had occasioned their uproar over a public challenge of Locke. Undoubtedly, there was also some “natural produce” in London working with Raspe and Franklin; but, regardless, the gatekeepers of public discussion in London were making clear that there would be no more systematic treatment of Locke or his philosophy. The mention of the name, “Leibniz”—(the “L” [“LaRouche”] -word of the Eighteenth century)—in England, was clearly bad form. Publishing the *New Essays* in the original French had already gone over the line. Meeting and strategizing with the American hero of the Stamp Act battle, was past the point of no return. The score with Raspe would be settled later, and by other methods. Of course, Raspe’s follow-up letters to the *Monthly Review* would also not be worthy of publication or comment.

What was so important about Franklin’s extended stay with Raspe in Hanover? And why would the British imperialist faction display such an obsessive, feral instinct against the meeting, and the unleashing of Leibniz’s ideas? The defeat of their deeply rooted commitment to

greed and backwardness, would require a certain quality of mind and morality—one capable of rooting out the enslavement to the Lockean “sense-certainty” axioms, that is, to the “animal” quality in humans. The ten days, or so, that Franklin spent in and around Leibniz’s works, in discussions with Raspe and Münchhausen, were unique. The profound enrichment that can only come about from the systematic examination of the axiomatics of one’s thinking, both the strengths and the fracture points, is the type of work necessary for forging the leadership of so singular an accomplishment as the creation of that “Beacon of Hope and Temple of Liberty,” the sovereign United States of America.⁴⁷

Locke represented the mental infection of enlightened greed. Many arguments in the colonies, in the period from the 1764 Stamp Act to the Congressional debates of 1774, did indeed largely function within the constraints of Locke’s axiomatics—as Locke had designed them to do. For example, Jefferson was still employing the formulation “life, liberty, and property” as of the 1774 debates. The fear of breaking from the power of the British Empire, and of assuming “among the Powers of the earth, the separate and equal station to which the Laws of Nature and of Nature’s God entitle them,” did much to constrain argumentation in that period. Many of the appeals were intended to adjust British policy towards a more enlightened self-interest on the part of the colonial administrator.

The “pursuit of happiness” coup was inextricably linked to Franklin’s personal intervention upon his return to Philadelphia in the spring of 1775. The different attacks upon Franklin and Raspe from 1766-1775, not only indicate the focus of the rage of the Venetian Party in England, but also the unique forging of Franklin’s metal. The rage was centered around the breakout of the dreaded “Leibniz” factor. By way of contrast, Cadwallader Colden did not make it through these years, parting ways with Franklin, and ending up a Royalist. Who knows how he might have developed, if he had had the extensive deliberations with Kästner’s representative, Mylius, offered Franklin back in 1754?

IV.

The Later Career of Rudolph Erich Raspe

Raspe’s metal was also forged in this period, and his travails would intersect those of Franklin. The following detour through some episodes of his life, is intended to provide an example of what it meant to have assimilated

Leibniz’s philosophy of “optimism”—to look at the actual evils of the world, and to know one is capable of mastering them. Other graduates of the republican “cultural offensive” of 1765-67—including such luminaries as Moses Mendelssohn, Gotthold Lessing, the Duc de Noailles, Caron de Beaumarchais, Ignaz von Born, and Wolfgang Mozart—would overshadow Raspe; but his story is more than enough to make the point, and long overdue.

Raspe’s career, following his historic edition of Leibniz and his meetings with Franklin, was most colorful, being practically a roadmap of a pro-American scientist in Europe during the tumultuous 1766-1791 period.⁴⁸ Within a couple of months of their Hanover meeting, he provided the books to Franklin, who had agreed to provide Raspe with seeds from America, a Mohawk grammar, and a copy of the “Pensilvania Laws.” Franklin also provided him an introduction to some of his scientific associates in England, giving Raspe’s book on geology and minerals to one, his sampling of fossils to another. Franklin’s scientific networks in England, several of whom constituted the Lunar Society, would be critical in providing support for Raspe later, when he became a fugitive from the oligarchs. [SEE “Franklin’s ‘Lunar Society’ and the Industrial Revolution,” p. 74, this issue.]

Responding to Raspe’s interest in working with him in England or America, Franklin sent him a “Map of the British Northern Colonies.” Writing three weeks before his late-September 1766 meeting with Shelburne on the future of the colonies, Franklin was still optimistic about the treatment of Raspe in Hanover:

It would be a great Pleasure to me to see you here or in America, or in any Place where I could see you happy; but I would not have you hasty in Resolutions of Removing. Merit like yours continually increasing by fresh Acquisitions of useful Knowledge, cannot much longer remain unnotic’d and without due Encouragement where you are. . . . Be so kind as to present my respectful Compliments to the good Baron Munichausen, and assure him that I have the most grateful remembrance of the Civilities I receiv’d from his Excellency at Hanover, and thro’ his Recommendation at Göttingen. . . . I never think of the Time I spent so agreeably at Hanover, without wishing it could have been longer. Remember me also affectionately to the Professors at Göttingen, whose Learning and Politeness impress’d me with the highest Esteem for them: I wish every kind of Prosperity to them and their University.⁴⁹

Raspe chose to continue his work in Hanover and Cassel. Next, he was engaged by another of Franklin’s admirers in Hanover, General Count von Walmoden (the illegitimate son of King George II), who desired that

Raspe organize his collections into a pedagogical museum for the general public. Raspe made sure that the collection included one of Franklin's glass harmonicas. Raspe's "public education" mode of organizing the collections impressed Walmoden, who in 1767 recommended him to Frederick, the Landgrave of Hesse-Cassel, to be the curator of his antiquities. This post included holding the Chair of Antiquity at the famous Collegium Carolinum.

Ominously, Lessing had just turned down the same post, thinking that the terms were "fetters"—and he was more than a little suspicious of the Landgrave. Raspe, however, accepted the position, seeing the opportunity to fight for "a true liberal Education" program, against what he called the "scolastic pedantry or French dam'ed Gallantry." Lessing's well-grounded suspicions were due to his appraisal of the Landgrave Frederick, whose initial claim to fame was tied up in his marriage to Mary, daughter of the deceased Queen Caroline. Frederick suffered from the "French" tastes of the period, however—tastes which included an extravagance for grand entertainments, à la Versailles, and a callousness toward his wife. His preferred method of dealing with the resulting debts incurred, was to rent out his subjects as mercenaries. He would soon become famous as the biggest supplier of cannon fodder, that is, Hessian mercenaries, for the British Empire's attempted suppression of the American Revolution.

The republican cultural offensive of 1765-1767 was targeted by an alliance of holy feudalists and cynical Enlightenment types. By late 1766, it had been decided in London, that the long-delayed treatment of Locke by Leibniz, would not be approved or allowed. The unsuccessful efforts of Franklin and Raspe with the *Monthly Review*, were a marker for this policy. In Germany, the attack upon Raspe, already initiated by the Romantic fundamentalist, J.G. Jacobi, was joined by a dutiful fun-



Both England's George III (left) and his relative Frederick II, Landgrave of Hesse-Cassel (right), moved to contain Raspe's activities. Frederick would later supply most of the Hessian mercenaries for Britain during the Revolution. Below: The December 1773 Boston Tea Party: The oligarchy's response threatened Franklin in England.



damentalist, C.A. Klotz. In attacking Nicolai's promotion of Lessing's *Laocoön* and of Raspe's work, Klotz attempted to inveigle Lessing and Raspe (along with Heyne) into prolonged and complicated literary wars.

By the spring of 1769, Raspe had wholly reorganized the vast museum of the Landgrave, but Frederick took offense at Raspe's name appearing in parts of the collection's catalogue. Clearly, Frederick assumed that his servants were his servants, and intellectual accomplishments could be transferred to him as easily as his subjects' bodies could be rented out as mercenaries. It is from this period that Raspe is said to have begun to experience financial problems, and to incur debts to loan-sharks. This was a situation that the Landgrave could, and did, exploit.⁵⁰

Raspe stayed on in an increasingly difficult situation. For the first half of 1772, he worked with Jacob Mauvillon, another "American" republican, in starting up a local paper, the *Cassel Spectator*, which lasted only six months. Mauvillon was the Professor of the Art of Fortification

Construction in Cassel. (Later, in 1776, when an anti-American tract appeared, Mauvillon attacked the tract's author, accusing him of writing propaganda for the British Lord North, in return for fifty guineas.) During this last period in Cassel, Raspe listed his credentials as: "Fellow of Royal Society, of Dutch Society of Sciences, of German and Historical Institutes at Göttingen; Corresponding member of Göttingen Philosophical Society; Managing Secretary of the New Cassel Society for Agriculture and the Useful Arts."

In January 1774, Raspe's co-conspirator Franklin was called before the British Privy Council to be humiliated as a thief and a terrorist. By 1773, the British had made their India Tea Company the leading edge in enforcing a colonial trading policy. Franklin was on the receiving end of the hardline faction in London, who had been amazed by the audacity of the Sons of Liberty, in dumping the tea into the Boston harbor. Throughout 1774, his last year in England, Franklin's position was compromised, and he was liable to arrest from standing charges before the Court of Chancery. By the fall of 1774, developments among the "American" faction intensified throughout Europe, in conjunction with the substantial developments with the Congress in Philadelphia. A principled fight against Britain's increasingly imperial policy could no longer be averted.

Coincident with the attacks upon Franklin, in September 1774, the Landgrave Frederick ordered Raspe to go to Venice, to promote his trading company, the Carlshafen Company, to the Venetians. Raspe departed Cassel, but instead headed to Berlin and met with Frederick the Great!⁵¹ While it is almost certain that Raspe would have objected, on its merits, to the Landgrave turning so openly to Venice, his actions can only be unravelled in the context of the impending revolution. But, in the written records and accounts of this period of Raspe's life, most of the strategic political developments have been buried under the financial charges made against him, charges that he was in debt to usurers and that he stole from the Landgrave's collection.⁵²

In March 1775, the Landgrave issued an arrest warrant against Raspe. The timing completely coheres with the actions against Franklin. Throughout that winter, while Franklin was facing charges in London, Lords Howe and Chatham (that is, Pitt), tried to engage Franklin in "backchannel" negotiations, to avoid the conflict with the colonies. However, in February 1775, the hardline faction had convinced George III to go for total confrontation.⁵³ Franklin departs Britain in March, rather than wait to be arrested. In both Cassel and London, the sword had been held over the heads of Raspe and Franklin all winter, and then dropped in February and March.

Raspe, then, requests asylum from Frederick the Great in Berlin, and is refused. By April, around the time of the battles of Concord and Lexington, he escapes his detention and flees to Holland, making his way to England and to Franklin's networks there. Sir John Pringle, now the head of London's Royal Society, reports Raspe to the Landgrave's representative, who is in London negotiating with the British for mercenaries. Pringle's report also indicates that Raspe is being supported by Franklin's Lunar Society friends. Given the revolutionary developments, Pringle had to prove himself to the Crown, regardless of whether he had been in his dealings with Franklin, a witting, but incompetent Royal agent, or an unwitting participant.

On Dec. 7, 1775, Pringle hastily convened a special private meeting of the Royal Society, where Raspe was expelled from membership—evidently, the only time a member was expelled, explicitly and solely for reasons of "character"! Raspe's biographer explains that, "Some of the Fellows understood that His Majesty himself had had a hand in the day's business . . ." ⁵⁴ Raspe's next move displayed some of that impertinent "character": He proposed that the Royal Society's printer publish his next work, titled *Unphilosophical Transactions of the British Savants!* He was turned down. Evidently, although he may not have had the sort of character desired by the Royal Society, he certainly was one. Meanwhile, Raspe's ally Franklin was back in America, in much happier deliberations. There, he writes to his agent, Charles Dumas, that the Congress' discussions in Philadelphia have benefitted greatly from a work by another Leibniz follower, Emmerich de Vattel's *Law of Nations*.⁵⁵ Vattel's text is an extensive development of the conception of happiness as the purpose of the nation.

Raspe claimed that his extradition back to Cassel had actually been demanded as a condition of the February 1776 agreement for the use of Hessian mercenaries to fight the British war. The Landgrave had driven a hard bargain, obtaining extra payments for any of his rented soldiers who were killed, and, hence, not returned. The Landgrave bragged to Voltaire about his concern for his subjects in this arrangement. Frederick the Great, who could be as calculating as anyone, said of the Landgrave's arrangement: "The sordid passion for gain is the only motive for his vile procedure!" In 1777, Franklin would fabricate a public letter, basing it upon the Landgrave's contract with Britain. In typical Franklin-esque fashion, the letter purports to come from a German prince, sent to the commander of his mercenaries in America, where he disputes the British casualty count. He claims that more had been killed and wounded; hence, he was to get more "blood money." He further suggests that his com-

mander allow the wounded to die, as the prince didn't need cripples to return home. Instead, he could use the money, as he had contracted debts in Italy . . . and, besides, he wanted a fancier opera production that season! Franklin's literary creation contributed substantially to European deliberations for support of the American Revolution.⁵⁶

Raspe and the European Republicans

With war having been declared, England evidently now had a sudden requirement for some competency among its scientists. Pringle was pushed aside for a new head of the Royal Society, Sir Joseph Banks, who had been the lead scientist for Captain Cook's 1769-71 circumnavigation of the globe. And Raspe, although expelled from the Royal Society, was not extradited to Cassel. Instead, he was hired, in a wartime economy, to translate German treatises on geology and mineralogy—matters of some importance for building up a country for war or for peace. His major translation was that of the correspondence on mineralogy, between his friend J.J. Ferber and the notable mineralogist/geologist, Ignaz von Born.⁵⁷ (A decade later, Raspe would put out a translation of Born's book on metallurgy.) Raspe's preface to the correspondence pointed out the importance of mineralogy for industry: "Let us think of Messrs. Wedgwood and Bentley's, or other china manufactories; of the metallic furnaces, and that infinite number of possible combinations." Raspe's work for the rest of his life was centered around England's Lunar Society scientists and industrialists, including Josiah Wedgwood, Thomas Arkwright, James Watt, Erasmus Darwin, Joseph Priestley, and, in particular, Matthew Boulton, the manufacturer of steam engines. However, before covering the story of Raspe's extensive work with Boulton, two remaining issues need to be reported, the first of which was the intense hostility against Raspe for his role in liberating Leibniz's writings.

In 1778, when Raspe had ventured a modest jab at the Landgrave, in the footnotes of a work, the Landgrave was provoked to issue a major attack on the fugitive in the *Heidesheimer Korrespondenz*. Raspe was called a coward, a lecher, a writer of worthless books, one who accepts bribes from foreign powers, and, in particular, the betrayer of the Landgrave to Frederick the Great. Whatever else this last charge might have meant—and given Raspe's contact with the King, there may be truth to it—it seems clear that the Landgrave was doing something of strategic significance in the fall of 1774, which he had to hide from Frederick. Hence, any action that the Landgrave took toward Raspe at that point, would have to be examined from the standpoint of Raspe's ongoing strate-

gic significance against those who controlled the mercenary-supplying Landgrave.

This same over-sensitivity to Raspe was evidenced in the 1779-1780 period, when he was championed by some of the anti-war faction in English politics, drawing King George III directly into the fray. In 1779, two individuals, Robert Hinchliffe (promoted by the Whigs against Lord North's government) and Dr. Michael Lort (Regius Professor of Greek at Cambridge), attempted to have Raspe deliver lectures at Cambridge. The lectures were to be on the history of the useful arts, and on the progress of science from Roger Bacon to the present. One Reverend William Cole, an informant to the King and Walpole, then named the two, Hinchliffe and Lort, as "Republicans" in revolt against the King. Cole suggested to Walpole that he had it on authority, that King George III himself was behind the freezing out of Raspe. The Raspe lectures were prohibited. Indeed, the subject of Raspe continued to be a sensitive matter for both King George III and the Landgrave Frederick, and intensely so for at least the period of the American Revolution.

The other issue concerns the depth and breadth of Raspe's concerns, stamping him in the tradition of the new "American" type of men, notably, Franklin and Beaumarchais (and characterized by Beaumarchais' famous literary character, Figaro). These men were aristocrats, not of bloodlines, but of intellect, morality, action and daring. A few examples suffice here. First, immediately following Britain's defeat at Yorktown, Raspe launched a cultural offensive in England. His translation of Lessing's *Nathan the Wise*, in late 1781, introduced the work to English readers not long after Lessing had finished it.⁵⁸ Not surprisingly, British authorities did not take kindly to the play's ecumenical message, gentle humor, and pointed dramatization of the evils arising from those trapped in the fixed axioms of feudalism and bloodlines. The *Monthly Review*—the same crowd that weighed in against Raspe and Leibniz back in 1766—called the work "unworthy of notice"; while the *Critical Review* called it "a heap of unintelligible jargon . . . infinitely beneath all criticism . . ."

Having published the Lessing translation, Raspe kept on the offensive, plunging forward. He placed his next proposal as an advertisement, in a November 1781 edition of that same *Monthly Review* magazine: "Proposals for a literary excursion to Egypt, for the purpose of collecting and decyphering its numerous hieroglyphical monuments, and of recovering the remaining Annals of that justly celebrated country, under the conduct of R.E. Raspe." Although there were no takers, a generation later, the historic decipherment of the Rosetta Stone's hieroglyphics was accomplished by France's François Cham-

pollion.⁵⁹ The study of Egypt's contribution to universal history would be popularized by Friedrich Schiller in his lecture, "The Mission of Moses."

The Adventures of Baron von Münchhausen

Finally, in 1785, Raspe dashed off the one work for which he has any notoriety today, a short collection called *The Adventures of Baron von Münchhausen*. Years earlier, Raspe had heard Hieronymus von Münchhausen, the nephew of Raspe's political collaborator, Gerlach Adolf von Münchhausen, spin wild tales of his youth, fighting for the Russians against the Turks in the 1730's. Evidently, Hieronymus would lead the listener on with greatly exaggerated, and patently nonsensical, yarns—told with a straight face. Raspe's decision, in 1785, to publish his version, was almost undoubtedly part of an intervention against the Venetian-sponsored (and British-supported) insanity, propelling Russia, and their ally Austria, again into a disastrous war against the Turks.

The Venetian/British policy, during the American Revolution, importantly included the attempt to change the subject, by setting the European powers against each other. For example, the 1778 War of the Bavarian Succession, between Prussia and Austria, was meant to draw France into such wasteful distractions. The push for this policy intensified with Russia's involvement in forming the League of Armed Neutrality in 1780, and the American and French victory in 1781. Major pressure was exerted upon Russia, and Catherine the Great, to induce them to plunge into warfare against the Turks.

Much effort was made to defeat these Venetian tricks. Raspe's colleague, Ignaz von Born, and his collaborator Wolfgang Mozart, had weighed in heavily, and successfully, in Joseph II's Vienna in June 1782, publicly ridiculing the Venetian/Russian attempts to whip up Austria against the Turks, with the staging of Mozart's new ecumenical opera, *The Abduction from the Seraglio*.⁶⁰ Raspe's little 1785 work was unexpectedly quite popular, going through many editions before the trap finally snapped upon Austria's Joseph II in 1788, and the Turkish war destroyed him. There were, in short order, many editions, several English, two German, one French, and even one from Boston, Massachusetts.⁶¹ Raspe had dashed off this work of fiction while attending to his obligations at Matthew Boulton's machine works.

Raspe and the Lunar Society

When Franklin and Raspe first met back in 1766, Franklin had been involved in discussions with Matthew Boulton over the development of his steam engine. The

year before, Franklin had brought Dr. William Small to Boulton, and Small worked as the industrial manager of Boulton's manufacturing plant.⁶² Then, on Feb. 22, 1766, the same day the Parliament repealed the Stamp Act, Boulton wrote to Franklin about the steam engine that he and Small had crafted:

The addition you have made to my happiness in being the cause of my acquaintance with the amiable and ingenious Dr. Small deserves more than thanks. . . . Query,—which of the steam valves do you like best? Is it better to introduce the jet of cold water at the bottom of the receiver . . . or at the top? Each has its advantages and disadvantages. My thoughts about the secondary or mechanical contrivances of the engine are too numerous to trouble you with in this letter, and yet I have not been lucky enough to hit upon any that are objectionless . . . [I]f any thought occurs to your fertile genius which you think may be useful, or preserve me from error in the execution of this engine, you'll be so kind as to communicate it to me.⁶³

In 1774, the partnership of Small, Boulton & Watt, was established, and they had a steam engine working that year. By 1777, Boulton's steam engines began to be a significant factor in the pumping of water out of Britain's tin and copper mines—vital for the development of mining and, hence, industry. Boulton knew that he was not simply developing a product line, but was revolutionizing how production would be carried out. When asked what he sold, he would utter his famous line: "I sell here, Sir, what all the world desires to have—POWER."

Raspe worked directly with Boulton for the last dozen years of his life, beginning no later than November 1782. However, it is hard to believe, given their common associates around Franklin and his Lunar Society friends, that they had not been in collaboration earlier than this. One day in 1779, for example, when Raspe was examining mummies in the Egyptian section of the British Museum, Boulton was next door in the Greek section, sketching ancient Greek vases and medallions! Regardless, by November 1782, Raspe had contacted Boulton regarding his mines. Not only was Raspe an expert in geology and minerals, but he had grown up around the Harz Mountain mines (whose overseer in the early 1680's, Gottfried Leibniz, had worked on the problem of developing machinery to pump standing water out of them). Raspe's father, Christian Theophilus Raspe, had lived in these Harz Mountains and worked in the Hanoverian state department of mines and forests.

Raspe's joining the Boulton mining operations was not a given. Boulton's operation was of national strategic importance, and everything that he did was examined for its security implications. He certainly knew about the

troubles that Raspe had had with the Landgrave of Hesse. Boulton had to satisfy himself about the situation sufficiently, so as to not leave himself open to attacks upon his operation by the anti-industrial faction in England. Boulton then employed Raspe as the scientific consultant for the Cornish mining industry, and soon, the head of the Assay Office for the area. One of Raspe's many proposals, was to use the unusually hard tungsten that he located, for the hardening of steel, such that anchors could be cast in one operation.

Raspe maintained his Continental connections. In October 1783, his report on the use of the steam engines in the Cornish metal industry was published in the Berlin magazine of James Bernoulli, a member of Raspe's extended political family.⁶⁴ In 1784, he prepared a paper, "Fire, Smoke, and Acids," for the Imperial Academy at St. Petersburg. Simultaneously, he worked in London on a project for replicating statuary for the museum of the Czarina, Catherine the Great. By 1785, he certainly had enough contact within Russia, and knowledge of the impending foolishness of Russia in pursuing a war against Turkey, to motivate his composing *The Adventures of Baron von Münchhausen* that summer.

In his last dozen years, Raspe seems to have been a litmus test in various regions of England, as to whether the feudalists or the pro-development forces in the area had the upper hand. For example, commissioned to perform a mineralogical survey of the Scottish Highlands, and to do for them what he had accomplished for Cornwall, Raspe worked long and hard hours, in difficult weather conditions.⁶⁵ Political fights would occur over whether the area was to be developed, or looted. In the midst of this, we have here one final example of the unabated, irrational hatred of Raspe by the British oligarchy, as follows.

In the Scottish Highlands, Raspe was hosted by Sir John Sinclair, who used and relied upon Raspe's report on the mining prospects. Sinclair never claimed any problem with it or him, and, in fact, voted up a resolution of thanks for Raspe at the Highland Society. Sinclair then wrote up the findings in a *Statistical Account* that he published, as the first President of the Agricultural Society. However, years later, after Sinclair was dead, his daughter would relate a story that Raspe ran a scam upon her poor father. Later, the Romantic, pro-feudal novelist Sir Walter Scott would take the matter one step further,



reprinted from *The Lunar Men*

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Raspe sought safety working for Franklin's Lunar Society network in England. Above: "Lunar men" Dr. William Small (left) and Matthew Boulton (right). Below: Inside Boulton's Soho Engineering Works, Birmingham.



The Granger Collection

weaving the daughter's gossip into a villainous character in his novel *The Antiquary*. There, Raspe appears as the character Hermann Dousterswivel, a wandering German mining prospector in the Scottish Highlands, who defrauds his host. The underlying rage against Raspe for his singular role in freeing Leibniz's manuscript from its prison, would express itself in just such uncontrollable excretions.

Republican or Rebel?

In the summer and fall of 1791, when the possibilities of a republican victory in France by Lafayette and his collaborator Bailly,⁶⁶ were being overwhelmed by mob mentality, Raspe would offer the following appraisals. Writing to Boulton, in recommendation of the Swedish painter Carl von Breda, Raspe had fun: "He does not speculate upon Fire Engines, Mills, Machinery, Buckle or Button-making, nor upon the New Jerusalem, the abolition of the Slave Trade, French Republicanism or

Cotton Mills, in which some of his discontented and expatriated countrymen have lately distinguished themselves, if not successfully, yet notoriously” And, more explicitly, Raspe wrote that France had become a place

where the Reformers and Constitution-Menders go forward as Ropemakers—the wrong way—where by robbing and plundering, they have undone publick Credit instead of creating it, and where Shilling and Sixpenny Assignats and unfounded Paper, unsupported by national honesty and Credit will, I apprehend, for many years to come, keep them from coining anything like Silver or Gold, and from stamping their puffed patriotism on anything but Waste paper and base Bell-metal.⁶⁷

Raspe, among other things, thought revolution should enhance public credit, not undo it.

His old collaborator Benjamin Franklin made similar anti-Jacobin comments, even earlier into the French troubles. Shortly after the violence of the summer and fall of 1789, beginning with the storming of the Bastille, he wrote in serious jest to the French scientist, J.B. LeRoy:

Are you still living? Or have the mob of Paris mistaken the head of a monopolizer of knowledge, for a monopolizer of corn, and paraded it about the streets upon a pole? Great part of the news we have had from Paris, for near a year past, has been very afflicting. . . . The voice of Philosophy I apprehend can hardly be heard among those tumults. . . . Our new Constitution is now established, and has an appearance that promises permanency.⁶⁸

Franklin died a few months later, in April 1790. Raspe and Franklin had shared 24 years of collaborative mission.

Raspe died in 1794, age 56, while on a trip to develop the copper mines of western Ireland, where he fell prey, in an impoverished, disease-ridden area, to what was probably an epidemic of spotted fever. In 1785, his life-long concern for public education, pedagogical museums, and the like, combined with his talent with materials and chemicals, had drawn him to the London studio of James Tassie. There, Tassie had developed a vitreous compound that was ideal for making multiple reproductions of statuary and such artwork, so that some balance of quality control and mass production could be attained. Raspe organized a catalogue for Tassie’s collection of art reproductions, which involved organizing the various items in topical fashion, and writing short descriptions of each artwork. In the dedication to the man who sponsored the catalogue, Raspe expressed his conception of the project:

I sincerely congratulate you on this disposition of your mind and heart, for in public as well as in private life, it will always attend you as a friendly genius; and like the Daemon of Socrates, which the profane could not form an idea of, suggest to you both the agreeable knowledge and the more important enjoyment and practice of whatever is true, right, just, and beautiful.

Whether with steam engines or artworks, bending nature for the general welfare of the population’s physical and cultural development, was a single subject for Raspe.

V. Franklin’s Post-1766 Organizing

Franklin had attempted for years in Britain to appeal to enlightened self-interest, arguing that more developed colonies could only benefit Britain in the long run. That worked to some extent in the 1766 defeat of the Stamp Act. However, Franklin seems to have expanded his conception of the matter, or at least what he was willing to argue for publicly, by developing in more breadth and depth, the idea of happiness. Thus, in his “Introduction to a Plan for Benefitting the New Zealanders,” there is an open appeal to the better angel of the English nature, even as late as 1771:

Britain is now the first Maritime Power in the world, Her Ships are innumerable, capable by their Form, Size, and Strength, of sailing all Seas. . . . The Inhabitants of those Countries, our *Fellow-Men*, have Canoes only; not knowing Iron, they cannot build Ships: They . . . cannot therefore come to us. . . . From these circumstances, does not some duty seem to arise from us to them? Does not Providence, by these distinguishing Favours, seem to call on us, to do something ourselves for the common Interests of Humanity?

Those who think it their Duty to ask Bread and other Blessings daily from Heaven, should they not think it equally a duty to communicate of those blessings when they have received them; and show their Gratitude to their Great Benefactor, by the only means in their power, promoting the happiness of his other Children? . . . [How greatly] may Englishmen deserve such Honour, by communicating the knowledge and use, not of Corn only, but of all the other enjoyments Earth can produce, and which they are now in possession of. *Communiter bona profundero, Deum est. [To shower good things over all, is Divine.]*

Many Voyages have been undertaken with views of

profit or of plunder, or to gratify resentment; to procure some advantage to ourselves, or do some mischief to others: but a voyage is now proposed, to visit a distant people on the other side of the Globe; not to cheat them, not to rob them, not to seize their lands, or enslave their persons; but merely to do them good, and enable them as far as in our power lies, to live as comfortably as ourselves.

It seems a laudable wish, that all the Nations of the Earth were connected by a knowledge of each other, and a mutual exchange of benefits: But a Commercial Nation particularly should wish for a general Civilization of Mankind, since Trade is always carried on to much greater extent with People who have the Arts and Conveniences of Life, than it can be with naked Savages. We may therefore hope, in this undertaking, to be of some service to our Country, as well as to those poor people, who, however distant from us, are in truth related to us, and whose Interests do, in some degree, concern every one who can say, "Homo sum," &c.⁶⁹

Franklin's mature conceptions elevated the debates in America up through 1775, and were clearly stamped upon his June 1776 committee of five which created the Declaration of Independence. The Leibnizian concept of Happiness could not be clearer. But what of the secondary issue of property? What does one render to Caesar, and what to God? How does one apportion, in the physical world, the finite magnitudes involved, in the pursuit of one's lifetime mission? How does one use material resources and the finite span of mortal life, to do the public good? The calculus involved in this, could best be developed by Leibniz's method and his followers, and certainly not that of Newton (or of Jeremy Bentham).

Perhaps Franklin's most explicit view on this came late in 1783. It is in some respects, but not all, remarkably akin to the development of this idea by his co-thinker, Moses Mendelssohn, published a few months earlier, in his work, *Jerusalem, or On Religious Power and*

Judaism. There, Mendelssohn reflects his discussion with the pro-American faction in the Prussian court in Berlin, including the Royal Councillor von Dohm, and the Assistant Councillor, Ernst Klein. Mendelssohn argued that it was the individual who had the sole right to what he produces or improves, and that such is his private property. However, this sole right was simply one side of his duty, which requires that he not cease his productive identity, but rather continue his productive activity, as a human, with what he has so far produced—hence, to use his product to do the public good. He must figure out how to deploy what he has produced. Someone else cannot preempt one's sovereign duty to do the public good—not because it is one's right to have comfortable space, or some such nonsense, but because one actually does have to accomplish the public good. That was the only reason that one got involved in the business of producing and improving, where the matter of private property arose. As Mendelssohn wrote,

Man cannot be happy without

"Happiness" vs. "Property" debated in the colonies: Richard Bland (far right) took arguments against British rule from both Vattel and Locke. Later, James Wilson (right) said: "happiness . . . is the first law of every government."



Above: Emmerich von Vattel. His 1758 "Law of Nations," founded on Leibniz, was reprinted in the colonies in 1774. Right: Benjamin Franklin reviews Declaration of Independence draft with Thomas Jefferson.



beneficence, whether it be passive, through receiving it, or active, through extending it. He cannot attain perfection except through mutual assistance, through reciprocity of service, through active and passive connection with his fellowman.⁷⁰

Hence, man must not stop short of the activity of producing and improving his species and the world. Where greed sets in, producing and improving has ceased, rights and duties do not exist; there is no need to worry about institutions in the law of the jungle. Instead, man is obliged to use all of his possessions for the benefit of his species, beyond what is minimally necessary for individual survival.

In December 1783, Franklin was in Paris, where he wrote to Robert Morris, the indefatigable fundraiser for the Revolution, who had repeatedly shown his willingness to sacrifice. Franklin maintains,

All Property, indeed, except the Savage's temporary Cabin, his Bow, his Matchcoat, and other little Acquisitions, absolutely necessary for his Subsistence, seems to me to be the Creature of public Convention. Hence the Public has the Right of Regulating Descents, and all other Conveyances of Property, and even of limiting the Quantity and the Uses of it. All the Property that is necessary to a Man, for the Conservation of the Individual and the Propagation of the Species, is his natural Right, which none can justly deprive him of: But all Property superfluous to such purposes is the Property of the Publick, who, by their Laws, have created it, and who may therefore by other Laws dispose of it, whenever the Welfare of the Publick shall demand such Disposition. He that does not like civil Society on these Terms, let him retire and live among Savages. He can have no right to the benefits of Society, who will not pay his Club towards the Support of it.⁷¹

Both Mendelssohn and Franklin had spent decades in working through the dangers and evils of Hobbes and Locke, through the inherent absurdities of a human being who purports to use reason, to reason himself out of reason, and into the mode of a beast. Both owed a debt to Leibniz, for even the capacity to address the question of property, and such mortal matters, the way a human being (a "*mensch*") would. Both had mature enough conceptions of property to be able to frame constitutions fit for human societies.

The Happy Deliberations in the Colonies

In the American colonies, the debate ensued in earnest, once the British Stamp Act made the direction of British imperial policy clear to one and all. In Williamsburg,

Virginia, Richard Bland's 1766 "An Inquiry into the Rights of the British Colonies" equally refers to Vattel's *Law of Nations* and Locke's *On Civil Government*, to frame his arguments. More developed, and more delineated, is James Wilson's pamphlet, "Considerations on the Nature and Extent of the Legislative Authority of the British Parliament," written in 1770, though not published until 1774. There, he argues:

[A]ll lawful government is founded in the consent of those who are subject to it: such consent was given with a view to ensure and to increase the happiness of the governed, above what they would enjoy in an independent and unconnected state of nature. The consequence is, that the happiness of the society is the first law of every government. [Footnote: The right of sovereignty is that of commanding finally — but in order to procure real felicity; for if this end is not obtained, sovereignty ceases to be a legitimate authority. 2. Burl. 32, 33.] This rule is founded on the law of nature: it must control every political maxim: it must regulate the legislature itself.⁷²

Wilson asserts happiness to be the judge of what Blackstone would have as the sovereignty of the British Parliament. His discussion of the colonies has a test: "Will it ensure and increase the happiness of the American colonies, that the British Parliament should possess a supreme, irresistible, uncontrolled authority over them? Is such an authority consistent with their liberty? Have they any security that it will be employed for their good?"⁷³

In 1773, the British Parliament answered this question by handing to the East India Company a monopoly upon the American tea trade. When the Sons of Liberty used the East India Company's tea to turn the Boston harbor into a teapot, Parliament destroyed the republican Massachusetts Charter, by passage of the Coercive Acts. Wilson's pamphlet was printed in time for the assembling of Congress in Philadelphia, September 1774. The delegates read Thomas Jefferson's "A Summary of the Rights of British America," a work that reminds the King that the colonists were "establishing new societies, under such laws and regulations as to them shall seem most likely to promote public happiness."

Also in 1774, in Europe, Franklin's associate, Charles Dumas, had a reprint made of Emmerich von Vattel's 1758 *The Law of Nations*, to further this 1774 debate and education process.⁷⁴ In the planning period between the 1773 Boston Tea Party and the September 1774 Congress, there would have been time to arrange for the publication and distribution of Vattel's work, and this is the likely explanation of Dumas' action.

The developments in that autumn of 1774 in Philadelphia prepared the “shot heard round the world” the following spring. Franklin’s arrival in Philadelphia must have put to flight some of the remaining axioms of Locke amongst the deliberations. Then, late in 1775, Arthur Lee (along with Dumas, the first pair of European agents hired by Congress) was delegated to meet and plan with Beaumarchais. Lee’s offer of long-term treaties of commerce with France, was included in Beaumarchais’ memorial to the French King, Louis XVI. Shortly thereafter, on March 12, 1776, the memorial of Louis XVI’s minister, Vergennes, created Beaumarchais’ private firm to arm and equip the Americans. The British blocked the American ports, in defense of the dominance of the East India Company, and on April 6, 1776, Congress opened the ports for trade to the world. George Wythe insisted, “We must declare ourselves a free people,” in order to conclude treaties with foreign powers. No more squirming for rights within the British Empire.

When, in June 1776, Franklin’s drafting committee began their work on the Declaration of Independence, ten years of informed discussion of Leibniz’s principle of “Happiness” as a superior organizing principle for government, had prepared minds. The prose of the Declaration is largely Jefferson’s; but the content, in particular the “pursuit of happiness” clause, was the sense of the Congress’s deliberations for at least the previous two years.

Secondary indications of this, from Jefferson’s rather defensive exchanges many years later (after Franklin had departed the scene), include:

- Jefferson would refer to Franklin’s description of his (Jefferson’s) role as like, “the draughtsman of papers to be reviewed by a public body.”

- When John Adams, as an old man, made the crusty comment: “There is not an idea in it but what had been hackneyed in Congress for two years before [referring to 1774–DS],” Jefferson responded, that such statements, as that of Adams, “may all be true. [However, . . .] I did not consider it as any part of my charge to invent new ideas altogether and to offer no sentiment which had ever been expressed before.”
- In his last year, Jefferson wrote to his critic, Richard Lee, somewhat disingenuously, that the essential thing was “not to find out new principles, or new arguments, never before thought of, not merely to say things which had never been said before; but to place before mankind the common sense of the subject, in terms so plain and firm as to command their assent. . . . All its authority rests then on the harmonizing sentiments of the day”



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By July 1776, Franklin had organized strong support in France (left), and Condorcet (above) hailed the American example. Below: The Battle of Lexington—the “shot heard ’round the world.”



The Granger Collection

The 'Declaration' Reverberates in Europe

Even before Silas Deane, American representative in Paris, could get a copy of the Declaration, copies were circulating in London, Edinburgh, Dublin, Leyden, Copenhagen, Warsaw, and Florence—and in Basel, Switzerland, Isaak Iselin had made a German translation. Later, Mirabeau's 1782 *Des lettres de cachet et des prisons d'état*, noted: "The sublime manifesto of the United States of America was very generally applauded." The Marquis de Condorcet, Franklin's collaborator in Paris, went even further: It is not enough that such rights "should be written in the books of philosophers and in the hearts of virtuous men; it is necessary that ignorant or weak men should read them in the example of a great people. America has given us this example. The act which declares its independence is a simple and sublime exposition of those rights so sacred and so long forgotten."⁷⁵

The exposition of those inalienable rights centered around the "simple and sublime" triune idea: "life, liberty, and the pursuit of happiness." That idea would be fought for, and died for; and that idea would develop, in the debates over the Constitution, the organizing principle of the government, the positive obligation to the "General Welfare" of the population. The articulated proof of Leibniz's conception of man's mind, over Locke's conception of man's mind as a "blank slate," is properly seen in the subsequent success of the "America" hypothesis, that human nature was eminently worth investing in, developing, and transforming.

So, then, consider how low one must stoop to argue, as one contemporary historian does, that, "Even Jefferson's use of 'the pursuit of happiness' as the third term in the triumvirate of basic rights, instead of Locke's term 'estate,' was not . . . necessarily a departure in meaning. Stylistically, 'pursuit of happiness' is unquestionably better, and it may have been no more than an instinct for a graceful phrase that caused the substitution." The author gives sophistry a bad name. For the moment, let us leave this sophist anonymous, but ask: Would anyone allow such a sophist to train the policy-makers of this republic?

There is a bit of history before we get to our anonymous sophist. First, as part of the British invasion, Ambrose Serle, the secretary of Lord Howe, launched an attack on the Declaration on July 13, 1776: "A more impudent, false and atrocious Proclamation was never fabricated by the Hands of Man." Then, in London, Lord North commissioned one John Lind, to compose a pamphlet, "An Answer to the Declaration of the American Congress." Lind reiterated the line that Locke, New-

ton, and George III had all taken toward Leibniz and his ideas, writing: "Of the preamble, I have taken little or no notice. The truth is, little or none does it deserve." For Lind, the possibility that the Creator was good, and that it were a happy or felicitous Creator who would endow man with the type of liberty that was necessary for solving the ever-new physical problems of survival—this was not worth any sustained attention, and was certainly outside the bounds of governance.

Lind argues that the innate evil of man's nature—a view common to Thomas Hobbes and John Locke—meant that someone must be unhappy, that governments must sacrifice lives or liberties, or both. No government could possibly exist, except for some arrangement among tribes of "original sinners." The Americans, Lind asserted, in their Declaration based upon "inalienable rights," have "put the axe to the root of all government," since in all past or even possible governments, "some one or other of these rights pretended to be unalienable, is actually alienated." Lind's associate, Jeremy Bentham, offered his "Short Review of the Declaration" (evidently finding pleasure in parroting Lind's argument): "[T]o secure these rights, they [the signers of the Declaration] are content that Governments should be instituted. They perceive not, or will not seem to perceive, that nothing which can be called government ever was, or ever could be, in any instance, exercised, but at the expence of one or other of those rights."⁷⁶

Lord North, Lind, and Bentham certainly were aware that an argument had been put on the table, which the imperial faction in Britain had gone to great lengths to suppress. They were then in the sixtieth year of the personal suppression of Leibniz's writings by the Hanoverian Kings of England.

Confederate 'Property' vs. Happiness

The case is not so clear concerning the awareness of Richard Henry Lee, who charged that Jefferson had copied the "Declaration of Independence" from Locke's *Treatise on Government*. One of the Virginia Lees, he received his law education in England. While he was active in support of the Revolution, he later aggressively opposed the Constitution. (And Richard may not have been as big a headache for the Founding Fathers as were his relatives, the traitor, Charles Lee, who gave Howe secret plans to defeat the Americans, and Arthur Lee, who did his best to sabotage Franklin's delegation in Paris, and then sow confusion in the Congress back home.) But it is to Richard Lee that the honor goes of publicly identifying Locke as the source of the Declaration.

The Nineteenth-century South Carolina secessionist



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The conflict over slavery continued the fight between Leibniz and Locke. Pro-slavery spokesmen like Rufus Choate (bottom, left) decried the Declaration's "Life, Liberty, and Happiness"; the Kansas pro-slavery Constitution, like that of the later Confederacy, asserted the primacy of property. Left: Abraham Lincoln argues against extending slavery to Kansas in the Lincoln-Douglas debates. Below: Mob enters Kansas to vote up slavery.



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politician J.H. Hammond, brought his peculiar form of reasoning and insight, into the thinking of the Founding Fathers:

Our forefathers, when they proclaimed this truth to be self-evident, were not in the best mood to become philosophers, however well calculated to approve themselves the best of patriots. They were much excited, nay, rather angry. . . . The phrase was simply a finely sounding one, significant of that sentimental French philosophy, then so current, which was destined to bear such sanguinary consequences.⁷⁷

Variouly Congressman, Governor, and Senator of South Carolina, from the nullification period of 1830, to the actual 1860 secession, Hammond was also famous for declaring that "Cotton is king." He had the distinction to be Senator, when South Carolina bolted from the United States, and triggered a few "sanguinary consequences" of their own.

Abraham Lincoln and friends organized a new political party to address this drift from the mission of the Declaration of Independence, and the consequent Constitution. Rufus Choate, former Senator and elder figure among the Whigs, articulated the position of those who objected to Lincoln taking the Declaration seriously, as if

ideas have causal results in the world. Lincoln's former fellow Whigs, including Choate, had bowed to the oligarchy for so long, that they had forgotten which country they lived in. Choate argued that the Declaration was a use-less abstraction:

Is it man as he ought to be or man as he is, that we must live with? . . . Do you assume that all men . . . uniformly obey reason? . . . Where on earth is such a fool's paradise as that to be found? . . . [Such foolishness is the Republican party's] mission to inaugurate freedom and put down oligarchy, its constitution the glittering and sounding generalities of the Declaration of Independence.⁷⁸

Lincoln had engaged this battle against Choate quite openly, for example in his speech to the first Republican state convention of Illinois.⁷⁹ He attacked the Boston-based Choate, saying:

[A]t the birthplace of freedom—in the shadow of Bunker Hill and of the "cradle of liberty," at the home of the Adamases and Warren and Otis—Choate, from our side of the house [Whig-DS], dares to fritter away the birthday promise of liberty, by proclaiming the Declaration to be "a string of glittering generalities"; and the Southern Whigs, working hand in hand with pro-slavery Democrats, are making Choate's theories practical.⁸⁰

Southern Whigs, pro-slavery Democrats, and Choate's faction among the Northern Whigs, were not simply theoretically opposed to what the Founding Fathers did. When Kansas was seized by the pro-slavery mob, their new state constitution asserted: "The right of property is before and higher than any constitutional sanction." Now, this is pretty primitive. It is one thing to write a constitution that asserts that the political body is based upon slavery; but, the Kansas pro-slavery Constitution didn't even rise to that level of literate evil. It is difficult to figure what such folks mean by the word, "constitution," if the important matters are settled before anything is constituted. In more normal English, it might read: "We've taken over, and power rules property; so, if we're going to have a piece of paper, it is not going to stand in the way of reality." At least, the framers of the Confederate Constitution knew how to write a coherent-

ly evil document, when they replaced “pursuit of happiness” with the word “property.”⁸¹

So, how does a modern sophist deal with this messy problem of the Declaration’s “pursuit of happiness”? Perhaps the Founding Fathers meant “property,” but confused us, because they liked to prettify their language? Thus, we have, again:

Even Jefferson’s use of “the pursuit of happiness” as the third term in the triumvirate of basic rights, instead of Locke’s term “estate,” was not . . . necessarily a departure in meaning. Stylistically, “pursuit of happiness” is unquestionably better, and it may have been no more than an instinct for a graceful phrase that caused the substitution.⁸²

This claptrap was circulated by the Bobbs-Merrill “American Heritage Series” in the 1950’s, as the standard line for modern American education. The sophist in question was Harvard University Professor of Science of Government Carl J. Friedrich, a colleague of William Yandell Elliott in the 1950’s training of Henry Kissinger, Zbigniew Brzezinski, and Samuel Huntington.⁸³ His students are now in their fifth decade of polluting the constituted mission of the United States republic. And so, to answer the question posed earlier: No, Friedrich should not have been training policy-makers of this republic.

Leibniz’s Simple Truths of History

When Raspe and Münchhausen brought Franklin into the Hanover library, where they had worked to liberate Leibniz’s works, there was one particular Leibniz piece, a 1676 dialogue, which was quoted earlier in this article. There, the character “Theophilus” was much like Franklin, discussing the common good and the Republic, with the character similar to Raspe, “Pacidius”:

[H]e was consumed with the study of the common good [communis boni], on whose increase he had often pinned his hope, and on which he had stinted neither wealth nor labor. I had a close friendship with him, and enjoyed his company. At that time, by chance, we were having a long conversation about the State [Republica] . . .

The immediate continuation of Leibniz’s sentence, not presented before, is:

. . . and the unreliable records of histories, which corrupt the simplicity of deeds with fictitious accounts of their causes, as he was brilliantly showing to have happened in business transactions he had been involved in. . . . What you say, Theophilus, about civil history being corrupted by people who think up hidden causes for conspicuous events, is something that becomes even more dangerous in natural history . . .

Let us consider this at some length. This dialogue by Leibniz, titled “A Dialogue of Motion,” was about physics and competent epistemological investigations. He chose to attack the systemic, ideological problems that cropped up in investigating the world, by composing a character, Theophilus, who had had some experience in the business world attacking such. He had become “a wealthy and honored businessman,” evidently because he was somewhat brilliant in business, from keeping his mind on “the simplicity of deeds,” and being able to distinguish such, from the overwhelming tendency of people in business to corrupt them “with fictitious accounts.” What people actually do and accomplish in the world, is one thing. What people frequently are compelled to believe, or to construct as images about them, is another. Hence, the expression, “watch his feet, not his mouth.”

Next, Leibniz has Theophilus applying this developed capacity from analysis of business affairs, to the histories of states, distinguishing such extant histories, from “the simplicity of deeds” that could possibly account for the actual state’s existence. This capacity, so identified, was crucial for their discussion of the ways of increasing the common good. Leibniz’s felicitous compositional choice extends this same quality of Theophilus, in business and in strategic analysis, now to science. It is to be brought to bear in attacking the ideological flaws in the (Cartesian, mechanist) physics of a mutual friend. In physics, also, what must be going on, is a different question from the many, many rationalizations which people offer, that are products of the axiomatic assumptions that they chose not to examine.

What is the “simplicity of deeds” with regard to the declared mission of the United States? Sometimes a cigar is just a cigar, and the pursuit of happiness is just the pursuit of happiness—and the interesting therapeutic problem is to isolate and discover the systemic, ideological obsessions that can’t be happy with that.

As Theophilus, Leibniz, and Franklin, so Lyndon LaRouche has shown a certain talent for “analysis situs” methods in areas of business, statecraft, physics, and epistemology.⁸⁴ He has developed, in terms of potential relative-population density, a measure for dealing with questions about the “simplicity of deeds” of nations, including about the founding of the United States (or about the Italian Renaissance, the collapse of Rome, etc.).

A method of analysis that starts out looking for what explains the generation of the situation, and so assumes that there was a lawful generation, is one that is already confident that the composition of the universe by the Creator was a happy one. The Creator did not simply throw us into existence, without clues as to our mission, and merely leave us to use our subjective processes to

entertain ourselves for the duration of that existence. Hence, the subjective freedom of thought must necessarily be developed, in order that the physical existence of free human beings may be made possible. The love, or *agapē*, required for the sustained application of one's thought processes, can be enhanced by recreating for

oneself what Leibniz would call "the simplicity of deeds" of Socrates, of Jesus, or of Joan of Arc—and we would add, of Gottfried Leibniz and Benjamin Franklin.

Bend your talents toward such historic tasks, and you will know happiness.

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1. Of some note, "life" in the original draft was actually written as "the preservation of life . . ."
 2. This fascinating strategic coup of Leibniz is developed in H. Graham Lowry's *How the Nation Was Won: America's Untold Story. Vol. I: 1630-1754* (Washington, D.C.: Executive Intelligence Review, 1987).
 3. The best presentation of the joint Locke-Newton anti-republican policies and actions can be found in Philip Valenti's "The Anti-Newtonian Roots of the American Revolution," *Executive Intelligence Review*, Dec. 1, 1995 (Vol. 22, No. 48), pp. 12-31.
 4. Locke may well also have been agitated over Leibniz's habit of rooting out intellectual frauds, as Leibniz was then in the midst of a scientific challenge to Locke's underling Newton. The public challenge, issued by Leibniz's collaborator, Johann Bernoulli, on the brachistochrone—or "least time"—problem, had made it clear that real scientific and mental development was an eminently public matter.
 5. Georg Ludwig's wife, Sophie Dorothea, had been under "house arrest" since 1694, under most bizarre circumstances, never to see her husband or her children again. She had tried to escape from Georg Ludwig; and the man who tried to aid her, Königsmarck, was murdered by four courtiers, his body placed in a sack loaded with stones, to "swim with the fishes." Whatever her fears were of her husband, they seemed to go far beyond the mere matter of his having a mistress. Her pleas to her own father, prior to her attempt to flee, had gone unaddressed, for fear of disturbing political arrangements. Georg Ludwig's son, George II, and also his daughter-in-law, Caroline, would consequently never be close to him. Undoubtedly, the file that was compiled on Georg Ludwig would be an easy avenue for pressure upon, and control over, him.
 6. What is one to conclude, when charges of cheating are decided by cheating?
 7. I have relied upon E.J. Aiton, *Leibniz: A Biography* (Bristol and Boston: Adam Hilger, Ltd., 1985) for significant portions of the facts of Leibniz's life.
 8. *Memoirs of John Ker of Kersland* (London: John Ker, 1727), quoted in Philip Valenti, unpublished, 1978.
 9. *G.W. Leibniz and Samuel Clarke: Correspondence*, ed. by Roger Ariew (Indianapolis: Hackett Publishing Company, 2000). The first of the six letters by Leibniz in this correspondence of a course of about a year.
 10. For example, the *Acta Eruditorum*, published in Leipzig, was established by Leibniz in 1682 to publish his, and his circle's, scientific work. Leibniz's half-brother, Johann Friedrich, and his brother-in-law, F.S. Loeffler, had taught in Leipzig. Based out of Leipzig, three generations of the Loeffler family fought for Leibniz's works. See my article on the Leibniz core around Bach's Leipzig: "Thinking Through Singing: The Strategic Significance of J.S. Bach's *A Musical Offering*," *Fidelio*, Winter 2000 (Vol. IX, No. 4).
 11. See Valenti, "Anti-Newtonian Roots," *op. cit.*, for an excellent presentation of Colden's work, along with the work of Franklin's Philadelphia mentor James Logan. However, Valenti was not aware of Kästner's interest in the work.
 12. *Cadwallader Colden Papers, Vol. I*, in *New York Historical Society Papers*, 1917, Preface and p. 140.
 13. See Valenti, "Anti-Newtonian Roots," *op. cit.*
 14. This is Franklin's account of Kästner's words. Feb. 28, 1753 letter to Colden, in *The Papers of Benjamin Franklin*, ed. by Leonard W. Labaree (New Haven: Yale University Press, 1969), Vol. 13, p. 425.
 15. *Papers, op. cit.*, Vol. 4, p. 314. The Latin is from Ovid's *Metamorphoses*, loosely translated as: "At least he dared greatly, although he failed." Minimal punctuation added, shown in brackets.
 16. *Ibid.*, p. 354.
 17. Franklin wrote several reports to Collinson on his research on electricity in 1749 and 1750; however, the London Royal Society treated them with disdain. Included among the results of his experiments was the proposal to test the hypothesis that lightning was the same phenomenon as the electric sparks generated in the laboratory, by experimenting with kites and lightning-rods. Franklin did not carry out his famous kite experiment until the summer of 1752, a year after the *Experiments and Observations* was published; he subsequently received reports of the lightning-rod experiments carried out in France in the spring of 1752.
 18. *Papers, op. cit.*, Vol. 4, pp. 374-375.
 19. *Ibid.*, p. 442.
 20. Nov. 19, 1753, Colden letter to Franklin. Quoted in Valenti, *op. cit.* Valenti points out that Franklin's London associate, Peter Collinson, reported to Colden, March 13, 1755, that, "The state of the case seems to be this—that every one [in London] is so satisfied with Sir Isaac's [theory] that they have no curiosity to examine yours . . . [I]n Germany or France it would not want for perusal." This certainly sounds like a politically repressed and frightened environment. If the premature demise of Mylius in 1754 was not an assassination, the mere unaddressed suspicions of a foul end to Mylius, would have had the same repressive effect.
 21. *Papers, op. cit.*, Vol. 4, pp. 446-447.
 22. Colden had made observations showing the axis of the ecliptic differed by a few seconds of an angle between winter and summer solstices.
 23. Lessing, and his new ally Moses Mendelssohn, both in their mid-twenties, composed and distributed a work satirizing the prize essay competition run by the Berlin Academy's Maupertuis and Euler, thus succeeding in exposing them as fools in their attacks upon Leibniz. See G.E. Lessing and Moses Mendelssohn, "Pope a Metaphysician! An Anonymous Pamphlet in Defense of Leibniz," *Fidelio*, Winter 1999 (Vol. VIII, No. 4).
 24. Most of the following on Raspe's career is drawn from John Carswell's *The Romantic Rogue: Being the Singular Life and Adventures of Rudolph Eric Raspe* (New York: E.P. Dutton & Co., 1950).
 25. The Göttingen philologist, Christian Gottlob Heyne, father-in-law of one of Raspe's good friends, shared the joys of working on Leibniz with Raspe and Kästner during this period. Heyne had already benefitted from an earlier "Leibniz publishing" event,

- when in 1755, a Göttingen colleague, Professor A.B. Michaelis, brought out the Leibniz-Ludolf Correspondence, which was centered upon philological studies (see “Leibniz, Halle, and the American Revolution,” footnote 4, page 33, this issue).
26. The other five works in the volume were: “Examen du Sentiment du Pere Malebranche que nous voyons tout en Dieu,” “Dialogues de Connexion inter Res et Verba,” “Difficultates quaedam Logicae,” “Discours Touchant la Methode de la Certitude et l’Art d’inventer,” and “Historia et Commendatio Characteristicae Universalis quae simul sit Ars Inveniendi.”
 27. See David Shavin, “Philosophical Vignettes from the Political Life of Moses Mendelssohn,” *Fidelio*, Summer 1999 (Vol. VIII, No. 2). An additional sign of this improved environment: After twenty years of attacks upon Leibniz at the very Berlin Academy of Science that he had founded, the Academy chose, in 1767, to give an award for the best eulogy of Leibniz! The winner, Jean Sylvain Bailly, launched a career in astronomy and republicanism, working with Franklin and the Marquis de LaFayette; see Pierre Beaudry, “Jean Sylvain Bailly: The French Revolution’s Benjamin Franklin,” *Executive Intelligence Review*, Jan. 26, 2001 (Vol. 28, No. 4).
 28. *For the Good of Mankind: Pierre-Augustin Caron de Beaumarchais’ Political Correspondence Relative to the American Revolution*, ed. and trans. by Antoinette Shewmake (Lanham, Md.: University Press of America, 1987), pp. 12-13. De Noailles would die under the guillotine during the Terror.
 29. *Papers, op. cit.*, Vol. 13, p. 163. Franklin’s Pacificus, and his other literary voices, managed to combine a gentleness with a sharpness, most effectively, in a manner reminiscent to this author’s ear of his German contemporary Moses Mendelssohn.
 30. *The Monthly Review*, January 1766, Vol. XXXIII, Appendix, pp. 497-505.
 31. Franklin had been in England for most of the previous decade, but only got to the Continent once before. Whether he had already intended to go to Leibniz’s library in Hanover, or not, the public freakout against Raspe might well have triggered or consolidated his intentions. Further, that Franklin’s old literary acquaintance, Kästner, had written the introduction to the Leibniz volume, might have provided that much more incentive.
 32. *Papers, op. cit.*, Vol. 13, p. 316.
 33. “Pacidius to Philalethes: A First Philosophy of Motion,” in *The Labyrinth of the Continuum*, ed. and trans. by Richard T.W. Arthur (New Haven: Yale University Press, 2001), pp. 131-133.
 34. July 13, 1766: “Franklin, der Doctor juris und Insonderheit in der Oeconomie physique und der Agricultur grosse Kenntniss hat.”
 35. The event was described in the Sept. 13, 1766 *Göttingeische Anzeigen von gelehrten Sachen*.
 36. *Hannoversches Magazin*, Feb. 27-April 20, 1767. For an English translation, see *Papers, op. cit.*, Vol. 13, pp. 346-377.
 37. *Papers, op. cit.*, Vol. 13, pp. 375-376.
 38. See footnote 25.
 39. Franklin was the sponsor of Mathew Carey, and Ebeling was an agent in Europe for the circulation of Carey’s works. It is not clear whether Franklin ever met Lessing. What is known, is that Lessing was visiting Kästner at Göttingen no later than August 2, two weeks after the Göttingen “Science Festival,” and that his host, Michaelis, was Franklin’s host. Minimally, Lessing would have had ample opportunity to hear first-hand of the events and deliberations from Kästner and others. Curiously, Lessing had been in Pymont earlier, in June, at the same spa where Franklin had also been in late June. Kästner’s Aug. 2, 1766 poem for the occasion reads (in translation):

To conquer blindness by his gentle songs,
Amphion passing foreign lands was seen.
O Lessing! If Amphion’s art were yours,
For our confused minds wouldst thou sing.
 40. *Papers, op. cit.*, Vol. 13, pp. 424-425. Emphasis added.
 41. *Papers, ibid.*, p. 425, note 2.
 42. Curiously, Barrington’s brother, Daines Barrington, had been assigned an equally sensitive matter a year earlier. He was to investigate for the Royal Society whether the eight-year-old genius, Mozart, then visiting London, was possibly an adult dwarf! That is, the human mind could not have such potentiality—nor could, for that matter, Illinois or the American continent.
 43. Gorgias was the orator who inflamed Alcibiades in 417-415 B.C., sending Athens into renewed bloodshed and ruin. See Plato’s dialogues, *Gorgias* and *Alcibiades*. Franklin, insightfully, compares the pause, and possible peace, in the midst of the Peloponnesian War, to the just concluded 1756-63 French and Indian War. Athens succumbed to the oratory, plunging to her destruction.
 44. “Reply to Coffee House Orators,” in *Benjamin Franklin: Writings*, ed. by J.A. Leo Lemay (New York: Library of America, 1987), pp. 590-594.
 45. *Papers, op. cit.*, Vol. 13, p. 406.
 46. *Ibid.*, p. 406-407, note 5.
 47. Of course, Franklin did not need to discuss Leibniz’s extended treatment of Locke, with Raspe and Münchhausen, in order “to do good”—he had spent most of his previous sixty years doing just that. The story of the influence of Cotton Mather’s *Essays To Do Good* upon the teenage Franklin, and of his subsequent good actions—including, the organization of his Junto, his establishment of fire stations, lending libraries, military defense, academies, schools for public education of Indians and Blacks, etc.—has been reported elsewhere. Notable are Lowry’s coverage of the Mathers; Trout’s presentation of the literate Commonwealth cultural tradition; and Valenti’s tracking of the coherence between the scientific and the political policies, of both the Leibniz/Logan/Franklin republican circles, and the contrary Locke/Newton colonial circles. Further, Trout has demonstrated that the Congressional delegations in Philadelphia, just prior to the Declaration of Independence, found that the *Law of Nations* by the Leibnizian, Vattel, was crucial to their deliberations. See Lowry, *op. cit.*; Valenti, *op. cit.*; and Robert Trout, “Life, Liberty, and the Pursuit of Happiness: How the *Natural Law* Concepts of G.W. Leibniz Inspired America’s Founding Fathers,” *Fidelio*, Spring 1997 (Vol. VI, No. 1), and “The Aesthetical Education of America,” *Fidelio*, Winter 1999 (Vol. VIII, No. 4).
 48. See footnote 24.
 49. *Papers, op. cit.*, Vol. 13, p. 406.
 50. It seems likely that Franklin attempted to provide Raspe with alternatives at this point. The English admirers of Raspe secured his membership in the Royal Society in 1769, and, in 1770, there was discussion with Franklin about Raspe leaving Cassel.
 51. A simultaneous incident with Beaumarchais may help unlock what was going on here. Beaumarchais suddenly departed from his mission to London, and showed up in Vienna, where he was placed under house arrest. This arrangement allowed him to meet comfortably—daily for several weeks—with his counterpart in the Austrian Court, Joseph von Sonnenfels. Was this coordinated with the Raspe-Frederick meeting?
 52. Given that the Landgrave would soon lead the world in the renting of subjects as mercenaries, it were likely that his finances were

- in much shakier shape than anything that he charged Raspe with! A couple of years earlier, the indebtedness of an ally of the Landgrave, the Duke Karl-Eugen of Stuttgart, sent him off to Venice to attempt to gamble his way out of the hands of his usurer, Voltaire. The incident was later famously developed by one of the Duke's political prisoners, Friedrich Schiller, in his novella, *The Ghost-seer*.
53. Dr. William Small, Franklin's collaborator since 1763, whose partnership with Matthew Boulton had just succeeded in manufacturing working steam engines, died suddenly and unexpectedly on Feb. 25, 1775. As Anton Chaitkin points out, it is a highly suspicious death that has drawn no investigation. See Chaitkin's report on the Lunar Society grouping, "The Franklin School Starts Modern England," *The New Federalist*, May 1, 1997, available at http://members.tripod.com/~american_almanac/chaitkin.htm
 54. Carswell, *op. cit.*, p. 104.
 55. See Trout, "Life, Liberty," *op. cit.*
 56. It might also have contributed to Schiller's impulse, a few years later, to choose this same theme for his play, *The Robbers*.
 57. Born had, among other things, extracted silver from ores by amalgamation, and, in general, had improved mining by chemical procedures applied to ores. He was the closest thing to a "Benjamin Franklin" in Austria, and tried to create a Franklin-type of non-mystical lodge, centered around scientific developments. He became the model for Sarastro in Mozart's opera, *The Magic Flute*. See David Shavin, "Mozart and the American Revolutionary Upsurge," *Fidelio*, Winter 1992, (Vol. 1, No. 4)."
 58. According to Carswell, it is most likely that the Berlin book publisher August Mylius had sent Lessing's play to Raspe. August might have obtained some satisfaction, as it was his relative, Christlob, who had died in London 27 years earlier. Carswell, *op. cit.*, p. 139.
 59. Muriel Mirak Weissbach, "How Champollion Deciphered the Rosetta Stone," *Fidelio*, Fall 1999 (Vol. VIII, No. 3).
 60. See Shavin, "Mozart and the American Revolutionary Upsurge," *op. cit.*
 61. The German edition of 1788 was put out by an old associate of Raspe, Georg Lichtenberg, who had also studied under Kästner, and had been at the 1766 Franklin celebration in Göttingen. Lichtenberg also set up the first Franklin lightning rod in Göttingen, and was a collaborator of Moses Mendelssohn and a teacher of the Humboldts.
 62. Small had been an important influence on the young Thomas Jefferson. He was a mathematics and science professor at William and Mary, where he played in a string quartet with the student Thomas Jefferson. The other two members of the quartet were George Wythe, an activist in the debates over the happiness of nations, and Francis Fauquier, the Governor. See Chaitkin, *op. cit.*
 63. *Papers, op. cit.*, Vol. 13, pp. 166-168.
 64. This Bernoulli was a sort of political cousin. Raspe's old Cassel collaborator, Mauvillon, worked with C.W. von Dohm in pro-American operations during the Revolution. In 1781, Dohm, with his collaborator Moses Mendelssohn, chose Bernoulli to translate into French their work on the ecumenical basis for citizenship, "On the Civil Improvement of the Jews." Now, in 1783, Raspe was publishing in Bernoulli's journal. Of course, if "cousins," then it was all in the Leibniz family.
 65. Coincidentally, Raspe stayed in the same room in Inverary as the republican poet Robert Burns, who, two years earlier, had recorded the Highlands "pre-development" conditions, on the window-pane: "There's naething here but Highland pride / And Highland scab and hunger; / If Providence has sent me here, / 'Twas surely in an anger."
 66. The same fellow who, in the cultural offensive of 1765-1767, had won the Berlin Academy prize in 1767, for his Eulogy on Leibniz. See footnote 27.
 67. Carswell, *ibid.*, pp. 244-245.
 68. *Franklin on Franklin*, ed. by Paul M. Zall (Lexington, Kentucky: University Press of Kentucky, 2000), p. 285.
 69. Aug. 29, 1771, in *Writings, op. cit.*, pp. 671-673. The plan came six weeks after Captain Cook had returned to England from his first trip to New Zealand. Joseph Banks, the scientist on that voyage, was Franklin's frequent dinner partner, and had undoubtedly briefed him on the expedition. On Cook's upcoming 1772-75 expedition, the subject of Franklin's proposal, was the young Georg Forster, who was clearly inspired by Franklin's mission. In later years, Forster would popularize in verse the image of Franklin's electrical sparks as a Promethean image of freedom—the image developed first by Schiller's "Gotterfunken" in his "Ode to Joy," and then by Beethoven in his Ninth Symphony.
 70. Moses Mendelssohn, *Jerusalem, or On Religious Power and Judaism*, quoted in Alexander Altmann, *Moses Mendelssohn, a Biographical Study* (Philadelphia: Jewish Publication Society of America, 1973), p. 524.
 71. Franklin to Robert Morris, Dec. 25, 1783. *Writings, op. cit.*, pp. 1081-1082.
 72. Quoted in Carl L. Becker, *The Declaration of Independence* (New York: Vintage Books, 1960), pp. 108-109.
 73. *Ibid.*
 74. Charles W.F. Dumas contacted Franklin in the spring of 1768. A republican activist, he would be established as a European agent of Congress's Committee of Secret Correspondence within days of its establishment, Nov. 29, 1775.
 75. Quoted in Becker, *op. cit.*, pp. 230-231.
 76. *Ibid.*, pp. 228-229. Since Lind seems to have composed his work in tandem with Bentham, it might be that Bentham wasn't finding pleasure in parroting Lind, but in parroting himself. Either way, we can be sure that Bentham was pleasuring himself.
 77. *Ibid.*, p. 245.
 78. Choate letter to E.W. Farley, Aug. 9, 1856, quoted in Becker, *ibid.*, p. 244.
 79. Illinois, of course, was the precise area that was slated never to be developed, per British imperial policy of 90 years earlier.
 80. Lincoln to first Republican state convention of Illinois, May 29, 1856, quoted in *The Essential Abraham Lincoln*, ed. by J.G. Hunt (Avenel, N.J.: Portland House, 1993), p. 99.
 81. See Edward Spannaus, "The Fascist Legal Theories of the Conservative Revolution," *The New Federalist*, Sept. 25, 1995 (Vol. IX, No. 37).
 82. Carl J. Friedrich, Eaton Professor of Science of Government, Harvard University, and Robert G. McGloskey, Professor of Government, Harvard University, *From the Declaration of Independence to the Constitution* (Indianapolis: Bobbs-Merrill, 1954), p. xxxix.
 83. See Lyndon H. LaRouche, Jr., *Zbigniew Brzezinski and September 11th* (Washington, D.C.: LaRouche in 2004, 2001). Friedrich is the one who, in 1957, led the opposition to Huntington and his too bold argument for naked military power. Friedrich's 1962 rapprochement with Huntington at Columbia University, recruited him back to Harvard. Perhaps Friedrich's "instinct for a graceful phrase" helped him pave over their differences in style.
 84. One early rule of thumb from LaRouche's days as a management consultant, if memory serves correctly, goes something like this: If something is wrong with the firm, but things appear okay on the surface, see if the bookkeeper is sleeping with the boss.

INTELLIGENCE INVESTIGATION

Leibniz and the American Revolution

Franklin's 'Lunar Society' And the Industrial Revolution

by Marcia Merry Baker

A new book is welcome about the “Lunar Society”—the circle of great figures (Boulton, Watt, Wedgwood, Priestley, *et al.*) and great works (steam power, canals, factories), centered in the British Midlands during the decades from the 1760's through 1800 (the exact period of the successful American Revolution), whose names are associated with the advent of the Industrial Revolution. *The Lunar Men* gives extensive biographies, detailed histories by topic (e.g., chapter headings—“Steam,” “They Build Canals,” “Ingenious Philosophers,” etc.) and even a five-page chronology of the Eighteenth century, 50 pages of notes and sources, a detailed index, and 144 illustrations.

But, what the new book leaves out—although it is still enjoyable to “read into”—is the crucial history and strategic context of the “Lunatics,” as Erasmus Darwin fondly self-described them. Namely, that the Lunar circle of creative personalities, centered in Birmingham, was interconnected with international networks led by Benjamin



**The Lunar Men:
Five Friends Whose Curiosity
Changed the World**
by Jenny Uglow
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Giroux, 2002
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Franklin, and going back to Gottfried Leibniz, which were *deliberately and consciously committed to scientific and technological advance to promote the development of nations, on behalf of the common good*. This was an explicit goal, involving international collaboration of all kinds, through visits, letters, publishing, political battles, espionage, and so forth.

In other words, the “Lunar Men” were not just a bunch of gifted, curious, lucky locals. They were nation-builders by vocation, and highly successful in their work at advancing science and economic progress, and backing and befriending the American Revolution on behalf of all peoples.

In turn, what is underscored by appreciating this interconnected history of the Lunar Society and the extended Franklin/Leibniz networks is, that the conventional explanations for the

origins of the Industrial Revolution, are myths and falsehoods. The usual idea is that “capitalists”—defined as those with funds (often, with a so-called “Calvinist ethic”), apply technology, centralize production into factory

systems, and increase output. The uncontrolled outcome is guided by the Invisible Hand of free-trade imperialists of the Adam Smith variety. In the course of it all, terrible social ills inevitably result.

Karl Marx presents the famous version of this imputed process in his 1848 *Communist Manifesto*. Then there is the more academic version by Oxford professor Arnold Toynbee (uncle of the well-known historian Arnold J. Toynbee), who is credited with popularizing the concept in his *Lectures on the Industrial Revolution*, 1884.¹

These two dismal constructs are thoroughly debunked in a 1988 monograph by historian Anton Chaitkin, titled, “The Secret History of the Industrial Revolution.”² Chaitkin prefaces his review of Franklin, the Lunar Society, and related networks, with the essential point: “The secret to modern history is, that all the great breakthroughs in technology and living standards were deliberate projects for the improvement of humanity, guided by the principles of the American Declaration of Independence.” His specific reference is to the Leibnizian concept of, “Happiness,” used in the Declaration’s phrase, “life, liberty, and the pursuit of happiness”—namely, pleasure in providing for the common good.

The Lunar Society’s Leibnizian Provenance

The achievements of the Lunar Society, as individuals and collaboratively, are spectacular in terms of providing for the public good. They conspired to do so.

First, some formalities.

The “Lunar” name itself, was said to be chosen simply because of the group’s intent to meet regularly—at least monthly, and preferably on a Monday or Sunday nearest the full moon, when going home late at night would be easier. The Lunar Men, numbering some six to 13 or so, plus frequent guests, would gather at one of their homes, in Birmingham, Lichfield, or nearby in the Midlands region. They tried to begin at 2 p.m. and work until late, even staying through the next day on occasion, in order to confer, conduct demonstration experiments, and review projects and correspondence together. Their topics ranged widely, on chosen matters of science, technology, infrastructure, policy, medicine, and so forth. Author Uglow provides us with the household accounts of the good eating involved, and what family members did during Lunar sessions.

The grouping took form in the 1760’s; made a resolution as of New Year’s Day 1775, to keep as “regular” as possible in their meeting schedule; and persisted in some

form through the early 1790’s, by which time heavy political harassment and age had taken their toll. In 1813, the books jointly owned by the Lunar Society were auctioned off.

This description of the formal side of the Lunar Society in no way tells the tale, however. The most efficient way to understand who they were, and what they were about, is to go back to the intellectual author of such an effort as theirs, namely, Gottfried Wilhelm Leibniz (1646-1716), who wrote a series of documents from 1671 to 1716, amounting to blueprints for national economic development, and specifying the role of “Societies” and “Academies” to forge this process.

In his memorandum of 1671, “Economy and Society,” Leibniz wrote, “Thanks to these academies (or societies), which are institutions of research and development, with their own manufactures and commercial companies directly attached, the monopolies will be eliminated, because the academy will always offer a just, low price for merchandise; and quite often, in fact, these will become even less expensive, as new manufacturing activities are set up, where they do not presently exist. Notably, the trading monopolies will be eliminated . . . because the wealth of the traders is much too great, and the misery of the workers far too profound—a situation seen particularly in Holland, where the method of the merchants is to maintain the workers in a state of poverty and menial labor. . . . Trade cannot transfer anything which has not before been produced by manufacturing. And why must so many people be reduced to such poverty, for the sake of so few? The Society will therefore have as its goal to liberate the worker from his misery.”³

Thus did the Lunar Society function, in direct opposition to the spirit and practice of the imperial British East India and Dutch East India Companies of the day.

The ‘Lunar Men’

There are over a dozen “Lunar Men” who came to live, work, and collaborate directly in the greater Birmingham area; Jenny Uglow singles out five principals, which is fair enough. She traces their lives in great detail. A brief look at just a few of the individual activities and achievements of these five, and at the great successes of their collaboration in terms of promoting economic advance, gives the sense of the scope of the Society.⁴ They are all typical of the energetic, voluntarist *men of ideas*, who peopled Franklin’s networks of “American” conspirators in Europe.

Matthew Boulton (1728-1809). The son of a Birm-

ingham maker of buttons and small fixtures, Boulton came to build a vast manufacturing establishment in Soho, Birmingham. Through his firm of Small, Boulton & Watt, the steam engine was vastly improved, and came into general installation not only for pumping in mines, but for manufacturing, milling, and general use.

Josiah Wedgwood (1730-1795). Born into the trade of the Staffordshire potteries, Wedgwood made, and/or applied, a series of significant discoveries in heat, clays, minerals, etc., and using constantly improved organizations of production, established a vast pottery manufacturing operation which exists to this day. He made significant contributions to geology, mineralogy, and chemistry.

James Watt (1736-1819). Born and raised in Greenock, Scotland, among marine-serving instrument and rigging makers, Watt became a master at mechanical design, with wide experience among scientific circles at Glasgow and Edinburgh Universities. Giving great attention to heat, phase-changes of water, and other fundamentals, his work was critical to the Boulton partnership, in making improvements to harness steam power. Watt devised the separate condenser in 1765; and in 1781 received the patent for the rotary motion steam engine mechanism. The term “horsepower” as a measure of engine power was originated in 1783 by Watt, who had to work out a way to calculate royalties when he installed two Boulton & Watt engines at London breweries, to replace the horses they had employed.

Erasmus Darwin (1731-1802). After studying at the Universities of Edinburgh and Cambridge, he became a medical doctor at age 25, settling in Lichfield, the “mother of the Midlands,” where he practiced medicine for the rest of his long life, all the while doing research and writing on botany, geology, chemistry, medicine, poetry, and numerous other areas. He was most prominent in advancing the scientific classification of plant-life. Among his many published works, was a translation of Carl Lineaus’s *The Families of Plants*, published in 1787.

Joseph Priestley (1733-1804). An activist clergyman (Dissenter, i.e., non-conformist with the Church of England), Priestley did groundbreaking scientific work, besides maintaining schools for children (including the teaching of science) and other public services. He discovered 10 new gases (“airs”). In August 1774, he identified oxygen (co-discovered by Carl Wilhelm Scheele), and in a trip to Paris in October, he demonstrated his laboratory work of heating red mercuric oxide to release what he called this “new species of air,” to French chemist Antoine Lavoisier. Between 1772 and 1790, he published

six volumes on *Experiments and Observations on Different Kinds of Air*. He did similarly significant work on electricity, and at the request of Franklin, wrote a *History and Present State of Electricity*. Politically targeted for mob violence, he fled Birmingham in 1794 for Pennsylvania, where he continued laboratory work in Northumberland County, until his death in 1804.

Around this core in Birmingham, numbers of others collaborated in the Lunar Society. Uglow lists and describes, John Whitehurst (1713-1788); James Keir (1735-1820); William Withering (1741-1799); Richard Lovell Edgworth (1744-1817); Thomas Day (1748-1789); and Samuel Galton (1753-1832). Another noted figure was John Baskerville (1706-1775), the famous printer.

Special mention—it is covered in detail in Uglow’s book—goes to Dr. William Small. A Scottish doctor who taught at William and Mary College in Virginia (with Thomas Jefferson as a pupil), Small returned to Britain, and in May 1765, aged 30, arrived on Boulton’s doorstep in Soho, with a letter of introduction from Franklin, which described him as, “both an ingenious Philosopher, and a most worthy, honest man.” Small became a linchpin in the Lunar Society, and was also critical in furthering the steam engine and other projects, as a partner in the manufacturing firm of Small, Boulton & Watt.

The impact of these persons and the Lunar Society was vast, both in Britain and the new United States, as well as internationally. In terms of the critical measure of modern power supply, by 1800, Boulton & Watt had installed over 500 modern steam engines throughout Britain—from the old copper and tin mines of Cornwall (to pump out water), to the newly organized textile mills. In London, the Albion Mill, a demonstration steam-powered gristmill, caught the world’s attention.⁵

The Birmingham-Manchester-Lichfield area was transformed into a powerhouse for advanced manufacturing. The Lunar Society was directly involved in forging a canal-building program, which not only provided vastly improved inland navigation, but made coal available at half the pre-canal price, for steam power, and general use. A former apprentice in the shop of Matthew Boulton, John Gilbert launched the canal campaign, by working for the young Third Duke of Bridgewater, Francis Egerton, to cut a canal over his property, from the regional coal mines eastward to Manchester. This was done in 1761.

Lunar Society members spearheaded many other improvements. Dr. Small, his colleague John Ash, and others, saw through the creation of the New Hospital in Birmingham. Small, Baskerville, and others, saw that



reprinted from *The Lunar Men*



reprinted from *The Lunar Men*



reprinted from *The Lunar Men*

Franklin's Lunar Society collaborators launched the Industrial Revolution in England. Above (left to right): Erasmus Darwin, Joseph Priestley, James Watt. Below: Matthew Boulton's Soho Manufactory in Birmingham.



streets were widened and improved. The Lunar Men conducted agriculture-betterment studies, reported on new, advanced medical treatments such as digitalis (fox-glove), and, as political allies of the Franklin tradition, played leading roles in the movement to end slavery.

The Leibniz Continuity: Franklin and Raspe

Earlier in the 1700's, the writings of Leibniz, the chief advocate of this economic development approach, had been suppressed, not only in England, but in Germany and throughout the Continent. The fraud, Sir Isaac Newton, was fabricated as the official "authority" in science, as opposed to Leibniz; in philosophy and government, John Locke was offered as the "authority." But the dramatic success of the Lunar Society, attests to the efforts of Franklin and collaborators to defeat the

Newton/Locke frauds in science and government, and to restore Leibniz and his thinking.⁶ A short timeline of relevant facts, and connections between two major "outside" figures involved in the Lunar Society, makes the point—Benjamin Franklin (1706-90) and Rudolph Eric Raspe (1737-1794).

Franklin, born in Boston in 1706, was a direct heir to the Tudor Renaissance and Leibniz tradition, thanks most directly to the influence of Boston's Cotton Mather (1663-1728). Franklin himself ranked Mather's *Essays To Do Good* as seminal in shaping his own outlook. During his first foray to England, from 1724 to 1726, Franklin had a chance to meet first-hand many of the anti-Leibniz agents, for example, Bernard Mandeville, and Dr. Henry Pemberton, who was

preparing the third edition of Newton's *Principia*.

In the following two decades back in the American colonies, Franklin's many activities included founding societies for scientific investigation, public works (hospitals, defense, fire safety, etc.), and conducting his own research into electricity, heat, weather patterns, and other phenomena. He cultivated a wide international correspondence, and his works were published in many translations. In 1751, his, *Experiments and Observations on Electricity, Made at Philadelphia in America*, was published in London, and in 1752, in France. He summarized his outlook on the relationship between the expansion of knowledge and economic growth, in another work written the same year, *Observations Concerning the Increase of Mankind, Peopling of Countries, Etc.*

When, in 1757, he was back in London, this time it was as a world-renowned *philosophe*, and the official rep-

representative of the Assembly of Pennsylvania, probably the fastest-growing colony in the Americas. Right away, he was on the move to mobilize economic development circles in Britain.

In 1758, he went to Birmingham, on a tour he said aimed to “make the Acquaintance of those of Influence.” Whitehurst he already knew, from collaboration on clock-making. Matthew Boulton he met, with a glowing introduction about Franklin from John Michell, Professor of Greek and Hebrew at Cambridge University, who shared interests with Franklin on magnetic energy, earthquakes, astronomy, and other matters.

Franklin toured the Birmingham manufactories, met Baskerville, and went from home to home, taken by Boulton to visit his many friends. Franklin’s tour then continued on to Scotland and elsewhere, but in subsequent tours, in London meetings, and in correspondence, Franklin exerted a direct and major influence on the Midlands circle for years to come. For example, Uglow recounts Franklin’s 1771 visit to Birmingham in May, where he spent time with Erasmus Darwin, discussing phonetics, chemistry, and making pond-life excursions. Franklin encouraged and directed Joseph Priestley at every turn. And, he sent the young Robert Fulton to the Midlands, with a letter of introduction, to learn mechanics, canal-building, and steam-propulsion for potential naval use. Franklin and Boulton, beginning with their 1758 meeting on electricity and steam power, collaborated closely for the next three decades, until Franklin’s death in 1790.

In 1764, Franklin met in London with Dr. William Small, the Scots physician, whom Franklin had known in America. It was Franklin who “deployed” Small to go to Birmingham, which he did in 1765, becoming physician, confidant, and unofficial secretary to Matthew Boulton. In an indication that she has an inkling of the Society’s real history, Uglow says of this in her notes: “Sending envoys and setting up cells was an acknowledged aspect of Franklin’s proselytizing technique.”

Franklin’s introduction of the Leibniz advocate, the German, Rudolph Eric Raspe, into the Lunar Society circle, most dramatically shows the deliberate “proselytizing” involved. In 1766, while on tour on the Continent, Franklin made very important contact with those directly involved in restoring Leibniz. In Hanover, he met Raspe, whose own specialty was mineralogy, and who in 1765 had just edited and published the first edition of Leibniz’s suppressed *New Essays on Human Understanding*, a direct refutation of John Locke’s *Essay Concerning Human Understanding*. He also met Raspe’s friend and collaborator, Baron Gerlach Adolph von Münchhausen, whose name later gained notoriety because of Raspe’s

1785 book, *The Adventures of Baron von Münchhausen*, which recounted the fantastical exploits of the Baron’s nephew Hieronymus.

Then Franklin went on to Göttingen, there to meet Abraham Kästner in person, a leading student and defender of Leibniz and his methods.

Much more can be said about this trip of Franklin’s, and his network-building [SEE “Leibniz to Franklin on ‘Happiness,’” page 44, this issue], but regarding the focus on Franklin’s leadership of the Lunar Society, some simple facts of Raspe’s subsequent career make the point.

Raspe was soon to come under increasing political attack for his activities, and Franklin intervened in various ways, ending up with Raspe going into exile in England—arriving sometime in 1775, and eventually working for Boulton and Watt. Franklin accomplished this, even as he himself came under increasing fire. In January 1774, Franklin had been called before the Privy Council, and in May 1775, he returned to America.

In a mention of the Philosophical Club, founded in London by Benjamin Franklin and friends, Uglow lists members in 1775 as including Lunar Men John Whitehurst (now resident in London), Thomas Day, and others, and also, “their colourful new friend Raspe, geologist, gem expert, probable spy and anonymous author of *The Adventures of Baron Münchhausen*.” Uglow has only one other, perfunctory mention of Raspe in her book. But, in fact, Raspe worked with Boulton for the last dozen years of his life, beginning no later than November 1782.

As for Leibniz himself, Uglow makes only a single mention in her entire 588 pages. Nonetheless, for those committed to understanding and continuing the grand, strategic conspiracy of Leibniz and Franklin, you will find in this book many valuable leads to follow up the true story of how the modern world was brought into being.

1. See “industrial revolution” entry in *The New Palgrave: A Dictionary of Economics* (London, New York: MacMillan, 1987; first published 1894).
2. Anton Chaitkin, “The Secret History of the Industrial Revolution,” published in 3 parts, *The New Federalist*, March 3, May 12, and May 26, 1989 (Vol. III, Nos. 10, 20, and 22).
3. G.W. Leibniz, “Economy and Society,” *Fidelio*, Fall 1992 (Vol. I, No. 3).
4. For a review of the Lunar Society in strategic context, see Anton Chaitkin, “Leibniz, Gauss Shaped America’s Science Successes,” *Executive Intelligence Review*, Feb. 9, 1996 (Vol. 23, No. 7).
5. Philip Valenti, “Leibniz, Papin, and the Steam Engine,” *21st Century Science & Technology*, Summer 1997 (Vol. 10, No. 2).
6. See, Philip Valenti, “The Anti-Newtonian Roots of the American Revolution,” *Executive Intelligence Review*, Dec. 1, 1995 (Vol. 22, No. 48); and also David Shavin, “Leibniz to Franklin on ‘Happiness,’” p. 44, this issue.

Preface to Leibniz's *New Essays on Human Understanding* and Other Works

(1764)

Abraham Gotthelf Kästner

R.E. Raspe and A.G. Kästner had enjoyed several years of joint examination of Leibniz's manuscripts when, in 1762, Raspe announced the impending publication of a volume of these heretofore suppressed works. The volume was dedicated to Baron Gerlach Adolf von Münchhausen.

Kästner's Preface succinctly propounds the merit of Leibniz's scientific method. In particular, Kästner took pains to address the thuggish assault on science by Leonhard Euler, which he had fought for two decades. In 1761, in his "Letters to a German Princess," Euler had bragged about the 1747 "victory" over Leibniz's Monads.

This is the first English translation of Kästner's Preface. Its strategic significance is reported in "Leibniz to Franklin on 'Happiness,'" page 44 of this issue. Bracketed editor's notes, supplied by David Shavin, are at the end of the translation; the author's superscript footnotes appear at the bottom of the pages. Emphasis has been added.

That the real universe is something altogether different from the apparent one, is a truth that should no longer be in doubt since Descartes, who maintained, to the great astonishment of the philosophers of his time, that light and color have no similarity to the ideas that we form of them.¹ The metaphysics of Leibniz have always seemed to me to be based on this principle.

Those who accuse him of impenetrable obscurity [1] would find it quite clear, if only they would rid themselves of certain prejudices similar to the "intentional species" against which Descartes had to battle. [2] They maintain that the manner in which M. Leibniz has conceived the origin of extension is inexplicable. They prove by geometrical demonstrations, how absurd it is to look at a body as a sum of points. Can one blame for this absurdity, the person to whom the whole continent of Europe is indebted for the infinitesimal calculus? I say

this *continent*—in order to let them rejoice in that liberty, of which they are so jealous—

Deeply divided from the whole world are the British. [3]

It is not body which M. Leibniz composes from simple beings [4], but the phenomenon of extension, which he accounts for, by saying that we represent to ourselves, indistinctly, a great number of non-extended beings. The telescope shows us clusters of stars, where the naked eye sees only luminous spots. The spot is not composed of stars, as the whole is composed of parts: it is an appearance which offers itself to eyes too weak to distinguish the stars. So, the Elements [5] of Leibniz.

For those who have fought against them [6] with geometrical arguments—which, without doubt, Leibniz could have done as well as they—have they not wasted their time? And those who have claimed that the events of the *visible* universe could be explained by simple beings—would they not have done better by asking at the outset, *how* the sensation, which is excited in us by the

1. *Dioptrics*, Chap. 1 [Descartes, 1637].

sun's light, is born of an infinity of sensations of color, which no one before Newton had been bright enough to look for in a ray of sunlight? How can it be that a lady who might not even know the rule of three, feels harmony with a sensitivity at times more reliable than Euler's calculations of the ratios of vibrations? [7] Let us pursue these two examples, taken at random from an infinity of similar ones, to try to clarify the relationship between the phenomena and their causes [8]: this relationship must be infinitely simpler, than would be the relationship between the visible universe and its Elements.

The representative force, with which M. Leibniz has endowed his Elements, seemed dubious even to M. Wolff. Yet, this same M. Wolff had brought into the full light of day this truth—that the universe is a whole whose parts are so intimately connected, that one could not change the least thing, without changing the whole into a completely different universe; that it holds together the spider's thread with the same force which pushes or pulls the planets around the sun. This is how a French Philosopher and beautiful spirit² understood what the German Metaphysician had demonstrated by profound reasoning. Knowing this, could M. Wolff still doubt, that that which happens at each moment to each individual, so affects the universe as a whole, that the infinite mind sees in this, the universe that *is*, the only one to which an individual, such as he is, could be a part? [9]

If one were to say to someone who is not so well schooled in the science of numbers, that 23 is the 12th term of an arithmetic progression which starts with 1, he will find, first of all, that this progression is one of odd numbers. You need only put in place of the sequence and its given term, the universe and the individual. It is in this sense that I have always understood those “mirrors of the universe” of Leibniz [10], which seemed so ridiculous to many Philosophers, because these gentlemen had no idea how to find an entire sequence from one given term. M. Leibniz used the verb “to represent,” as he explains it himself in his remarks on the book of M. Locke now being published.³ The relationship of the circular base of a cone and its section is such that, if you know the one, you also know the other. It is thus, that we represent in mechanics, velocities and times by straight lines; thus, that a thermometer represents the warmth of the air, a barometer the weight of the atmosphere.

I had hoped that these reflections would not be altogether misplaced at the beginning of a collection of this great man's philosophical writings, extracted from his manuscripts, many of which are still kept at Hanover to

this day. It is up to those who will benefit from it, to acknowledge the protection always so graciously accorded the sciences by the enlightened Ministers to whom the King has confided the happiness of his domains [11], in the care of enriching the republic of letters with these works.

One could not have chosen an editor more worthy than M. Raspe, who combines a solid knowledge with satisfying insights, and who has made every possible effort to make this choice agreeable to the general public. It is for him to instruct the readers concerning some historical circumstances pertinent to this edition. As for me, having had, among many other duties, only a few days to write this Preface, first in Latin as the editor had wished, and then after that to recast it into French, as he thought to ask a little while later, I would hope that I will be pardoned if this Preface is found to be less worthy than the place it holds.

If only I may be permitted to add yet some few more thoughts to which the reading of the following passages has given rise.

In Part II, there is a discussion of the law of continuity in respect to the collision of bodies. M. Euler is of the same mind as M. Leibniz and has, happily, made use of this to calculate the laws of motion.⁴ [12]

It is also known that M. Leibniz distinguished the species of Ideas more rigorously than anyone before him.⁵ Hence, one would expect to see him sometimes correct M. Locke, a far less rigorous writer on these matters. Thus, in the investigation of simple Ideas, p. 77 [13]. The English Philosopher is as much beneath the German, as the opticians of earlier times, who mistook a ray of sunlight for a simple phenomenon, were beneath Newton. If M. Leibniz had written the history of the human mind, his work would differ from that of M. Locke, as the history of an insect described by Roesel, would differ from a rough draft done by Frisch. [14]

M. Poley enriched his excellent translation of M. Locke's book [15] with observations drawn from the Philosophy of Leibniz and of Wolff. It is a shame that these observations were not written in another language. Perhaps they would have been useful for some [British-DS] minds, who were too superficial to understand M. Locke, and who, in order to pass as Philosophers at very little cost, became extreme admirers of his—imagining him to have seen all truths, as the pedants of barbarous ages imagined it with respect to Aristotle. [16]

Subsequent to the time when the philosophers were

2. M. de Maupertuis, *Essay de Cosmologie* [1750].
3. Book II, Chap. 8, Sec. 12, p. 87.

4. *Histoire de l'Academie Royale de Berlin*, 1745, p. 37, 51.

5. “De cognitione, veritate & Ideis,” *Acta Eruditorum*, Leipzig, 1684 [Leibniz].

debating the question of the blind man, p. 92 [17], there was an experiment on this which was reported in the *Philosophical Transactions*.⁶ At first glance, it appeared to be more in opposition to M. Leibniz, than it was after a more thorough examination. The blind man, who wishes to recognize by sight the bodies that he had distinguished by touch, must, according to M. Leibniz, compare the effects that the surfaces of the bodies have on his two senses. This is what the blind man seemed to do after having been cured by Cheselden, when he took the cat into his hands, which he had not been able to distinguish well enough from the dog, when he was first beginning to see. The observers imagined that he was merely examining the cat with great intensity, whereas, in fact, he was examining it as much with his hands as with his eyes. No one thought of proposing to this young man an experiment with some surfaces as uniform as those of a sphere, or a cube; and it appears that this singular event lacked the presence of sufficiently philosophical observers. His judgement on the

paintings was just as Leibniz had predicted. [18]

It is not only nowadays that we have begun to ask if all the rotations of the Earth around its axis are equal,⁷ since M. Leibniz had the same doubt, p. 104. [19]

Are we to believe that, in the most immediately apprehended science [20], the first notion, that of figure, would yet be not well defined? This is nonetheless what is shown, p. 105. [21]

The reader will see by these examples, chosen randomly, whether these works by Leibniz merit the public's attention, and whether, as in the already known writings of the same author, they contain the seeds of truths, which will enrich the cultivation of the republic of letters.

Göttingen, September 1764

Abraham Gotthelf Kästner

Professor of Mathematics and Physics

—translated from the French by Nancy Shavin

6. *Philosophical Transactions* [Roy. Soc. London], No. 402; Robert Smith's *Compleat System of Optiks*, Book I, Chap. 5. [Also, Smith's "On Distinct and Indistinct Vision" was the cause of some debate and notoriety.—DS]

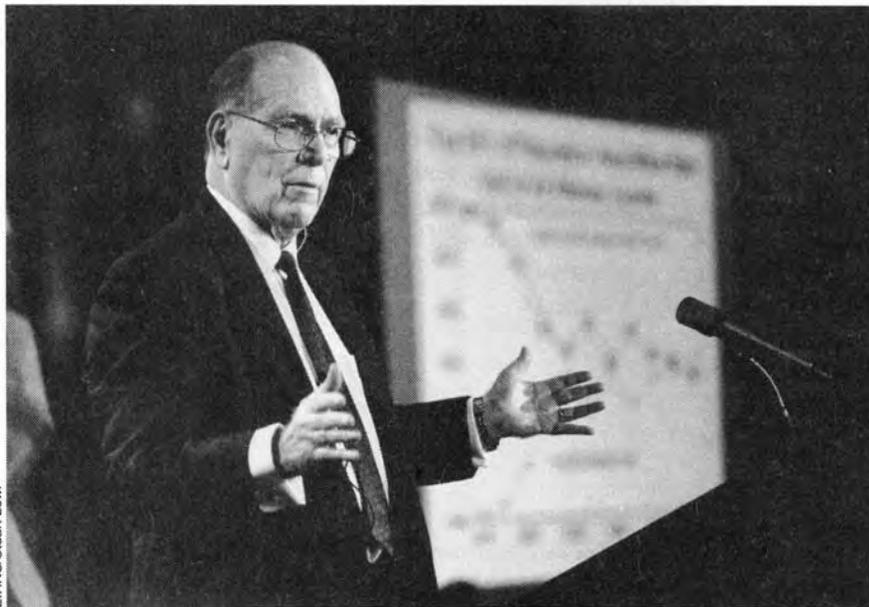
7. See the dissertation of M. Paul Frisius on the diurnal motion of the Earth, which has won the prize awarded by the Royal Academy of Berlin, 1756.



[1] In particular, Leonhard Euler's 1760/1 *Letters to a German Princess* and Voltaire's 1759 *Candide*, both attacks on Leibniz.
 [2] Medieval, scholastic term. Kästner picks up on Leibniz's attack, that "modern" Newtonians were reviving occultist appeals to innate qualities.
 [3] Latin in text: "Penitus toto divisos orbe Briannos."
 [4] I.e., the "Monads."
 [5] I.e., "simple beings" or "Monads."
 [6] "Elements."
 [7] Euler's 1739 *Tentamen novae theoriae musicae* and 1760/1 *Letters*. Kästner judos Euler's patronizing, "dumbing-down" approach to ladies. The ear and mind of a woman, or man, can distinguish harmonies, without a supercomputer counting vibrations.
 [8] I.e., where both phenomena and cause are in the visible universe.
 [9] Christian Wolff's problem with "representation" included his sensitive theory on the relatedness of the universe, that would not allow him to explain why he himself existed, that is, what God's mission for Wolff was. (Or, to make a business of representing Leibniz, is not to know Leibniz.) Kästner had fun counterposing the "French Philosopher" Maupertuis, to the "German Metaphysican" Wolff.
 [10] The "Monads."
 [11] Such is Kästner's description of the role of Baron Gerlach Adolph von Münchhausen, Minister to Hanover from the British Court, and leader of the faction for "happiness" for the body politic. (Pierre Beaudry has located a 1766 work by Kästner, in part on "happiness," entitled *Nouvelle Theorie des Plaisirs* by Sulzer and Kästner.) Münchhausen was key in liberating the Leibniz documents they published.
 [12] Kästner alludes to one of the last works written by Euler prior to

Maupertuis' arrival at the Berlin Academy in 1745, after which Euler was instructed by Maupertuis, effectively, that Leibniz was now to be treated as a public enemy. Hence, Kästner's reminder to Euler was probably a jab, not a compliment.
 [13] See "Of Simple Ideas," Book II, Chapter ii, in Leibniz's *New Essays*.
 [14] A.J. Roesel von Rosenhof's *Historia naturalis ranarum*, a massive work on the frogs and toads of Germany, was noted for the vivid artwork, capturing, e.g., muscles in action. J.L. Frisch's *Beschreibung von allerley Insecten in Teutschland*, also voluminous, was evidently known for its "just the facts, ma'am" style of drawings.
 [15] Heinrich Eberhard Poley's 1757 German publication of the 1709 abstract of Locke's *Essay*.
 [16] Kästner effectively blasts as medievalists, the English followers of Locke, who had such great pretensions as modern defenders of liberty!
 [17] Found in *New Essays*, Book II, Chapter ix, section 8.
 [18] William Molyneux, who was engaged in catty comments with Locke about Leibniz, proposed for public consideration: Would a blind adult, upon first being able to see, recognize by sight objects that he had learned by touch? In 1728, the British surgeon William Cheselden removed the cataracts from a 14-year old, who was observed as described above.
 [19] Found in *New Essays*, Book II, Chapter xiv, section 21. In 1749, the year after Kästner's translation of Cadwallader Colden's work, Colden made astronomical observations of the Earth's unequal daily rotations.
 [20] I.e, geometry.
 [21] Found in *New Essays*, Book II, Chapter xv, section 4.

LaRouche Delivers State of the Union Address 'To Solve Crisis, We Must Think as Citizens'



Presidential candidate Lyndon H. LaRouche, Jr. reviews global financial collapse during State of the Union address.

about saving this President, in his function as a sitting President, but also save the nation from the follies he might tend to commit without good advice, and good pressures. We must . . . start from a non-partisan view of this matter—to re-educate and steer a disoriented and incapable President, to become a successful President. Not for the purpose of re-electing him; but for the purpose of saving the nation. And I think we can find someone to replace him after that.”

In a stunning counterpoint to Bush’s sabre-rattling against Iraq in his later State of the Union, LaRouche warned that an Iraq war, while still not inevitable, if undertaken by the Bush Administration would be the “detonator” of a world-wide war, “the same kind of foolishness which we saw in the first two World Wars, . . . and in the Depression,” adding, “This must be stopped, now!”

Principles of Foreign Policy

LaRouche decried the fact that, around the world today, the United States “is being held in contempt in most nations and among most people in the world,” a contempt that “has been growing rapidly under the past two years of this Administration.” Noting that, after Sept. 11, 2001, there developed a great sympathy for the United States, which “is now dissipating, with the economic crisis, and the threatened war in Iraq—the Mideast War—being the principle drain . . . not only in what Mr. Rumsfeld calls ‘Old Europe,’ but throughout most of the world as a whole,” with the U.S. now viewed as an imperial power. “The United States is, today, the world’s most hated nation. And that is not good for our national security.”

As the United States and the world stood poised on the brink of war and economic catastrophe, Democratic Presidential pre-candidate Lyndon LaRouche, in a two-and-one-half-hour State of the Union address Jan. 28, outlined a direct path out of the crisis—just hours before President George W. Bush was to give his State of the Union address that evening. Speaking to an international audience estimated at more than 1,000 people—250 gathered in the ballroom of a Washington, D.C. hotel, the rest listening over the Internet—LaRouche offered a *tour d’horizon*, addressing the crisis and its solutions in every part of the world.

Among those attending the Washington event were 18 diplomats from 15 countries, among them Russia, Saudi Arabia, Poland, Kazakhstan, Indonesia, Argentina, Greece, Japan, Benin, Korea, China, Oman, Turkey, and Paraguay. Also represented at the hotel were the National Black Caucus of State Legislators; the Middle East Policy Council; the American Muslim Council; Chinese-American organiza-

tions; several representatives of the international media; and others. About 50 representatives of the East Coast LaRouche Youth Movement also attended.

Let Us Save the Nation

“At the present moment, we’re on the verge of—or actually in the process of—the greatest financial collapse, worldwide and especially in Europe and the Americas and Africa, in more than a century,” LaRouche said at the outset. “We are in peril,” he added. “That is the state of the Union.” LaRouche said he hoped that Bush would hear what he had to say, because the President and his advisers “haven’t the slightest idea what to do.”

But, LaRouche stressed, the Presidency is an institution made up of many parts, including active and retired military, intelligence, people in and out of government, who influence policy. Bush’s “tragedy, his downfall, would be this nation’s downfall, and your downfall,” LaRouche warned. Therefore, we must all start thinking as citizens. “For the two years to come, let us think

A 'Unique Nation'

"But there's another aspect to the United States," LaRouche observed. The American Republic is unique; it is an historical exception, "the first and only true republic conceived in modern history," and it is the legacy of *that* America, which continues to provide for our nation a residue of good will in every part of the world. "The influence that I have in the world at large, is because it's recognized in leading circles in many parts of the world, that I represent *that* United States; that United States which has great credit throughout this planet; a great credit to which most nations would respond happily, were I sitting in the White House today. Were I in the White House today, this country would suddenly be overrun by friends. Some of the friends who tend to hate us right now."

Critical Areas

The bulk of LaRouche's address was devoted to elaborating four critical areas: the causes and nature of the present economic crisis; the emergency recovery measures which must be taken immediately; the global strategic conflicts which overlap this economic crisis; and the urgent measures to correct the potentially fatal blunders which have been included under current, panic-driven notions of "Homeland Defense."

LaRouche proposed to return to the principles of the Constitution, "to go back to the original intention of the United States, the characteristic of the United States, which makes us beloved by those who observed our good things over the past." LaRouche highlighted the Preamble, which he said contains three essential principles: the General Welfare; the perfect sovereignty of government of the people ("no independent central banking system!"); and that "the Constitution is a future-oriented institution, dedicated to the well-being, primarily, of our children, grandchildren, and great-grandchildren."

These same principles must be applied to solving the existential crises facing entire nations around the world today.

The full webcast can be found at www.larouchein2004.com.



Lyndon LaRouche, accompanied by Mrs. LaRouche, lectures at the University of Jaipur.

In India, LaRouches Call for Infrastructure Development

During a visit to India Jan. 10-22, Lyndon H. LaRouche, Jr., accompanied by his wife, Helga Zepp LaRouche, told audiences in Delhi, Calcutta, and Jaipur that India must develop its infrastructure quickly, by undertaking large-scale national projects to strengthen its power, water retention, and distribution systems, public health, education and mass transportation, particularly by modernizing its railroads.

During his visit, LaRouche addressed the Maulana Abul Kalam Azad Institute of Asian Studies (MAKAIAS) in Calcutta on Jan. 12; the University of Jaipur on Jan. 21; and Jawaharlal Nehru University in New Delhi on Jan. 15, and the Institute of Economic Growth, the braintrust of India's Planning Commission, there the next day. On Jan. 20, he also addressed a group of senior professors from the University of Delhi, lawyers and senior administrators of the New Delhi Municipal Corporation at the India International Center. In addition, he also held a series of private meetings and dinners with high-level Indian politicians, academics, and military strategists.

In his various presentations and private meetings, LaRouche noted that the world is without adequate leadership; that the international economic and financial system is bankrupt; and that the main reason for the eagerness of the war party within the Bush Administration to wage war against Iraq, is to destabilize the Eurasian landmass.

During his discussions, it became evident that India's economic developmental policies have become highly unfocused. While India has succeeded in maintaining a 5.5-6.5 percent growth in recent years, India was less vigilant in concentrating on the development of its infrastructure.

LaRouche pointed out that India has a lot more work to do to preserve the water that falls in the form of precipitation during the seven- to eight-week period annually in the monsoon season. Rainfall in India is distributed unequally; whereas the Himalayan foothills receive huge amounts of rainfall during the monsoon season, some areas receive very little. It is for these reasons that the present Indian government, after shelving the project in 1972, is now proposing

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LaRouche in Italy

'Restore Moral Economic Policy'

Lyndon LaRouche travelled to Italy Sept. 22-24, 2002 for a series of public meetings in the country whose Parliament has called for a "new financial architecture" along the lines of LaRouche's proposal for a New Bretton Woods.

During his visit, LaRouche addressed members of the Lombardy Regional Council, an association of Catholic Journalists, and an international conference at the Milan "Europe House," an association of entrepreneurs, professionals, and politicians. Then, on Sept. 25, LaRouche was officially received by the Captains Regent of the Republic of San Marino, where he addressed two meetings of politicians, bankers, and government officials.

LaRouche explained how the drive for war against Iraq had been temporarily derailed, and emphasized that it was now necessary to make major changes in the institutions of Europe and the U.S., in order to reverse the disastrous effects of the economic policies of the past 35 years. "The world is now in the worst systemic



Republic of San Marino

Lyndon LaRouche (left) with leaders of the Republic of San Marino, Captains Regent Mauro Chiaruzzi (right) and Giuseppe Maria Morganti (far right).

crisis in centuries," he told the participants at the Europe House event. "This is a general breakdown crisis," which represents "a failure of existing institutions, not

a normal conjunctural problem within them. . . . We have destroyed the culture upon which the successful development of European civilization depended.

Budapest Meetings: Economics, Immortality



Lyndon LaRouche keynotes seminar organized by the Hungarian Academy of Sciences, Hungarian Economic Association, and Schiller Institute, at the Ministry of Finance, Budapest.

The quality of leadership required to bring mankind out of the current crisis, was the subject of an impassioned speech by Lyndon LaRouche, at a major Schiller Institute event in Budapest, Hungary on Dec. 12, 2002. LaRouche was addressing 120 people, including youth, at the St. Lazslo Academy.

After contrasting the inspiring leadership of Jeanne d'Arc, as against the bungling of Shakespeare's Hamlet, LaRouche summarized the role of leadership in this period of the collapse of the international financial system. The physical economy must be saved, LaRouche said, but to achieve that, popular opinion must be changed. "As the case of Schiller's portrayal of Jeanne d'Arc illustrates the point," he concluded, "you must inspire people with love, to desire to free themselves from the degra-

We've engaged in a vast destruction of essential capital, of infrastructure, industry, and agriculture, upon which our prosperity had depended. Therefore, we have to change the system."

LaRouche called on the nations of Europe and Asia to agree on great projects for the development of the Eurasian continent, and called on the U.S to return to the policies of economic development to promote the "common good," as typified by the work of great leaders such as Benjamin Franklin and President Franklin D. Roosevelt.

LaRouche's return to Italy comes just two months after the Italian House of Deputies took up the proposal for a New Bretton Woods, in a discussion prompted by the chaos engulfing Argentina. On Sept. 25, the Deputies approved a resolution calling for creation of a "new financial architecture," in order to "support the real economy and avoid speculative bubbles." This vote broke open international discussion of the economic and financial crisis, in a period when the "Chickenhawks" in the Bush Administration were heavily pushing the neo-imperial "Clash of Civilizations" plans of Zbigniew Brzezinski and Henry Kissinger.

ation of popular opinion, and to demand leaders who are committed to the principle of immortality. A national leader who's not committed to immortality, is not capable of *morality*, in response to the challenges of this time."

A New Bretton Woods

Earlier that day, LaRouche had keynoted a quite different kind of meeting, a seminar organized by the Committee on Finance of the Hungarian Academy of Sciences, in cooperation with the Schiller Institute and the Hungarian Economic Association. The seminar was held at the Protocol Room of the Ministry of Finance, and brought together a highly distinguished group of about 20 professionals, including Prof. Tamas Bacskai, former chief economist of the Hungarian Central Bank, who chaired the event.

Other speakers included Prof. Hajna Lorinc-Istvanffy (Budapest University of
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Civil Rights heroine Amelia Boynton Robinson is interviewed by Vatican Radio in Rome.

Amelia Robinson Brings Peace, Development Message to Italy

Schiller Institute vice-chairwoman Amelia Boynton Robinson, the 91-year-old Civil Rights heroine, returned to Italy in November 2002, to press that nation to join Lyndon LaRouche's fight to stop the "Chickenhawks" in the Bush Administration and their planned war against Iraq, and to implement LaRouche's New Bretton Woods monetary and financial proposals.

Mrs. Robinson began her trip Nov. 12, 2002 at a conference organized by the Methodist Church in Rome, and chaired by Paolo Naso, director of the magazine *Confronti*, on the role churches should play to stop the war on Iraq and the "Clash of Civilizations."

Mrs. Robinson was interviewed by Italian national television Rai Due, in its transmission "Protestantism." The second channel of Rai Due also interviewed her.

She spent two lively hours with 80 students of languages and literature at the State University "La Sapienza" in Rome, whose teacher had interviewed her in September for the Italian daily *Il Manifesto*; later in her visit, she addressed the Faculty of Political Sciences at the University.

The next day, Mrs. Robinson was

received officially at the International Fund for Agricultural Development, a United Nations-affiliated organization representing 80 nations, at a luncheon with its leadership and public meeting with its 80-person staff. In the afternoon, she spoke at the Casa delle Donne (House of Women), which hosts 12 women's organizations; there she was introduced by Marguerite Lottin from Cameroon, who represents the Intercultural Center Griot in Rome.

'Month for Peace'

On Nov. 15, Mrs. Robinson was received by the Mayor of Lari (Pisa) and two other mayors of the Tuscany region, for their official "month for peace." She spoke at Lari schools, and at a meeting of 200 citizens of Tuscan cities, organized by the Lari Buddhist Center.

On Nov. 17, Mrs. Robinson moved on to the nearby Republic of San Marino, an ancient independent republic still governed by two Captains Regent, representing two opposing political factions, who govern together, according to an ancient Renaissance tradition, to avoid a dictatorship. They received her with all honors in the ancient government palace.

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LaRouche Returns to Mexico!

For the first time in 20 years, on Nov. 4, 2002 Lyndon LaRouche arrived in Mexico. LaRouche had visited our closest southern neighbor four times between 1979 and 1982, but when President José Lopez Portillo seized control of national credit from the hands of Wall Street in 1982, Wall Street blamed LaRouche. LaRouche had met with Lopez Portillo that May, and in July, had outlined his famous “Operation Juarez” strategy for an Ibero-American debt bomb and Common Market. Henry Kissinger vowed that LaRouche would never be allowed to visit Mexico again.

LaRouche visited Saltillo, the capital of the northern state of Coahuila, which borders Texas. During his stay, he delivered a major address at the Autonomous University of Coahuila (U.A.C.), the state’s public university, on “Alternatives in Light of the End of Globalization”; held a press conference attended by 18



Lyndon LaRouche answers questions from the press, Saltillo, Mexico, November 2002.

media; gave an exclusive half-hour interview to the leading TV newscaster of the nearby city of Monterrey, whose show is viewed throughout Northern Mexico; and was received by the state’s Govern-

nor, Enrique Martínez y Martínez.

In his meetings, both public and private, LaRouche pointed to the urgent need for large-scale development of basic economic infrastructure—power, water, and rail—in the Southwestern U.S. and Northern Mexico, as a politically practicable approach to restoring friendly U.S.-Mexican relations, as well as providing needed employment. Among LaRouche’s private meetings, was a gathering of 45-plus youth who came from several cities across Mexico to meet with him.

At the welcoming ceremony at U.A.C., both the Dean and former Dean of the University spoke on the importance of statesman/scientist LaRouche’s visit. Coahuila’s Secretary of Education was introduced, and Dr. Rafael Arguello, U.A.C.’s Director of Graduate Studies and Research, read a *curriculum vitae* of LaRouche, emphasizing his contributions to science, economics, and politics.

LaRouche’s U.A.C. presentation was the center of the trip. Not only did over 450 students, researchers, faculty, invited dignitaries, and members of the LaRouche’s Movement from the area attend the presentation; it was also broadcast simultaneously to the U.A.C.’s campuses in two other cities, and to classrooms in four other state universities (Tamaulipas, Sonora, Guadalajara, and Zacatecas), and was broadcast live on the Internet.

Robinson

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San Marino’s Minister for Culture displayed the most important paintings and statues of the government palace, including a statue of Abraham Lincoln, who wrote a letter to the Republic during the Civil War. San Marino government TV ran a report about Mrs. Robinson’s visit on its prime-time news, under the headline “Angel of Rights.”

In Rome Nov. 18-19, Mrs. Robinson held a joint press conference with the “Civil Disobedients,” an organization which fights globalization and the Iraq war. Just before the press conference, she addressed a packed meeting of students at the most famous secondary school of Rome, the Liceo Giulio Cesare, with 80 enthusiastic youth 16-18 years of age.

Before leaving Italy, Mrs. Robinson was interviewed by Vatican Radio.

Budapest

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Economic Sciences and Public Administration), Prof. Katalin Botos (Director of the Doctoral School of the Peter Pazmany Catholic University), Tibor Erhart (Ministry of Finance head of department), Lothar Komp (*EIR*, Germany), Prof. Gusztav Bager (Deputy General Director of the College of Szolnok), Miklos Szabo-Pelsoczi (scientific adviser of the Institute for World Economy, Hungarian Academy of Sciences), Prof. Janos Plenter (former Ambassador of Hungary to Canada), and Dr. Nino Galloni of the Italian Ministry of Labor.

The topic under discussion was “The World Economy in Crisis: Need for a New Bretton Woods.” LaRouche’s presentation, “The Science of Physical Economy Today,” led off with a warning that no institution in the United States, political or economic, was prepared to deal with the dramatic economic shifts currently underway. He continued, “I can not promise that those institutions will come to their senses, but I have strong reasons to believe that remarkable improvements in thinking might occur, even rather suddenly, just as we have, recently, averted a threatened new Middle East war, if only temporarily.”



Youth Movement Demands Legislatures Bring in LaRouche

Delegations from the LaRouche Youth Movement are sweeping state capitals to demand that Democratic Presidential pre-candidate Lyndon LaRouche's solutions to the states' fiscal and economic

crises be put into effect. Since December, the youth have "invaded" legislative offices for meetings in Sacramento, Lansing, Harrisburg, Richmond, Annapolis, Olympia,

Trenton, and Austin. **Above:** Youth rally and leaflet legislators in Annapolis, Md. **Below:** Rallies at State Houses in Harrisburg, Pa. (left) and Sacramento, Cal. (right).



India

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to harvest the rainwater, and transfer surplus water from water-surplus river basins to water-short river ones.

India-China Cooperation

LaRouche also called for India-China collaboration on a long-term basis to develop and interlink their infrastructure. Both countries have developed the entire nuclear fuel cycle, and are producing small-size nuclear reactors for

generation of commercial power. A collaboration in this area, to expedite large-scale manufacture of nuclear reactors for internal use, will help both nations meet their growing electric power requirements.

He made it clear that Europe is increasingly dependent on the development of the Asian economy, in which China and India are the two dominant members. This is why the Europeans are showing increasing eagerness to share technologies with both China and

India, as evidenced by the recent success of China in building the first commercial maglev transportation system, running from Shanghai to the Shanghai Airport, using German technology.

It also became evident to Mr. LaRouche during his visit, that although poverty is crippling a very large section of the population, and criminalizing the poor, the Indian leadership has not implemented the necessary developmental measures which would reverse this process.

Marianna Wertz: The Beautiful and the Sublime

Marianna Wertz, born Aug. 14, 1948, died on Dr. Martin Luther King's birthday, Jan. 15, 2003. Marianna, who was vice-president of the Schiller Institute in the U.S., was not only a *beautiful soul*, but in her fight not only for her own life against disease and death, but in her selfless fight for justice for all humanity in association with Lyndon H. LaRouche, Jr., she was what the German poet Friedrich Schiller described as a *sublime* individual.

As Helga Zepp LaRouche wrote in a message to her funeral on January 20: "To Marianna, My Little Sister in Eternity, You were the soul of the Schiller Institute in America, and the reason why you chose that task is because you felt a complete affinity with the sublime Idea of Man of the poet, whose name is the metaphor for our work."

A dear friend of Marianna's reported that his father, now deceased, kept the following statement by an unknown author on his desk:

"Man's dearest possession is his life, and since it is given him but once, he must live so as to feel no regrets for years without purpose, so live as not to be with shame of a cowardly and trivial past."

As Marianna told me, her husband, and several others in her final days, she had no regrets about how she had lived her life: she felt completely blessed by her association with the political movement of Lyndon LaRouche, by knowing Lyndon and Helga LaRouche personally, and by our marriage. In fact, she said that she could not conceive of a life more blessed than the one she had lived.

On the Front Lines

Marianna and her brother Anton Chaitkin were raised in an intensely political family. Their father, Jacob Chaitkin, had led a boycott against the Nazis during the 1930's and had successfully sued the Wall Street partners of the Nazi government on behalf of American bondholders. She



Courtesy of William F. Wertz, Jr.

IN MEMORIAM

attended Alexander Hamilton Elementary School in Pasadena, California, and was shaped politically by the Franklin D. Roosevelt views of her parents. In fact, in high school, when she became head of the Girls' League, she succeeded Anne Roosevelt, the daughter of Franklin and Eleanor's son, James Roosevelt. The last book she was reading before cardiac surgery on January 2, was a biography of FDR.

Marianna quite naturally joined the political movement of Lyndon LaRouche in 1971, after Nixon dismantled the post-World War II Bretton Woods System established by Roosevelt. She ran for political office herself in Seattle, Washington in 1975, winning the primary election for an unexpired City Council seat.

Shortly after our marriage during the middle of that campaign, Marianna was diagnosed with Hodgkin's disease, at age 27. During the rest of her life, Marianna fought disease as she politically fought the financial oligarchy. Even as she suffered nausea from chemotherapy, she campaigned publicly against the attempt to legalize

In December 1983, Marianna successfully climbed to the top of Brunelleschi's Dome in Florence, Italy. Twenty years later, while in the hospital with congestive heart failure, she studied Bruce Director's class on its method of construction.

marijuana for so-called medical use.

Although she combatted the cancer in 1975, and defeated it when it returned in 1982, she had to contend with the after-effects of radiation treatment and chemotherapy. In 1982, she had to undergo a double-bypass heart operation, following a heart attack caused by the earlier radiation. Over the course of the succeeding years, she had four hip operations stemming from chemotherapy, including the last one on our 27th anniversary, Oct. 29, 2002. Finally, she was diagnosed with aortic stenosis and underwent open-heart surgery at Johns Hopkins Hospital, in Baltimore, Maryland on Jan. 2, 2003.

Through all these ordeals, including my unjust imprisonment along with Lyndon LaRouche and others in 1989 in a political railroad, Marianna never retreated from the political fight for justice for all. She always remained optimistic. She always thought, not of herself, but of how she could help others, even in the smallest of ways.

When Lyndon LaRouche and his associates were persecuted, she travelled internationally, despite need of a hip replacement, to mobilize support for LaRouche's exoneration under the auspices of the Commission to Investigate Human Rights Violations. She took on ending capital punishment as a personal mission. Not only did she visit me weekly in prison, but she wrote articles in the *New Federalist* and *EIR* against the injustices of the U.S. criminal justice system, the murderous policies of the HMO's, and the inhumanity of the Welfare Reform Act

of 1996. Later, she reached out to many prisoners, among others, who responded to the truthfulness of her articles.

To the Mountaintop

Marianna was sustained in the face of adversity by a passionate love of Classical culture. She played the violin, until the effects of chemotherapy on her shoulders forced her to abandon it.

She was a participant in the founding of the Schiller Institute in 1984, and was one of the original signers of the statement issued by Helga Zepp LaRouche calling for the Inalienable Rights of All Mankind.

During the late 1980's, having learned German on her own, she joined me in translating the works of Friedrich Schiller. Difficult poems that I would not even attempt, she translated beautifully—for example, "The Song of the Bell," "The Artists," "The Walk," "Shakespeare's Shade," "The Dance," "Pegasus in Yoke," and "The Glove." Although neither of us was satisfied with our ability to recite poetry or perform drama, she nonetheless infused her mind with the most beautiful poetry and drama, just as she also strove to master *bel canto* singing.

As Helga Zepp LaRouche wrote: "Your translations of Schiller's works prove that you are a true poetess, fulfilling the standard set by Schiller, that one has to be a poet in two languages, if one wants to translate poetry adequately. I will always have in my mind, how movingly you recited the poem 'Hope,' which gave us a mirror into your beautiful soul. A beautiful soul, a person for whom passion and duty, freedom and necessity are the same, that is exactly how you have lived your life."

Moments before he heard the news of Marianna's death, Lyndon LaRouche spoke to an audience in India about this same quality of the sublime in reference to Schiller's Jeanne d'Arc:

"Jeanne d'Arc made possible modern European civilization. Without her action, it would not have occurred. She was a simple farm girl, who went to her stupid king. She said: Stupid king. God sent me to you, to tell you: Become a real king! She said, God wants you to become a king. So she went out and commanded

troops, won battles, and then was betrayed by the king. She lost the fight, because she was betrayed, but she refused to submit, at the point of being burned alive. As a result of her courage, and death by the inquisition she inspired France to throw the British out of France, successfully, and also inspired and contributed to the Renaissance."

Marianna was such a simple and courageous girl, who overcame her fears and fought for the truth. When other associates of LaRouche fled out of fear into narrow-minded family life, or otherwise fled from the necessary political and intellectual fight, she, with all of her physical infirmities, insisted upon being on the front lines.

Even as she was in the hospital being treated for pulmonary blood clots and congestive heart failure, she continued to work intellectually to master the ideas needed to teach the LaRouche Youth Movement. During her last illness, she was researching an article on how to produce geniuses. Her list of geniuses included Lyndon LaRouche, Leonardo, George Washington Carver, Gauss, Ben Franklin, Socrates, Schiller, Beethoven, and Kepler.

Marianna's passion for justice also led her to develop a close friendship and collaboration with Civil Rights heroine, Amelia Boynton Robinson. She edited Amelia's book, *Bridge Across Jordan*. But,

more than that, she made it possible for this beautiful gem to shine upon a world stage, when the world so needed a burst of sunlight. She even helped her to walk.

As Amelia wrote on hearing of Marianna's death: "Marianna was like a daughter to me, and a friend, and the best editor you could ever imagine. She was a combination of everything good, and she did it all so well. I can imagine angels coming to Marianna, telling her that God is waiting for her now. It takes away a lot of our darkness and despair, to know that He has relieved her of her pain and tribulations. She's gone to a higher ground, and knowing that takes away our sadness."

Like Martin Luther King, Jr., on whose national holiday she was buried in Leesburg, Virginia's Union Cemetery, in her 54 beautiful years, she had "been to the mountaintop."

As Friedrich Schiller writes in *On the Sublime*: "Only when the sublime is wedded with the beautiful, and our receptivity for both has been cultivated in equal measure, are we perfected citizens of nature, without for this reason being its slaves and without frittering away our rights as citizens in the intelligible world."

Marianna has done her job. Now it is up to each of us to spend our talents equally well.

—William F. Wertz, Jr.



Despite her hip replacement, in 1992, after I had been released from prison, we stood together high in the Bavarian Alps. We had been to the mountaintop. We had tasted Heaven.

Who Really Owns ‘Your’ Culture?

*“Oh, Freedom, Oh Freedom,
Oh, Freedom over me.
An’ before I’d be a slave,
I’d be buried in my grave
An’ go home to my Lord an’ be free.”*

(Traditional, arr. by Hall Johnson)

This song was one of the anthems of the Civil Rights movement, and it is an expression of one of the powerful ideas we’ve been discussing, starting with Lyndon LaRouche’s address this morning, with his presentation of the principle of the Sublime. The Sublime begins with the idea that you have a mission in life, and that mission is to achieve true freedom, not just for yourself, but for all mankind.

However, the question of freedom, what is true freedom, is one that my generation—the Baby Boomers—has so distorted, that most of you have no idea what that word really means. What I will discuss tonight is how, by examining our current diseased culture, from the standpoint of true, Classical culture, we can get an answer as to what freedom really means. In particular, we will investigate the centuries-long battle over the most fundamental question faced by human civilizations, namely, “What is the nature of man?”

To answer this, we will take up the question that I have put up here on the board: “Who owns your culture?” Most of you do not know the origins of what you think is your culture. By the end of this presentation, you may be very upset to find out that you don’t own it, it is not

This article is adapted from a November presentation to a Los Angeles regional cadre school, held in the mountains near Hemet, California. The cadre schools are quarterly conferences attended by members of, and potential recruits to the LaRouche Youth Movement. Author Harley Schlanger is Western States’ spokesman for Presidential candidate Lyndon H. LaRouche, Jr.

‘I refuse to accept despair as the final response to the ambiguities of history. . . . I refuse to accept the idea that man is mere flotsam and jetsam in the river of life, unable to influence the unfolding events which surround him.’

—Dr. Martin Luther King, Jr.



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yours, and, in fact, it is poisonous to you, it makes you a slave of your “f-e-e-lings.” And to the extent that you embrace any aspect of this modern culture, and claim it as your own, you have no chance of being free, as you are embracing your own slavery.

So that is what we are going to be investigating this evening.

Martin Luther King and the Dignity of Man

Let us begin with Dr. Martin Luther King, Jr., who did understand this dilemma, of the necessity to lift people up out of their backwardness. As Lyn said this morning, Dr. King was a sublime being. He lived for the ages. He paid back his debt to those who went before him. And he lived for the future. He knew his future might be short, which is why he was free, because no one could take anything away from him. The only thing that could be taken from him was his life. Once he decided, that, if necessary, he would give his life for the cause, he was totally free.

This is a section of a speech that Dr. King gave when he received the Nobel Peace Prize in Oslo, on Dec. 10, 1964:

“Civilization and violence are antithetical concepts. Negroes of the United States, following the people of India,

have demonstrated that non-violence is not sterile passivity, but a powerful moral force which makes for social transformation. Sooner or later all the people of the world will have to discover a way to live together in peace, and thereby transform this pending cosmic elegy into a creative psalm of brotherhood.

“If this is to be achieved, man must evolve from all heathen conflict a method which rejects revenge, aggression, and retaliation. The foundation of such a method is love. The torturous road, which has led from Montgomery, Alabama, to Oslo, bears witness to this truth. . . .

“I accept this award today, with an abiding faith in America, and an audacious faith in the future of mankind. I refuse to accept despair as the final response to the ambiguities of history. . . .

“I refuse to accept the idea that man is mere flotsam and jetsam in the river of life, unable to influence the unfolding events which surround him. I refuse to accept the view that mankind is so tragically bound to this starless midnight of racism and war that the bright daybreak of peace and brotherhood can never become a reality. I refuse to accept the cynical notion, that nation after nation must struggle down the militaristic stairway into the hell of thermonuclear

destruction. I believe that unarmed truth, and unconditional love will have the final word in reality. This is why right temporarily defeated is stronger than evil triumphant.

"I believe that even amidst the day's mortar bursts, and whining bullets, there is still hope for a brighter tomorrow. I believe that wounded justice, lying prostrate on the blood-flowing streets of our nation, can be lifted from this dust of shame, to reign supreme among the children of men."¹

Now, what you hear, from Dr. King, is an expression of cultural optimism, an expression of the kind of courage necessary to move this nation ahead, to take on the racism that existed in the South, enforced through the so-called Jim Crow laws. There are probably very few of you who grew up in the South, who know this history. Are there any of you who lived in the South? And how many of you lived in the South in the '50's and '60's? (Laughter) I didn't think so.

When Dr. King began his organizing, he could not stay in hotels in most major cities. He could not eat in many restaurants. If he wanted a drink of water, he had to go to a fountain that said, "Colored Only." If you were audacious enough to go to the Board of Registrars and ask to register to vote, there was a chance that a cross would be burned in your yard, that you would be beaten, that dogs would be unleashed on you. And yet, there were people like Amelia Boynton Robinson of the Schiller Institute, the woman who has adopted Lyndon and Helga LaRouche as her godchildren, who took up this fight, even before Dr. King. Amelia began organizing for the vote in the 1930's, and she was the one who brought Dr. King to Selma, Alabama in 1965, to begin the final march toward victory, with the Voting Rights Act. Amelia and Dr. King exemplify the principle of the Sublime; the fight for a better humanity regardless of the danger, based on the commitment to bring out the best in everyone.

What Is Human Nature?

The question of art and culture is really a question of, "What is the nature of man?" Now you heard Lyndon

LaRouche say this morning that all human beings are born good, or with the potential to become good. But many of you may believe, if you are being honest, that we have more in common with animals than we do with the divine potential which we ascribe to human beings. This is what is taught to you in your college classes, what you imbibe in this culture: the popularized Darwinian theory of evolution, or Social Darwinism, which was essentially plagiarized from Thomas Hobbes, the belief that all men are beasts, that life on this planet is short, miserable and brutish, that it is a

If one wishes to halt human progress, the first step is to degrade the image of man within a culture, to convince humans that we are no different from animals; that our primary concern is sensual: to seek pleasure, and avoid pain.

battle of survival, a struggle of each against all.

Now, that may appear to be an accurate description of most of human history. But there have been people throughout human history, such as Dr. King, who have not only demonstrated, through their own actions, that man "is created in the image of God," but have fought throughout their lives for that concept of man in other people. And to fight for that, to say to people, especially to those who are oppressed, "You have been created in the image of God and, therefore, must get off your knees and fight for your rights," can get you killed, as it did Dr. King.

The central force in history that wishes to impose the Hobbesian/Darwinian view of man, which acts against sublime leaders, acts to destroy cultures, and destroy nation-states, to keep man enslaved as though he were merely human cattle, is the oligarchy, once a feudal, landed nobility, today predominantly operating as a financial oli-

garchy. That elite, the oligarchy, the ruling families, believe they were born to rule; and that they were bred to be better than the human cattle, over which they must rule. This idea, that because of one's lineage and breeding, one is better, has been imposed on man throughout history. But, in order for that to be accepted, it is necessary for that oligarchy to reduce human beings to believe that they are no different than animals, to accept that there is nothing which differentiates them from animals, and that, in fact, humans beings are creatures of the senses; that we are controlled by sense perception—just as animals are.

How do we know that this is not true? As Lyndon LaRouche emphasized this morning, it is because individual human beings have the capacity to discover universal physical principles, and can communicate to others the method by which that discovery was made, so that the discovery can be applied to increase the power of man over nature, which is why man alone is capable of increasing his species' potential relative population density. No animal, which is limited in its experience of the physical universe to sense perceptions, can do this.

Now the purpose of art, the purpose of culture, more broadly, is to enable you to more profoundly and effectively communicate the quality of mind required to make such scientific discoveries, so that others may make the same discoveries in their own minds. All the advances of human civilization have depended on this kind of fundamental breakthrough in what we call the arts.

If one wishes to halt human progress, the first step—which has been employed repeatedly by oligarchical forces—is to degrade the image of man within a culture, to convince humans that we are no different from animals; that our primary concern is sensual: to seek pleasure, and avoid pain.

This was the essence of the "counter-culture" of the 1960's, the cultural paradigm shift, in which scientific and technological progress came under systematic attack, and we were taught that a

belief in truth was a characteristic of the "authoritarian personality." This was the line of the Russell-Wells utopians, the same people who promoted "pre-emptive nuclear strike" against the U.S.S.R. after World War II, and who today favor the Clash of Civilizations policy, as an excuse for turning the U.S. into a pathetic replay of the "Decline of the Roman Empire."²

The problem is, that my generation became totally self-centered, focussing on our own pleasures. We looked for short cuts, for the easy way to do things. "Don't waste time with theories, let's be practical. What's the bottom line?" Instead of working to resolve the fundamental paradoxes which underlie every aspect of man's sensuous interaction with the physical universe—which requires that dreaded four-letter word, WORK—we chose, instead, to concern ourselves with our feelings. It's easy to rely on feelings, and go along with what is popular. You can just turn on the radio, and in a few minutes you can forget the world—"Oh, man, I feel great, this is my kind of music!" Whether it's Country & Western, or it's rock, it makes you "f-e-e-l" good—that is, it's easy, you don't have to think. This is how you get suckered into believing that something which was created to make you a slave of your senses, to weaken your power of creativity, and promoted, from the outside, so you will accept that you have no power, is really yours.

But the requirement for initiating a Renaissance, is developing the powers of cognition. It is good to do that kind of work! This is what we are all about, to generate new, more powerful ideas concerning man and nature, and to master the means by which we can communicate, and pass on those new ideas to the next generation, so that it is able to make new discoveries. Every Renaissance in history, since the time of Socrates and Plato, has been based on going back to the ideas of Socrates and Plato. And every time we've had a dark age, it has been the deliberate assault on those ideas, and the method of their generation, which created the dark age.

So now, I want to introduce you to

several examples of ideas which express, or exemplify the concept that man is created in the image of God, that we possess a capacity which is beyond the limits of our immediate sense perception.

'What a Piece of Work Is Man!'

Let us take an example from a Fifteenth-century Humanist named Pico della Mirandola. The Humanist movement, which was advanced by Cardinal Nicolaus of Cusa and the Council of Florence, followed in the footsteps of the great Dante Alighieri, who was kicked out of Florence when he challenged his local oligarchy a century earlier. Humanism started with the rejection of Aristotle. Medieval Scholasticism, the slavish adherence to the philosophical method of Aristotle, rejected the idea that you can know causal, universal principles; instead, it taught that you can know only the *names* of things, and the *order* of things. During the medieval dark age which preceded the Renaissance, scholars studied linguistics, semantics, and logic. It is no different today, as "artificial intelligence" and "systems analysis" represent a modern version of the Aristotelean curriculum of that dark age.

But the Humanists rejected Aristotle, and focussed, instead, on the relationship of man to the Divine. What is the role of man? What is the nature of man?

Pico, in his famous "Oration on the Dignity of Man," explicitly rejects the Aristotelian concept of man as fixed, like an animal. He opens with an irony: As a Christian writer in Italy, at a time when most Christians believed Muslims were their enemy, he begins by writing, "I once read that Abdala the Muslim, when asked what was most worthy of awe and wonder in this theater of the world, answered, 'There is nothing to see more wonderful than man.' Hermes Trismegistus concurs with this opinion. 'A great miracle, is man.'" And so, Pico asks the question, "Where did Man come from? What is Man?"

He answers, "[T]he Great Artisan mandated that this creature, who had received nothing proper to himself, shall have joint possession of whatever

nature had been given to any other creature. He made man a creature of indeterminate and indifferent nature, and, placing him in the middle of the world, said to him, 'Adam, we give you no fixed place to live, no form that is peculiar to you, nor any function that is yours alone. According to your desires and judgment, you will have and possess whatever place to live, whatever form, and whatever functions you yourself, choose. All other things have a limited and fixed nature, prescribed and bound by our laws. You, with no limit or no bound, may choose for yourself the limits and bounds of your nature. We have placed you at the world's center so that you may survey everything else in the world. We have made you neither of heavenly nor of earthly stuff, neither mortal nor immortal, so that with free choice and dignity, you may fashion yourself into whatever form you choose. To you is granted the power of degrading yourself into the lower forms of life, the beasts, and to you is granted the power, contained in your intellect and judgment, to be reborn into the higher forms, the divine.'

"Imagine! The great generosity of God! The happiness of man! To man is allowed whatever he chooses to be. As soon as an animal is born, it brings out of its mother's womb all that it will ever possess. Spiritual beings from the beginning become what they are to be for all eternity. Man, when he entered life, the Father gave the seeds of every kind and every way of life possible. Whatever seeds each man sows and cultivates will grow and bear him the proper fruit. If these seeds are vegetative, he will be like a plant. If these seeds are sensitive, he will be like an animal. If these seeds are intellectual, he will be an angel and Son of God. And if, satisfied with no created thing, he removes himself to the center of his own unity, his spiritual soul, united with God, alone in the darkness of God, who is above all things, he will surpass every created thing. Who cannot help but admire this great shape-shifter? In fact, how could one admire anything else?"³

We find this same idea of the nobility of man in William Shakespeare. Lis-

ten to the echo of Pico, as we observe Shakespeare speaking through the inner struggle of Hamlet, who, though too fearful to realize the sublime himself, demonstrates in this passage, that he was aware of that innate potential which resides, as an Ideal, in all men.

Hamlet enthuses, “What a piece of work is a man! how noble in reason! how infinite in faculties! in form and moving how express and admirable! in action, how like an angel! in apprehension, how like a god. The beauty of the world, the paragon of animals!”⁴

This is the Humanist conception of man. The creative power given to man,

these battles, in your own mind. Being immersed in Classical culture develops your understanding of universal history, of the ideas behind the battles, to prepare you to act as a leader in your own time. And at the heart of truly great Classical culture—as in tragedy—the author demonstrates that a tragic destiny is not inevitable, but that there is a path of action by which tragedy may be averted.

The American Revolution and Schiller

Often, it is from the midst of the most degraded and miserable circumstances, that leaders, equipped with powerful

ple, “We must end our isolation within Germany, and demand to become citizens of Germany.” And he said to the German people, including the Prussian Emperor, Frederick the Great, that “you can build your nation by giving us the right of citizenship.”

Moses Mendelssohn is an example of a sublime individual who, for most of his life, had to work at a regular job, twelve or more hours a day. He had very little material comfort, and yet, he never gave in to his circumstances. Instead, he focussed his life on the most beautiful ideas in the sciences and in philosophy. He was known as the Berlin Socrates. His beautiful writings on aesthetics served as an inspiration for another sublime soul, Friedrich Schiller.

Schiller also lived under oppressive conditions. He was denied the right to choose a profession. He wanted to study theology. Later, he wanted to write. Instead, the Duke commanded that he become a doctor, to serve as a medic who could be sold with his unit of mercenaries. After his first play was produced, he was threatened with jail if he wrote another. So, he had no freedom. His dramas, poetry, and philosophical writings evoked the true beauty of man, and were a threat to continued oligarchical domination. Despite the limitations placed upon him, Schiller devoted his life to fighting for the liberation of all people.

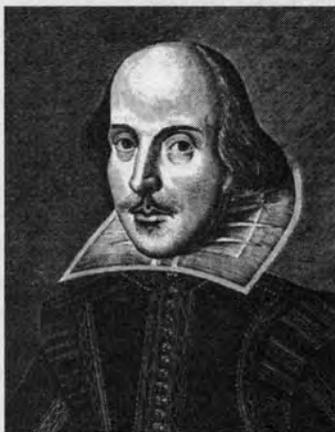
He was part of a circle which would meet regularly, to read poetry and drama, and to discuss politics. Schiller, Goethe, and Alexander von Humboldt eagerly anticipated the news from the Americas, as they were trying to bring the ideas of the American Revolution to Germany.

Schiller was inspired by the ideas of the American Revolution, including, in particular, the Declaration of Independence, a document which was a call for men to act against tyranny:

“When in the course of human events, it becomes necessary for one people to dissolve the political bands which have connected them with another, and to assume among the powers of the earth the separate and equal station to which the laws of nature, and of nature’s God

**‘What a piece of work is a man!
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—William Shakespeare



means that we can act to continue the work of God’s creation, to act not just for our own pleasure or survival, but for two, three, five, or ten generations ahead. These are not the conceptions of academics, they come from fighters. Shakespeare, for example, was in the middle of a battle over whether England would be swallowed up by the Venetian oligarchy, and turned into an extension of the Venetian empire, or whether England would return again to take its place as a sovereign nation-state, as it had been under Henry VII, who ended the disastrous Plantagenet reign over England.

The study of history—a pleasure which has been denied to your generation—puts you on the stage, with Shakespeare and his character, Hamlet, so that you may become engaged in

ideas, can uplift the population, so they may assert their true humanity.

One example of this, we see in Germany at the end of the Eighteenth century. At that time, Germany was not a unified country. There were small duchies and principalities, many of which were ruled by local tyrants. And these oligarchic tyrants held life and death power over the people who lived there.

The oppressive conditions of life in the German lands were challenged by two collaborators, Moses Mendelssohn and Gotthold Lessing. Mendelssohn, a Jew, was denied the rights of citizenship. Jews were non-citizens. Yet, Mendelssohn did not accept his oppression. He fought to improve not only the conditions of Jews in Germany, but of all Germans. He said to the Jewish peo-

entitled them, a decent respect of the opinions of mankind requires that they should declare the causes which compel them to that separation.

"We hold these truths to be self-evident: that all men are created equal, that they are endowed by their Creator with certain unalienable rights, that among these are life, liberty, and the pursuit of happiness. That to secure these rights, governments are instituted among men, deriving their just powers from the consent of the governed; that whenever any form of government becomes destructive of these ends, it is the right of the people to alter or to abolish it, and to institute new government, laying its foundation upon such principles and organizing its powers in such form, as to them shall seem most likely to effect their safety and happiness.

"Prudence, indeed, will dictate that governments long established should not be changed for light or transient causes; and accordingly all experience hath shown, that mankind are more disposed to suffer, while evils are sufferable, than to right themselves by abolishing the forms to which they are accustomed. But when a long train of abuses and usurpations, pursuing invariably the same objects, evinces a design to reduce them under absolute despotism, it is their right, it is their duty to throw off such government, and to provide new guards for their future security."

These ideas are directly echoed by Schiller in the famous Rütli Oath scene from his drama *Wilhelm Tell*:

"... there's a limit to a tyrant's power,
When the oppressed can find no
justice, when
The burden grows unbearable—he
reaches
With hopeful courage up into the
heavens
And seizes hither his eternal rights,
Which hang above, inalienable
And indestructible as the stars
themselves—
The primal state of nature reappears,
Where man stands opposite his
fellow man—
As a last resort, when not another
means

Is of avail, the sword is given him—
The highest of all goods we may
defend
From violence. Thus stand we 'fore
our country,
Thus stand we 'fore our wives, and
'fore our children!"⁵

It should be obvious, from hearing these two passages, that there is a dialogue of ideas between the authors of the Declaration of Independence and Schiller. It is the role of the artist to rally the citizenry against oppression, by calling on the best of man, by inspiring in man the sense of his true dignity, as in the case of the Declaration of Independence and *Wilhelm Tell*.

To do this, the artist must first develop in himself those powers to know the Good, and to inspire in others the ability to know the Good, and to act on it. Schiller, in his poem, "The Artist," directly challenges the artist to act in this way, writing, "The Dignity of Man is in your hands. Protect it / It sinks with you, with you it shall ascend." This is a constant theme in Schiller. In one of his late plays, *The Bride of Messina*, he wrote a Prologue, in which he again took up this theme:

"True Art is not intended as a mere passing fancy; its earnest endeavor is not to transport man into a mere momentary dream of freedom, but, rather *to make him actually free*, and to do so by awakening, exercising, and developing within him his power to achieve an objective distance from the sensible world, which otherwise weighs down upon us like a dead object, pressing us like a blind force. This distance [from the sensible world—HS] gives us the power to transform the material world into the free product of our own intellect, and to exert dominion over it through ideas."⁶

Note once again the attack on the Aristoteleans and their fixation on the senses, and the appeal to the intellect; the higher developed cognitive powers. And it is from this that you see where the concept of the Sublime comes from, that there is no force in the world, including your own death, that can force you to go against that higher nature of man. That is the quality we see in Dr.

King, and in Lyndon LaRouche, which demonstrates the true nature of man.

We are the inheritors of these ideas. Schiller and Goethe, Shakespeare, Mozart, the Greek dramatists, worked for us, to give to us the power to shape our society. These ideas, and the method of generating new and more powerful ideas, give us the capacity to address the following, historical paradox: Given that the nature of man is good, and we can demonstrate the power of man to act for the good through the discoveries which have been made of universal physical principles, and the ability to transmit these discoveries to increase the power of man over nature, then, why has so much of human history been so damned ugly? Why has man's inhumanity to man dominated during most periods of human history?

Frankfurt School vs. the Classics

To answer this satisfactorily, I'm going to get very personal. I'm going to talk to you about what you think is "your" culture. It has to be personal, because many of you are unaware that this great heritage of Classical culture, this great legacy, which separates us from the beasts, has been deliberately taken away from you, and replaced by a culture—if you can call it that—which not only reduces you to the equivalent of human cattle, but causes you to embrace your own enslavement, in a way which makes you incapable of being aware of your own mental and emotional slavery.

Our case study will start with the following basic propositions:

1. The present dominant culture expresses an idea of man which is cynical and pessimistic. What we see in the visual arts, in music, etc., is an expression of this cynicism, a descent into ugliness.
2. There has been a conscious effort, in the promotion of this contemporary culture, to destroy the method of Classical culture, with particular focus on what Lyndon LaRouche refers to as the principle of discovery of universal physical principles. The attacks, for instance on Kepler and Leibniz, which have continued since



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Which hang above, inalienable
And indestructible as the stars
themselves—’**

—Friedrich Schiller

their day, make us prisoners of axioms derived from sense perception, and enforced through popular opinion. “There is no truth, why bother trying to master anything? Where does it get you? To get ahead, you gotta be practical, get that degree, just learn the right answers.”

3. Since contemporary popular opinion rejects the ideas of universal principles or truth, there must be no higher purpose to life, i.e., no mission for the individual.

One example from present-day culture makes this point. There was a book written for Baby Boomers called, *How to Die Broke*. It was a bestseller a couple of years ago. The advice it offered was, “Spend everything you have, don’t leave any money behind for your kids. Just make sure you have enough money to last until you die. Let them fend for themselves.” The message is clear: Don’t worry about the future you leave. Just live for all the experiences you can pack in, “go for the gusto.” Since the future will be worse, enjoy life while you can.

This is why youth today, the children of Baby Boomers, are part of a “no future” generation. If this is your view of what your life is about, then you are a slave. You have become enslaved by the culture that is imposed on you. Now, we get to the real tragedy. What is this

essence of this tragedy? That you embrace your own enslavement!

Why? Because, what you think your culture is, especially entertainment—films, television, sports, and music—has been imposed on you by an alliance of financial oligarchs from Wall Street, academic degenerates from the Frankfurt School, and organized crime, which has created disposable cutouts, known to you as “celebrities,” who are the modern-day heroes and anti-heroes. You don’t own this culture!! They own it! You don’t even own your own soul, if you tolerate this.

How did this pessimistic, bestial culture become hegemonic? Let’s take a brief look at role of television, as it relates to promoting the music, which you will then “choose” as “your own.” I would like to call your attention to an excellent pamphlet, “Turn Off Your TV,” by L. Wolfe, which reports on the conscious effort to develop television as a medium designed to turn human brains to mush.⁷

I presume all of you are familiar with MTV, Music-TV. What you don’t know is where it came from. In 1956, a man named Theodor Adorno, one of the chief ideologues of the Frankfurt School, wrote an essay, “Television and the Patterns of Mass Culture.”⁸ Adorno wrote, “Television is a medium of undreamed-of psychological conditioning and control.” For Adorno and his

collaborators, television provided an ideal means to create a homogenous culture, a mass culture, through which popular opinion could be shaped and controlled, so that everyone in the country would think the same.

MTV was created to target youth in the 12- to 25-year-old range. (If you are over 25, and are still watching MTV, you must be a cultural retard—after 25, you are supposed to switch to VH1!) It was designed to appeal to the emotions, by using repeated beats and rhythms, and flashing images, with repetitive, mindless phrases. What appeared on television was an effort to recreate the grand effect of modern rock “concerts,” with flashing lights and loud noise, with a crowd chanting and shrieking so that it is almost impossible to hear what sounds are being produced on stage. The model for this was the theatrical spectacles presented by the pre-Nazi Richard Wagner at Bayreuth, in which the audience was driven to a kind of numbed ecstasy, which was later consciously used by the Nazis in their own creation of symbolic events, such as the Nuremberg rallies.

This was not accidental, in the case of MTV. It was set up explicitly to use the kind of visual and audio images which would dull the mind’s cognitive powers, by arousing in the viewers a mindless frenzy. Wolfe cites a book written by Anne Kaplan, from New York State University at Stonybrook, titled *Rock Around the Clock*. She writes, “MTV hypnotizes more than others (other television) because it consists of a series of short (four-minute) texts that maintain us in an excited state of expectation.” Viewers are “trapped by the constant hope that the next video will finally satisfy, and lured by the seductive promise of immediate plentitude, we keep endlessly consuming the short texts. MTV thus carries to an extreme a phenomenon that characterizes most of television.”⁹

Other studies point to the effects of prolonged exposure to MTV (by prolonged, they probably mean more than four minutes). The repetitive flashes of color and images overwhelm the visual senses, and dull the cognitive. A sociolo-

gist cited by *Time* magazine stated that watching MTV accelerates the process of thinking in images, rather than in “logic.” By “logic,” I assume they mean creativity.

One of the creators of MTV was Robert Pittman, who wrote in a retrospective on MTV, after its first ten years, that it introduced a “non-narrative form. As opposed to conventional television, where you rely on plot and continuity, we rely on mood and emotion. We make you feel a certain way as opposed to walking away with any particular knowledge.” He added, “What the kids can’t do today is follow things for too long. They get bored and distracted, their minds wander. If information is presented to them in tight fragments that don’t necessarily follow each other, kids can comprehend that.”

Lest you think that he is not conscious of the social effect this has in the dumbing down of the youth, this same Pittman told the *New York Times*, “When you are dealing with music culture, music serves as something beyond entertainment. It is really the peg that people use to identify themselves. It is representative of their values and culture.”¹⁰

The ‘Poetry’ of Rock and Rap

So, where does “rap music” fit into this picture? I know what some of you are thinking, because I have heard this many times before: “Yeah, I know what you’re saying, in general. But rap is different. There is some great poetry in rap, some real revolutionary ideas. Sure there’s rage, but that’s just keeping it real,” i.e., the rage is justified by the oppression of life for Americans of African descent in the U.S. today.

Well, let’s start with poetry, with a “poet” who moved my generation, John Lennon of the Beatles. Listen carefully to the profound, moving ideas in an early Lennon poem, “*I Want To Hold Your Hand*”:

*“Oh yeah, I’ll tell you something,
I think you’ll understand,
When I’ll say that something,
I wanna hold your hand
I wanna hold your hand
I wanna hold your hand.”*

*“Oh please, say to me,
You’ll let me be your man.
And please, say to me
You’ll let me hold your hand
You’ll let me hold your hand,
I wanna hold your hand. . . .”*

Oh, yeah! Not only is the poetry bad, but the Beatles played out of tune, and they sang off key. And when they performed, your parents were excited, your mothers screamed. Now you know why your parents are nuts! Let’s listen to the words of a more contemporary “poet,” the eminent Eminem, who is considered, by some so-called critics, to be the great angry young white poet, in his evocative, “*BLOW MY BUZZ*”:

*“Hmm, yeah
This just one of them days when yo’ ass
just wanna chill out
And motherf**kers be all in yo’ ear and
shit, yknowwhat I’m sayin?
Or that naggin bitch, that just like to
hear herself talk
Blowin all yo’ high away
Now that’s some f**ked up shit, heh
But it happens, yknowwhat I’m sayin? Yo*

*“Yo yo yo yo
Schizophrenia, how many of ya got it?
How many motherf**kers can say they
psychotic?
How many motherf**kers can say they
brain dry-rotted from pot?
You got it like I got it or not?
If you did, you would know just what
I’m talking bout
When your tongue’s rottin out from*

*cotton mouth
When you end up becoming so
dependent on weed
That you end up spending a G in the
vendin machine . . .”*

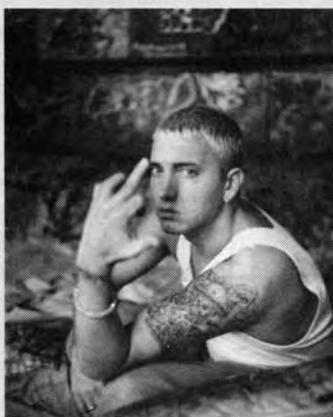
Chorus

*“Blow, my, buzz
You want to want to just don’t blow,
my, buzz
(Do what you want to) And I’m gon sit
here and just roll, my, drugs
(Smoke my weeed) And if you talk
I’m gonna f**k, you, up
(I might just whoop yo’ ass) Just don’t
say shit and we’ll be cool. . . .”*

Delightful, eh?

Now, let me get to the point that I think that you are going to have to work on—understanding that “your” culture is not really yours. The embrace of “gangsta” rap by youth in general, but especially by the African-American community, and the idea that it is somehow a revolutionary art form, which speaks to your soul, is part of a grand delusion.

Not that long ago, people in this country were marching for Civil Rights, fighting for the idea of human dignity. They refused to go to the back of the bus, refused to be denied the right to vote, refused to be scared by men wearing white robes and pointed hats, which covered up their pointy heads. Instead, they went out and fought for the rights of all mankind, led by Dr. King. And this movement changed history, as the leadership of the Civil Rights movement



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Rapper Eminem

insisted that Constitutional principles, which are both explicit and implied, are the birthright of all men and women, not just in the U.S., but worldwide. Is this sense of the dignity of man reflected at all, in rap?

Embracing Oppression

As a young man, Sean Combs, aka Puff Daddy, aka P. Diddy, the rapper, entrepreneur and fashion mogul, said, “I wanna be a modern Mozart.” Years later, after having “made it,” he said, of his new identity, “If you wanna be a motherf**kin thug, you gots to live and die a thug. Only thing I know is dead or in jail or about to be.”

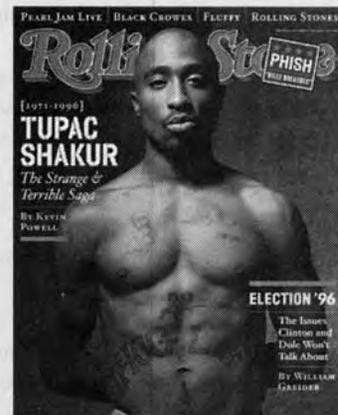
When he was a young boy, his father, who was a drug dealer, was shot and killed. Today, he is a wealthy man, who speaks of rap as a liberating force. The man who made a lot of that money for him, Christopher Wallace, aka, Biggy Smalls, aka the Notorious B.I.G., who had been a crack dealer before he became a rapper, was murdered in 1997, in what was purported to be revenge for the murder of Tupac Shakur, in an early stage of an ongoing battle for supremacy between East Coast and West Coast music labels.¹¹

Tupac Shakur was murdered in Las Vegas in September 1996. His mother was Afeni Shakur, who was a member of the Black Panther Party, a movement which grew after the assassination of Dr. King. With King’s death, the Department of Justice (D.O.J.) and the F.B.I.—which had consistently harassed him during his life—moved to destroy his legacy. As part of this D.O.J./F.B.I. deployment, Afeni Shakur was framed up, and sent to jail. Ultimately, she was acquitted, but by then she was broken, and spent most of the next 20 years in and out of rehab centers, with a drug addiction. Her son, Tupac, spent his youth being shuttled around from family friend to family friend. His godfather was Geronimo Pratt, another Black Panther who was framed up by the D.O.J.

Despite these hardships, Tupac had other options besides that of the “thug life.” He attended the High School for the Performing Arts in Baltimore,

Tupac Shakur was embracing his own victimization, playing the role assigned to him by those who had opposed Dr. King, and who wished to promote the idea of African-American youth as savages. The rap culture reinforces the feeling of hopelessness.

Tupac Shakur



where he studied ballet, theater, and poetry. His teachers at Baltimore said he had a great affinity for drama. Yet, in choosing the life of a “gangsta rap” star, he adopted the belief that anger and rage pave the road to liberation from the oppression and racism around him.

His defenders, those who claim him as an artist, argue that he was a “talented lyricist with a gift for storytelling,” and that his poetry speaks for itself. Let’s listen to the beginning of one of these poems, titled “F**k the World.”

*“Who you callin’ rapist??
ain’t that a bitch
you devils are so two faced
wanna see me locked in chains
dropped in shame
and gotten socked by these crooked cops
and game
f**kin’ with tha young black male
tryin’ ta stack bail
and stay away from tha packed jails
told tha judge i’m in danger
and that’s why I had that 45 with one
in tha chamber
F**k tha World.*

*“their tryin’ ta say that I don’t care
I woke up screamin’ f**k tha world
their tryin’ ta say that I don’t care
just woke up and scream f**k tha
world
their tryin’ ta say that I don’t care
I woke up and screamed f**k tha world
their tryin’ ta say that I don’t care
Just got up and screamed f**k tha
World...”*

In reality, Tupac Shakur was embracing his own victimization, playing the role assigned to him by those who had opposed Dr. King, and who wished to promote the idea of African-American youth as savages. Shortly after he had achieved “success” in rapping, and in movies, Tupac was gunned down, followed in short order by his “rival,” Biggie Smalls. These killings strengthened the image that the self-identification by rappers as “thugs” had created. It sent a message to frightened parents in the suburbs, which was loud and clear: “This is what Civil Rights got us, drug-runners and gangsters who endanger us, men who hate women, hate police, and are a threat to society.”¹² (What was even more frightening to parents in the suburbs was, that their children were gobbling up rap CD’s. There are estimates that 75 percent of rap sales are to white consumers.)

As preposterous as it seems, there are some defenders of rap and hip hop who say that it is the natural outcome of the Civil Rights movement, that rap is, in fact, a product of the Civil Rights struggle of the 1960’s. The *Los Angeles Times* recently reported on demonstrators who were protesting the arrests of employees of West Coast rap mogul Suge Knight (the founder of Death Row records, who was in the car with Tupac when he was shot), who were arrested as part of an investigation of several killings related to the “music industry.”¹³ The demonstrators held signs equating the attacks on Knight’s operations to the persecu-

tion, by the D.O.J., of Malcolm X and Martin Luther King, and their subsequent assassinations!

To get inside this story, it is necessary to discover how rap moved from street corners in the Bronx to “mainstream” culture on MTV.

Who Really Owns This Culture?

In a generally positive book on hip hop, critic Nelson George writes, “One of the prevailing assumptions around hip hop is that it was . . . solely African-American created, owned, controlled and consumed. It’s an appealing myth—but the evidence just isn’t there to support it. . . . I’d argue that without white entrepreneurial involvement hip hop culture wouldn’t have survived its first half decade on vinyl.”¹⁴

What George doesn’t tell his readers is who these white entrepreneurs are. A brief overview of “Who’s Who” in the record business, leads one to the unmistakable conclusion that the recording industry, as far as the production, distribution, and popularization of rock and rap is concerned, is under the control of a syndicate representing a marriage between organized-crime networks and high-level fixers on Wall Street.¹⁵

The first rap recording was “Rapper’s Delight,” which was released by Sugar Hill Records in 1979. Sugar Hill was nominally a Black-owned label which, by 1979, had fallen into deep debt. That debt was covered by one Morris Levy, who had been identified by the New York State Crime Commission in 1972 as “the front man for the syndicate [i.e., organized crime] in the record business.” Levy was an operative for the Genovese family. He was co-owner of another label at that time, Primo Records. The other co-owner was Tommy Eboli, who was then the boss of the Genovese family.

Following its success with “Rapper’s Delight,” and with backing from Levy, Sugar Hill went to MCA in 1983, looking for bigger backing and more opportunities in the expanding area of rap/hip hop. Levy brought in Sal Piselto for these negotiations. Piselto was a high-ranking figure in the Gambino family, another of New York City’s organized-crime fami-

lies. He was under investigation at that time for heroin trafficking. Another associate of Levy was Vincent “Vinnie the Chin” Gigante, later boss of the Genovese family, who was also part of the organized-crime families’ involvement in the record business. Another associate of Levy in the record business was Gaetano Vastola. When Vastola was indicted for his role in a vast organized-crime conspiracy, which included money laundering through the record business, his attorney was Roy Cohn, a long-time organized-crime fixer and vicious opponent of Lyndon LaRouche.

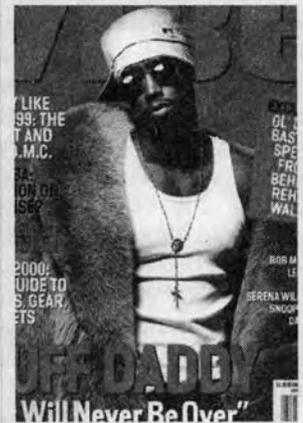
The “Godfather” of MCA (which

Lansky’s Intertel, was brought in, to limit the damage to the company¹⁷ Members of the MCA Board at that time included top Democratic Party fixer Robert Strauss, and one of Wall Street’s top investment bankers, Felix Rohatyn of Lazard Freres.

A second record label instrumental in production and promotion of rap was Warner Communications, which, along with MCA, Capitol-EMI, CBS, and Polygram, dominates the music industry. Warner was in the doldrums when it was purchased by the Kinney Parking Company of New Jersey. Kinney was run by Steve Ross. Parking lots are very

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Sean Combs, aka Puff Daddy



included Universal Pictures) was the late Hollywood heavyweight Lew Wasserman, whose close friend and ally was Sidney Korshak, known to all in Los Angeles as a “former” syndicate lawyer from Chicago. Wasserman got his start with mob networks in Cleveland, working for Mo Dalitz’s gang.¹⁶

Now you know why they call it “gangsta rap!”

In 1986, when Levy’s network, which included leading organized-crime operatives in the very recording companies which had backed rap from the start, was hit with a 117-count indictment, the high-level suits on the board of MCA stepped in, to arrange a fix. Levy was represented by attorneys from Paul, Weiss, Rifkind, one of the top firms on Wall Street. Bill Hundley, a former top D.O.J. official, who left the Department to go to work for Meyer

popular with the mob, as they serve as excellent fronts for money laundering, because a lot of cash passes through them on any given day. Kinney had been set up by the Meyer Lansky gang, directly by Abner “Longy” Zwillman, who was known as one of the most vicious hitmen in New Jersey in the postwar period.

Some years later, Warner Communications founded MTV. Ross, who got his start as an employee of the Lansky mob, had a direct hand in its founding. Record labels which were subsidiaries of Warner, were among the most prominent in promoting rap in the late 1980’s and 1990’s. Warner Communications later merged with Time, and then with AOL.¹⁸

Even some of the so-called independent labels were the product of organized-crime operations. Russell Simmons, whose Def Jam is celebrated as an

example of “Black entrepreneurship,” acknowledges that his operation only came into existence through the beneficence of Walter Yetnikoff of CBS, and the junk bond operator Ronald Perelman, who made his fortune through his alliance with Michael Milken. Perelman was one of the original “Milken’s Monsters,” a gang which used access to money laundered from Lansky’s operations, to make a run at taking over corporate America—until Milken was sent to prison in 1988.

There is no great culture, nor artistic vision, in this. The rap culture is a dirty, ugly cesspool, in which disposable “artists,” such as Tupac and Biggie Smalls, are used up and then discarded. It is a culture which reinforces the feeling of hopelessness, of victimization. Nelson George, one of its most ardent supporters (although, at times, a harsh critic), is forced to admit that, “There is an elemental nihilism in the most controversial crack-era hip hop that wasn’t concocted by the rappers, but reflects the mentality and fears of young Americans of every color and class living in an exhausting, edgy existence in and out of big cities.”¹⁹ And it is not just about money. It is unlikely that the real thugs, such as Longy Zwillman or Steve Ross, got together and said, “Hey, boys, let’s run this parking lot gig so we can mess with the minds of people, make them pessimistic and cynical, so we can keep ripping them off.”

But on a higher level—the level of the Frankfurt School and Wall Street—that is exactly what they were doing, in the creation of the “counterculture,” which is now entrenched as the dominant culture. In launching this, they were trying to destroy, in you, the optimism, which would engender in you the intent to fight for a better future. They deliberately set out to obliterate in you any chance that you would see yourself as human, as the crown of creation.

The task in front of you, as leaders of the growing international LaRouche Youth Movement, is to take seriously Schiller’s challenge, that although you live in *this* century, you must be from *another* century. You must develop the strength to reject the “popular culture”

of this century, which has been imposed on you, and, instead, see in yourself the Ideal man; see the Ideal in others. Help others to recognize that they have become enslaved by something which is not “theirs,” but is a bestial, alien force designed to root out what is human in them. Help them overcome their fears, and fight that sense of littleness which causes them to run with the pack.

We have a great weapon to aid in this fight. It is called Classical culture. It is a culture which develops the human mind, enhances the powers of concentration, which will enable you to see the dignity of your fellow man. And, by doing so, it increases your power, and the power of mankind, to overcome the otherwise tragic outcome we face. As Lyndon LaRouche has stressed, repeatedly, the tragic outcome—a New Dark Age—is not inevitable, if we act to free people from the scourge of popular opinion, so that every person on this planet, and especially every young person, may realize their potential to be an actor on the stage of history.

—Harley Schlanger

1. Martin Luther King, Jr., Nobel Prize Acceptance Speech, December 10, 1964, in *A Testament of Hope: The Essential Writings and Speeches of Martin Luther King, Jr.*, ed. by James M. Washington (New York: HarperCollins, 1986).
2. Lyndon H. LaRouche, Jr., “How Bertrand Russell Became an Evil Man: Reflections on Tragedy and Hope,” *Fidelio*, Fall 1994 (Vol. III, No. 3).
3. Pico della Mirandola, “Oration on the Dignity of Man,” trans. by Richard Hooker, in *Reading About the World, Vol. I* (New York: Harcourt Brace, 1999).
4. William Shakespeare, *Hamlet, Prince of Denmark*, Act II, Sc. 2. For a sharp, concise report on the tragedy of Hamlet, see Lyndon H. LaRouche, Jr., “The Historical Individual,” *Executive Intelligence Review*, Nov. 1, 2002 (Vol. 29, No. 42).
5. Friedrich Schiller, *Wilhelm Tell*, speech by Stauffacher, Act 2, Sc. 2, in *Friedrich Schiller: Poet of Freedom, Vol. II*, ed. and trans. by William F. Wertz, Jr. (Washington, D.C.: Schiller Institute: 1988).
6. Friedrich Schiller, “On the Use of the Chorus in Tragedy” (Prologue to *The Bride of Messina*), quoted in Gabriele Chaitkin, “Friedrich Schiller, Poet of America,” *The New Federalist*, Nov. 11, 1996 (Vol. X, No. 44); see also trans. by George Gregory,

Fidelio, Spring 1993, Vol. II, No. 1.

7. L. Wolfe, “Turn Off Your TV,” reprinted from *The New Federalist*, 1999.
8. *Ibid.*, p. 21. For more on Adorno and the Frankfurt School, see Michael Minnicino, “The New Dark Age: The Frankfurt School and “Political Correctness,” *Fidelio*, Winter 1992 (Vol. I, No. 1).
9. *Ibid.*, quoted on p. 68.
10. *Ibid.*, quoted on p. 77.
11. Ironically, Biggie Small’s first major album was titled “Ready To Die,” and was released in 1994 by Sean Combs’ Bad Boy Entertainment label, the same label which took advantage of his death, with the release of an album “Life After Death,” less than three weeks after his murder.
12. One rap group even took the name, “Menace II Society.”
13. Whether rap and hip hop can even be called “music” is debatable. A leading defender of rap, author and critic Nelson George, writes that the practice of “sampling,” by which rap recordings borrow instrumental accompaniment from other recordings, as the background mix to the rapper, is a departure from earlier musical innovations by Black musicians, such as jazz and blues, the which were often developed by classically trained musicians. In his book, “hip hop America,” he quotes a musician named Mtume, who blasted hip hop “for its slavish reliance on record sampling,” adding that “this is the first generation of African-Americans not to be extending the range of music.” According to George, it upset Mtume “that so many hip hop producers had no understanding of theory, could play no instruments, and viewed a large record collection [from which ‘samples’ could be gleaned—HS] as the only essential tool of record making.”
14. Nelson George, *hip hop America* (New York: Penguin Putnam, 1998), p. 57.
15. A good starting point for investigating this marriage is William Knoedelseder’s book, *Stiffed: A True Story of MCA, the Music Business, and the Mafia* (New York: HarperCollins, 1993).
16. For more on the dark side of MCA, see Dan Moldea, *Dark Victory: Ronald Reagan, MCA and the Mob* (New York: Penguin Books, 1987).
17. See *Dope, Inc.: The Book That Drove Kissinger Crazy* (Washington, D.C.: Executive Intelligence Review, 1992), pp. 498–99, for Hundley’s background.
18. For more on Ross and Warner Communications, see Connie Bruck, *Master of the Game: Steve Ross and the Creation of Time Warner* (New York: Simon & Schuster, 1994).
19. Nelson George, *op. cit.*, p. 49.

The Long Life of the Catenary: From Brunelleschi to LaRouche

To make the urgently needed shift from a consumer society to a producer one, requires a fundamental change in the way people think. The mind of the consumer knows the universe only through the objects that stimulate the senses, along with the magical powers he believes control them. When confronted with a crisis, such as the present one, consumers become frightened. They demand action from an increasingly impotent priesthood of financial advisors and opinion makers who, unable to boost consumer confidence, fail to produce results. As the crisis deepens, suspicions mount that the unseen potencies on whom they have relied, have either gone deaf, or departed the scene. Their ultimate terror, however, is the thought that such market forces might never have existed; thus, the *idea* of their previous existence persists, continuing to govern the thoughts and actions of the consuming public, and feeding an increasingly hopeless pessimism.

This was the state of affairs in Florence, Italy when, following the collapse of the feudalist financial system, nearly 80 percent of the population perished from the Black Death between 1347 and 1350. The reactions of the population to that crisis are aptly described by the Florentine poet Giovanni Boccaccio, in the introduction to his *Decameron*. His countrymen, Boccaccio reports, had fallen into a state of either austere penitence, bacchanalian revelry, or some other form of “looking out for ‘number one’”:

“Thus, adhering ever to their inhuman determination to shun the sick, as far as possible, they ordered their life. In this extremity of our city’s suffering and tribulation, the venerable authority of laws, human and divine, was abased, and all but totally dissolved for



FIGURE 1. *Cathedral of Santa Maria del Fiore, Florence, Italy.*

lack of those who should have administered and enforced them, most of whom, like the rest of the citizens, were either dead, or sick, or so hard-bested for servants that they were unable to execute any office, whereby every man was free to do what was right in his own eyes.”

Seeking to rescue their city, and the larger European civilization, from this tragedy, a grouping of Florentine leaders, in the Christian-Platonic tradition of their predecessor Dante Alighieri, recognized that the power to overcome such catastrophes lay, not in the domain of sense certainty and accompanying magical powers, but, in the power of the human mind to discover and employ the truthful principles that govern the universe. To demonstrate that power, they resolved to complete the cathedral of Santa Maria del Fiore, whose construction had begun nearly three-quarters of a century earlier. The plan called for construction of a high octagonal drum

of extremely large diameter—42 meters—, to be capped by a soaring, free-standing dome that would tower effortlessly above the city and become the focal point of the entire surrounding region [SEE Figure 1].

When the decision to undertake this project was made in 1367, the man who would ultimately execute it, Filippo Brunelleschi, was not even born; but, the intention that would guide him, was already embedded in the proposed size of the structure, and the requirements of its design. The dome was to be equal in size to the Pantheon in Rome, that temple to the magical powers that had dominated Roman popular opinion, and under whose authority the Emperors had ruled [SEE Figure 2]. Ever since its construction in 128 A.D. under the Emperor Hadrian, the Pantheon had been the largest covered structure in the world, and, even though the Emperors had long ceased to rule under its name, the mind-set of

Roman culture which it symbolized, persisted in the thoughts of the European population, who, in a beast-like condition, lived in fearful subjugation to a feudalistic oligarchy.

The Dome (*Duomo*) was a project of bold optimism. Unlike the Pantheon, the Florentine Dome was to be beautiful from both inside and out; a quality intended to counteract the persisting pantheonic culture that had brought about the calamity from which Europe was still reeling. Never before had such a large structure been vaulted by a self-supporting and free-standing dome. Its towering beauty would demonstrate a principle of both science and art, and, as such, would transform the entire surrounding region, and, through travellers, the entire world.

The full implications of the principles necessary to construct the Dome were not known to its original designers; to accomplish the feat, Brunelleschi would have to discover, apply, and communicate a form of the universal principle of least-action, whose further elaboration would unfold over the ensuing 500 years. This process was advanced in

1988, when Lyndon LaRouche visited the Dome, and recognized the implications of Brunelleschi's discoveries for the subsequent breakthroughs of Gottfried Leibniz, Carl Gauss, and Bernhard Riemann, and for the future development of a new physical science.¹

The Dome and Anti-Euclidean Geometry

Imagine yourself in 1420, looking at the octagonal drum of Santa Maria del Fiore, without the dome. What do you see? Empty space? If so, you could never envision, let alone build, the Dome. The construction of the Dome required a mastery of principles not visible to the eye. Not the invisible, magical powers of the Pantheon, but the universal physical principles which, though unseen, are known clearly through the imagination. For the scientist and artist alike, there is no such thing as empty space; no empty canvas, no blank slate. Indeed, there is a manifold of physical principles, characterized by a set of relationships whose expression ultimately takes the form of a work of art. To visualize the unbuilt dome, as the artist Brunelleschi would

have, imagine the physical principles, and the bricks and mortar will assume their required form.

It is on this basis that we can begin to construct a physical geometry from the standpoint of Brunelleschi, Leibniz, Gauss, Riemann, and LaRouche. The roots of this physical geometry go back to the discoveries, in ancient Greece, of Thales, Pythagoras, Archytas, Plato, Menaechmus, Archimedes and Eratosthenes, all of whom—unlike the presentation provided by Euclid's *Elements*—derived the principles of geometry from investigations of physical principles, not abstract notions of empty space.

From the time of the murder of Archimedes by Roman soldiers in 212 B.C., European thought had been dominated by Aristotle's doctrine that universal principles have no effect on earthly affairs, and that knowledge of such principles is impossible. Consequently, human knowledge could only be based upon sense perceptions, or on propositions of an abstract geometry derived deductively from unprovable common axioms and opinions, which were separated from the physical world, just as, according to Aristotle, the heavens were separated from Earth. To build the Dome, Brunelleschi had to reject Aristoteleanism and return to the Platonic tradition of science, which understood that the physical world was governed by universal physical principles, and that, although unseen, the human mind possessed the power to discover and employ these principles to increase man's power in and over the universe.

Physical Principles vs. Aristotle

To grasp this, examine some simple problems of building construction, in which the distinction between the physical principles of universal gravitation, and Aristotelean notions of abstract geometry, comes to the fore. Start with a vertical column, which takes the shape of a line. An abstract geometrical line, according to Euclid, is that extension in empty space which has only length. No matter how long the line, its width is

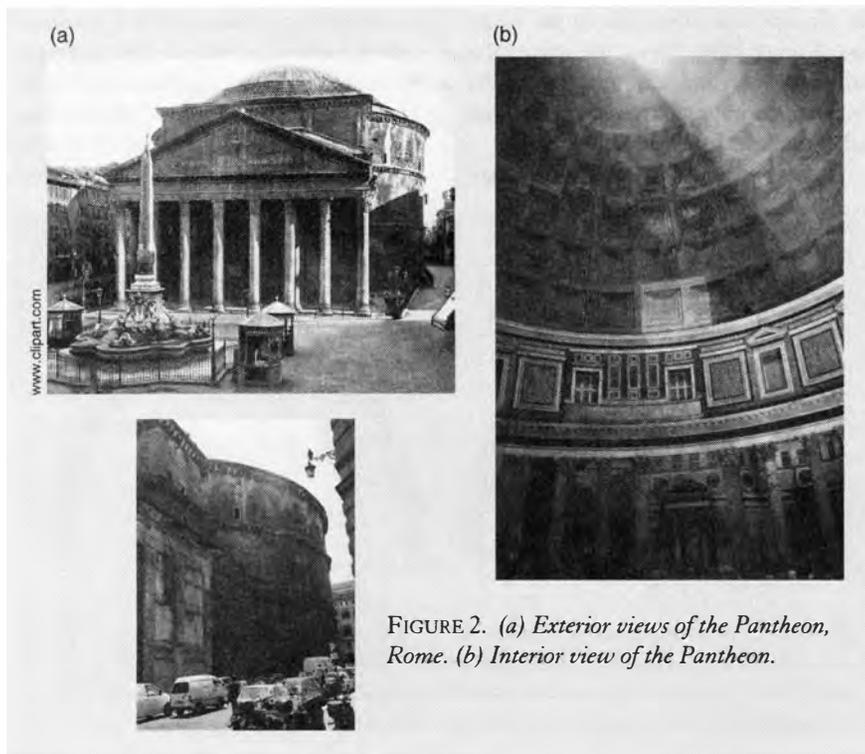


FIGURE 2. (a) Exterior views of the Pantheon, Rome. (b) Interior view of the Pantheon.

always the same, namely, nil. However, when building a vertical column (line) of bricks, the higher the column, the greater the weight (pressure) on the lower bricks. To build a taller column requires strengthening the lower portions of the column, by increasing the width at the base, or by some other means, such as buttressing the column externally.

Extend this thought to an area. From the standpoint of empty Euclidean space, an area is that which has length and width. A bounded area is enclosed by a line, either straight or curved. A physical area, however, is enclosed by a physical structure, whose shape must be determined by physical principles. One approach to enclosing a physical area, would be to build two vertical columns and span those columns with a flat roof. This is a relatively weak structure, however, because the roof is only strong close to where it is supported by the columns. The farther apart the columns are, the weaker the roof [SEE Figure 3]. A far more stable structure for vaulting a vertical area is an arch.

At first thought, the circle appears to be the simplest type of arch, because the circular boundary encloses the largest area by the least perimeter. A relatively stable circular arch can be constructed, if the arch is designed so that all the bricks point to the center of the circle [SEE Figure 4]. However, while such an arch is under construction, it cannot support itself, and a temporary scaffolding is required to support it. Thus, the arch is self-supporting as a whole, but not in its parts.

The circular arch poses another problem. Even though it encloses the greatest area with the least perimeter, its height is a function of its width, and the line of pressure does not conform to the circular curve [SEE Figure 5]. The only way to enclose a taller area, is to widen the arch, which in turn decreases the overall stability of the structure, because the downward pressure from the upper bricks pushes the sides of the arch outward. Thus, even though, from the standpoint of abstract geometry the circle is isoperimetric, from the standpoint of physical geometry, some other shape

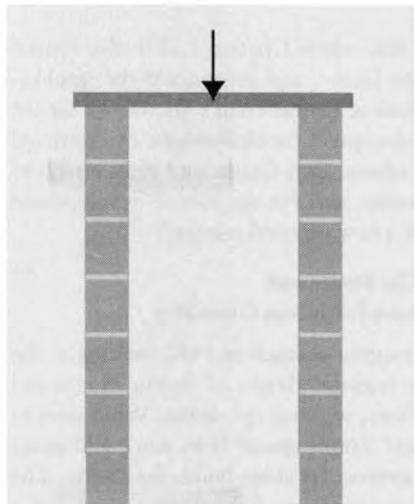


FIGURE 3. *Enclosing a vertical area with columns and a flat roof. The roof is strong only close to the columns. It is weak in the middle.*

provides a greater stability for a taller area. The shape that achieves this is a pointed arch, in which the two curves that make up the arch are circular arcs with different centers [SEE Figure 6(a)]. Not only does the pointed arch enclose a taller area, but it is more stable, because its curvature conforms more closely to the physical line of stresses in the structure [Figure 6(b)]. Thus, the shape of a building arch cannot be determined by abstract geometrical characteristics, but rather, by physical ones.

Brunelleschi had to build more than

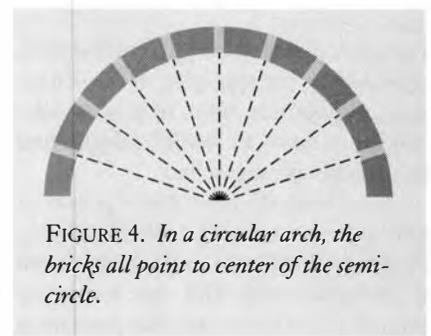


FIGURE 4. *In a circular arch, the bricks all point to center of the semi-circle.*

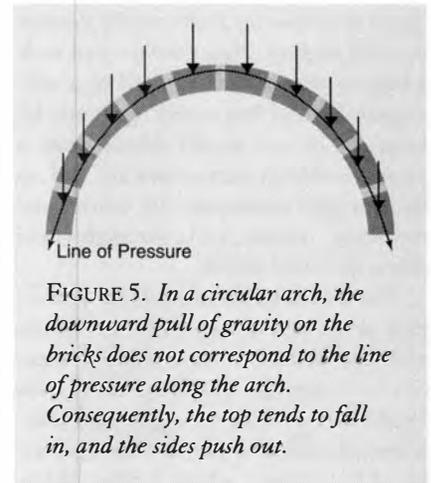


FIGURE 5. *In a circular arch, the downward pull of gravity on the bricks does not correspond to the line of pressure along the arch. Consequently, the top tends to fall in, and the sides push out.*

an arch, however; he had to enclose a volume. Geometrically, a volume is enclosed by a surface, which is produced when a curve is moved. For example, from the famous construction of Archytas, when a circle is moved along a line, a cylinder is produced; when rotated around a point, a torus is produced;

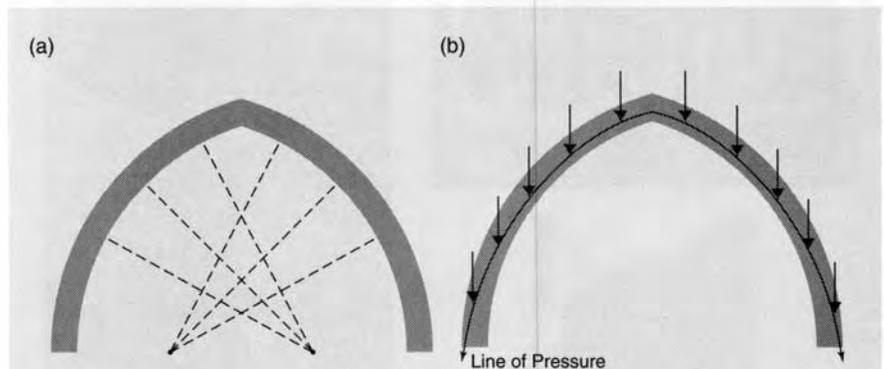


FIGURE 6. (a) *In a pointed arch, each side is an arc of a circle, but the centers of the arcs are different. This makes the pointed arch taller than a corresponding circular one. (b) In a pointed arch, the downward pull of gravity conforms more closely to the line of pressure, distributing the stresses along the arch into the ground.*

when rotated around a line, a sphere is produced; and when a triangle is rotated around a line, a cone is produced [SEE Figure 7]. A dome can be produced by rotating an arch, either circular or pointed, around an axis [SEE Figure 8]. But a physical surface such as a dome, is not merely the sum of an infinite number of rotated arches, because a new set of stresses occurs in the dome which do not occur in any of the arches. In addition to the stresses along the arch (from top to bottom, i.e., “longitudinal”), there are stresses *around* the dome (“circumferential” or “hoop”). The problem faced in building a dome is, to determine the shape that best distributes these different stresses according to the principles of universal gravitation.

One solution, a hemispherical dome, based on the circular arch, encloses the largest volume in the smallest surface area. But, like the circular arch, the height of the hemispherical dome is a function of its width. In order to build taller domes, Islamic architects adapted the principle of the pointed arch, to form a pointed dome. Like the pointed arch, the pointed dome not only was taller, but was more stable, because it distributed the stresses more in the direction of the pull of gravity.

But, no one had ever built a dome the size of the one proposed for Brunelleschi. Consequently, he had to design a structure whose shape would balance these stresses without requiring the external

buttressing that would detract from the Dome’s beauty, and thus lessen its effectiveness in changing society by elevating the minds of the population.

Brunelleschi faced an additional problem. A dome, like an arch, generally requires a supporting scaffold, or centering, to hold it up while under construction. Here, Brunelleschi faced his most formidable obstacle. The dome proposed for Santa Maria del Fiore was so big, it exceeded the available wood to build the scaffolding. Brunelleschi shocked all his competitors, by making the unprecedented proposal to build the Dome without any centering at all. This bold step required him to design the dome so that it was self-supporting in both its whole *and* its parts. Such a shape could not be determined by the methods associated with Euclidean geometry; the shape Brunelleschi required could only be determined by physical principles.

Constructing the Dome

Brunelleschi proposed to construct two domes, one inside the other, with a stairway between them. Both would conform

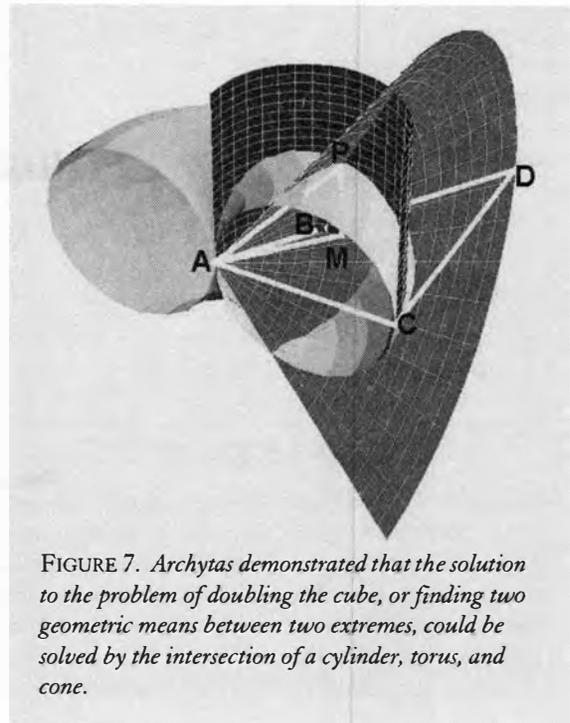


FIGURE 7. Archytas demonstrated that the solution to the problem of doubling the cube, or finding two geometric means between two extremes, could be solved by the intersection of a cylinder, torus, and cone.

to the pointed arch form called for in the original design. However, according to the Twentieth-century architect Lando Bartoli,² the curve of the inner dome was based on a circle whose diameter was four-fifths the inside diameter of the octagonal drum (a “pointed fifth”), whereas the curve of the outer dome was to be three-fourths the outer diameter (a “pointed fourth”) [SEE Figure 9].

Since the use of centering had to be avoided, Brunelleschi had to control the shape of both domes very carefully as they were being constructed. This entailed controlling three different curvatures: the longitudinal curvature; the circumferential curvature; and the curvature inward towards the center of the dome. If all three curvatures could be controlled during all phases of construction, not only would the dome be stable upon completion, but each stage would be stable enough to be a platform from which the next stage could be built. This meant that the dome had to conform to a shape that would be self-supporting *in both its whole and its parts*.

Each direction of curvature was itself determined by another curvature. The longitudinal curvature from the lantern down to the drum was defined by the

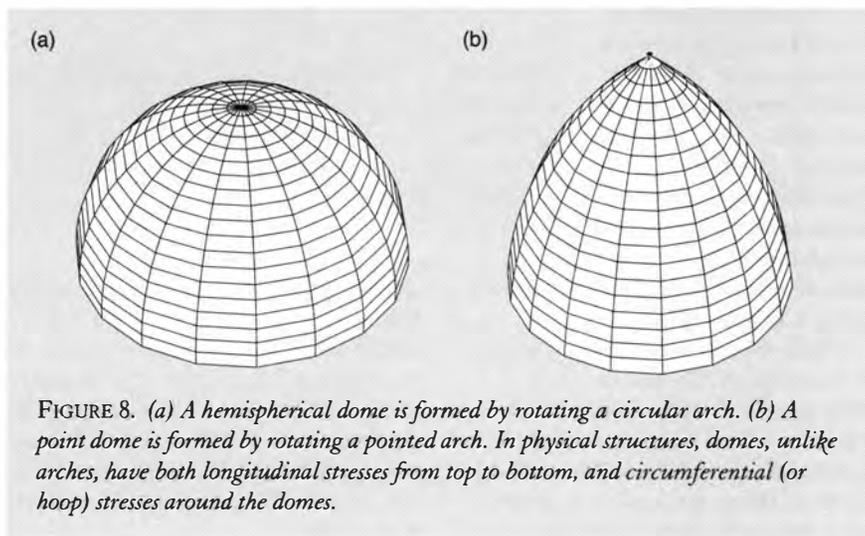


FIGURE 8. (a) A hemispherical dome is formed by rotating a circular arch. (b) A point dome is formed by rotating a pointed arch. In physical structures, domes, unlike arches, have both longitudinal stresses from top to bottom, and circumferential (or hoop) stresses around the domes.

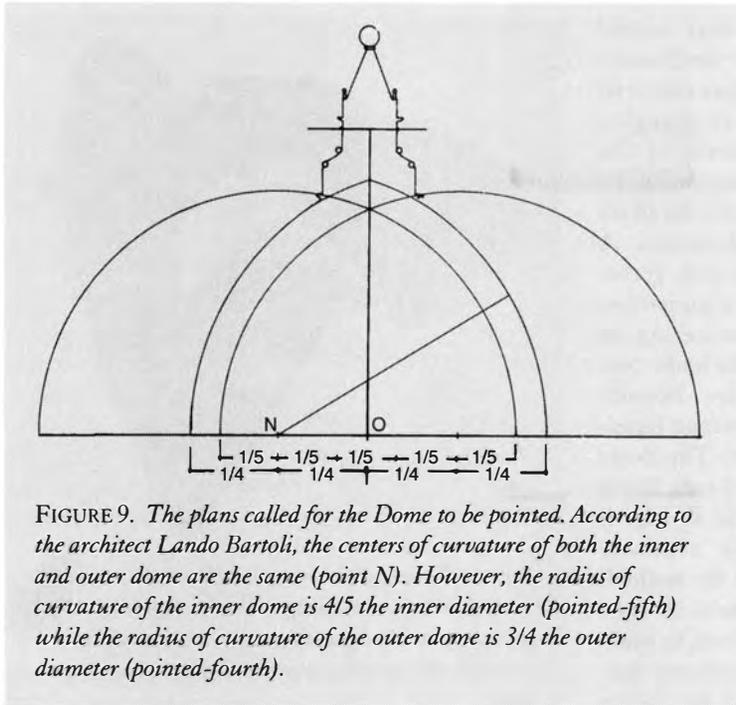


FIGURE 9. The plans called for the Dome to be pointed. According to the architect Lando Bartoli, the centers of curvature of both the inner and outer dome are the same (point N). However, the radius of curvature of the inner dome is $4/5$ the inner diameter (pointed-fifth) while the radius of curvature of the outer dome is $3/4$ the outer diameter (pointed-fourth).

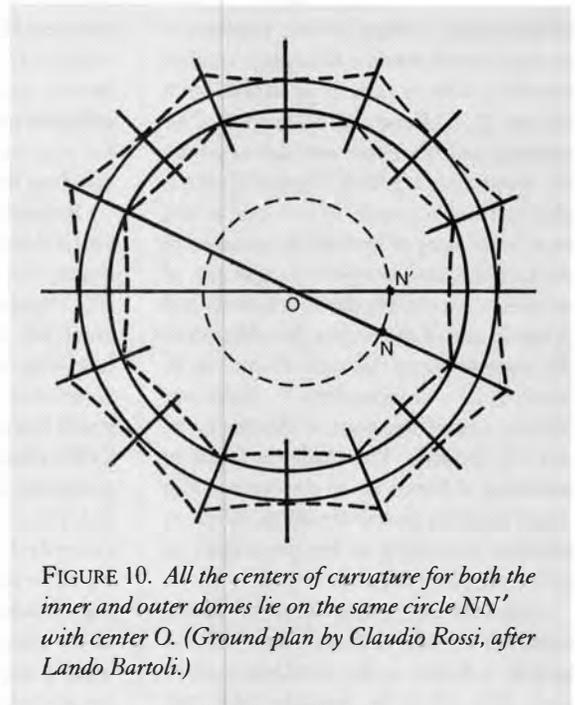


FIGURE 10. All the centers of curvature for both the inner and outer domes lie on the same circle NN' with center O. (Ground plan by Claudio Rossi, after Lando Bartoli.)

pointed-fifth, pointed-fourth design, as expressed by the eight primary (white) ribs, and an array of intermediate (unseen, embedded) ribs. While each rib is a circular arc, the centers of curvature of each are different; all the centers lie along two circles (one for the inner and one for the outer dome) inside the base of the drum [SEE Figure 10]. The circumferential curvature was also approximately circular, with the diameter of each circle diminishing with its height; all the centers of curvature of the circles lay on a line extending from the center of the drum to the lantern. Additionally, each course of bricks had to angle increasingly inward as the courses reached the top [SEE Figure 11]. This angle had to be uniform within any given course, but changing from course to course, at a precise, but non-uniform rate.

Brunelleschi had to solve a multitude of problems, each requiring revolutionary new ideas. But the discovery most central to his success, the one most relevant for the future development of the anti-Euclidean physical geometry of Kepler, Fermat, Leibniz, Gauss, and Riemann, is the one identified by LaRouche: the principle of the catenary.

The Principle of the Catenary

A chain hanging freely forms a unique shape, which, like Brunelleschi's Dome, is self-supporting in its whole and its parts. This can be demonstrated experimentally, by hanging a chain between two freely moving pulleys [SEE Figure 12]. The chain will find only one stable "orbit," or trajectory, between the pulleys, but once in that orbit, it will be very stable—a characteristic that LaRouche has likened to the principle of "frozen motion" exhibited in Greek classical sculpture. If the positions of the pulleys are changed, the entire chain re-orientes itself, so as to assume a catenary shape as before.

While this characteristic was known to the ancient Greeks, as well as to Brunelleschi, the principles underlying it were not fully elaborated until Gottfried Leibniz and Johann Bernoulli discovered them more than a century later. Using Leibniz's calculus, they

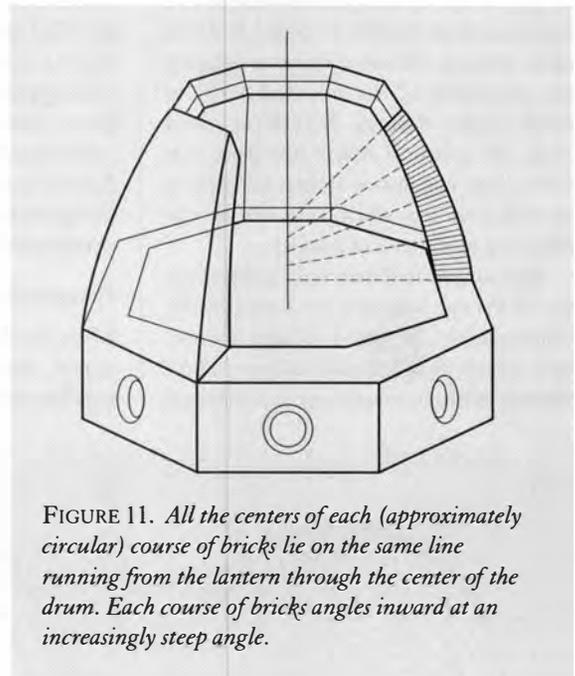


FIGURE 11. All the centers of each (approximately circular) course of bricks lie on the same line running from the lantern through the center of the drum. Each course of bricks angles inward at an increasingly steep angle.

demonstrated that the catenary shape taken by the chain, was that shape which equalized the physical tension at every point [SEE Figure 13]. Furthermore, Leibniz showed that this physical principle corresponded to the elementary transcendental functions: the circular, hyperbolic, and logarithmic [SEE Figure 14].

Look back at our earlier comparison of the difference between abstract geometrical notions of line, area, and volume, and the physical requirements of constructing a column, arch, and dome. As is already implicit in the concept of “powers” developed by Pythagoras, Archytas, Plato, *et al.*, even the geometrical concepts of line, area, and volume are ultimately determined by the type of physical principles which Leibniz demonstrated are expressed by the catenary. The Aristotelean opinion that lines, areas, and volumes are abstract geometric entities separated from the universal physical principles that generate them, is as fallacious as the belief in the magical powers of the Roman pantheon.

Brunelleschi used a hanging chain to guide the development of the curvature of the Dome at each stage of construction. As each course of bricks was laid, a chain was hung between the intermediate ribs to guide the curvature. Thus, the overall shape of the Dome was determined, not by a curvature defined by abstract mathematics, but by a physically defined principle. Just as a hanging chain is self-supporting in its whole and its parts, the Dome, whose curvature was guided by the curvature of the hanging chain, is, likewise, a self-sup-

porting surface, *in its whole and its parts.*

A word of caution is warranted to Aristoteleans who demand to “see” the physical shape of the catenary in the final shape of the Dome. Although Brunelleschi employed a form of the principle of least-action which Leibniz and Bernoulli later discovered was expressed by the catenary, the features of the Dome are not in the shape of a hanging chain. Rather, it is the *principle of least-action expressed by the hanging chain*, as that principle was later developed in Gauss’s theory of surfaces, Riemann’s theory of manifolds, and LaRouche’s principles of physical economy, which shaped the Dome. Writing in “Believing Is Not Necessarily Knowing,”³ LaRouche discusses his discovery:

“This connection is illustrated with exemplary appropriateness by a case I have often referenced since 1988, the lesson to be adduced from Brunelleschi’s successful construction of the famous cupola of the Santa Maria del Fiore Cathedral of Florence. I continue to emphasize that example, not merely because I succeeded, during 1987-88, in rediscovering a principle which Brunelleschi had used, with his foreknowledge of its success, in effecting a process of construction which had been

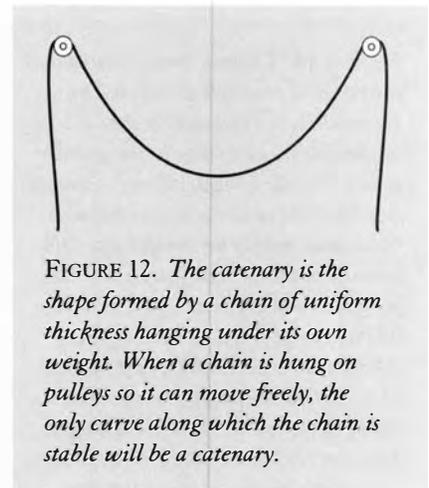


FIGURE 12. *The catenary is the shape formed by a chain of uniform thickness hanging under its own weight. When a chain is hung on pulleys so it can move freely, the only curve along which the chain is stable will be a catenary.*

thought physically impossible. The principle he used to secure that success, was the same catenary principle which Leibniz, more than two centuries later, was first to identify as the expression of the universal principle of physical least action. Here, art and science were the same principle. The otherwise impossible process of construction so effected, was a demonstration of the principle of truth expressed equally as a principle of truth in the triumph of Christian Platonic science and art, over the false, pantheonic tradition and symbols of Latin Romanticism.

“Leibniz’s principle of least action,

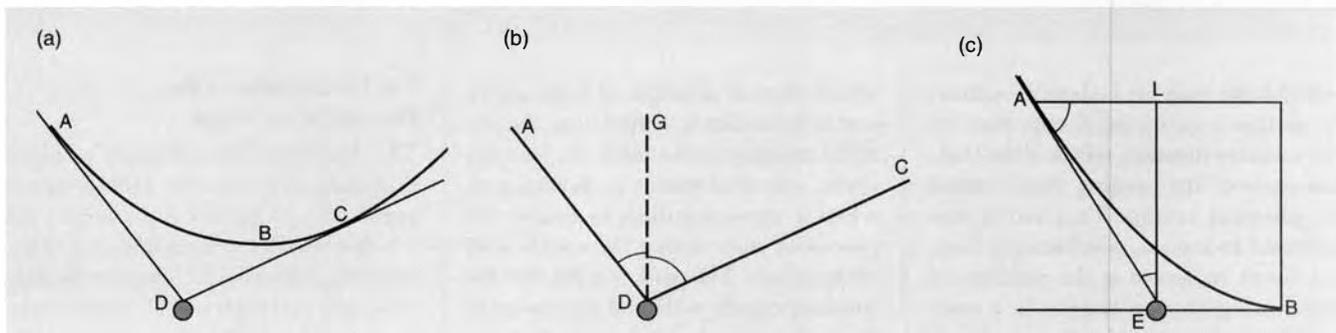
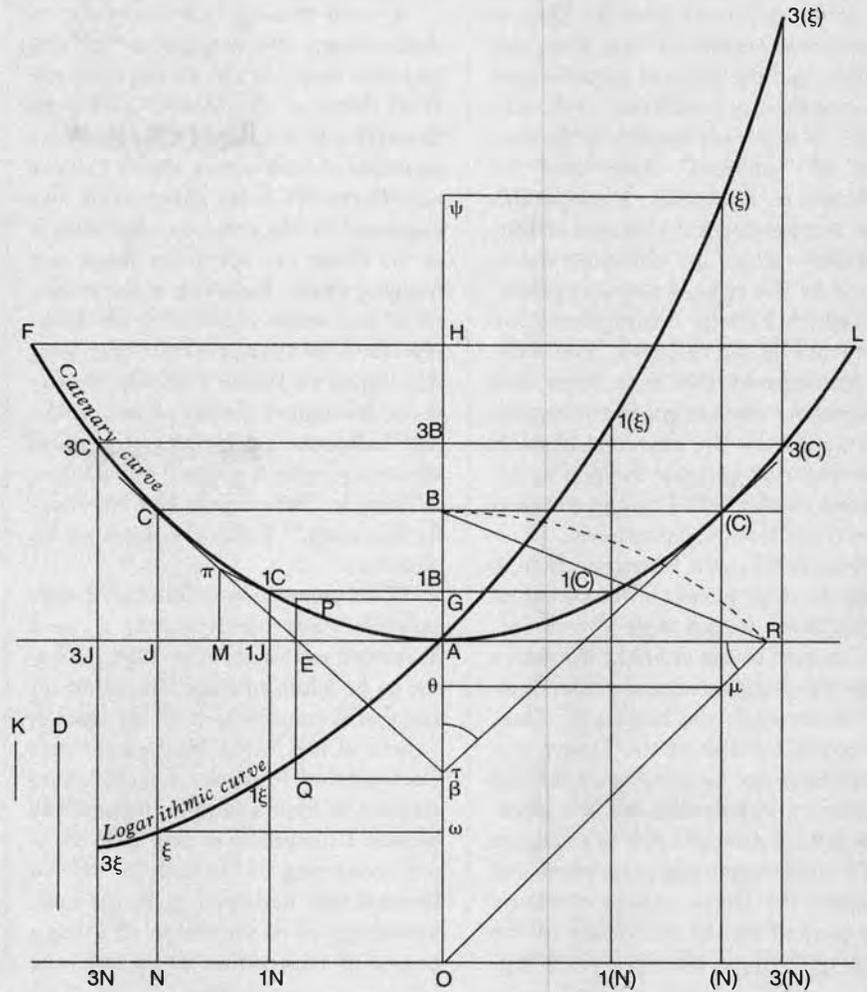


FIGURE 13. (a) Bernoulli demonstrated that the curve formed by the hanging chain was determined by physical principles. The lowest point of the chain was the singularity around which the entire chain oriented (point B). The force exerted by gravity at any two points A and C on opposite sides of the lowest point is equivalent to the force exerted by a single weight at point D, equivalent to the weight of the chain, suspended between A and C by threads tangent to the catenary at A and C. (b) Bernoulli measured the force at A and C to be proportional to the sine of the angles formed by the tangents and the vertical line drawn from their point of intersection at D. In the drawing, the force at A is proportional to the sine of angle CDG, and the force at C is proportional to the sine of angle ADG. (c) Using Leibniz’s calculus, Bernoulli demonstrated that the catenary was the curve that maintained the physical principle expressed in (a) and (b). Thus, as point A moves horizontally away from the lowest point B, it rises vertically at an increasing rate, such that the sines of angles AEL and EAL are proportional.

FIGURE 14. Leibniz demonstrated that the physical principle discovered by Bernoulli was expressed by the arithmetic mean between two curves which he called "logarithmic." Leibniz described the construction as follows: "Given an indefinite straight line ON parallel to the horizon, given also OA, a perpendicular segment equal to O3N, and on top of 3N, a vertical segment 3N3ξ which has with OA the ratio of D to K, find the proportional mean 1N1ξ (between OA and 3N3ξ); then, between 1N1ξ and 3N3ξ; then, in turn, find the proportional mean between 1N1ξ and OA; as we go on looking for second proportional means in this way, and from them third proportionals, follow the curve 3ξ-1ξ-A-1(ξ)-3(ξ) in such a way that when you take the equal intervals 3N1N, 1NO, O1(N), 1(N)3(N), etc., the ordinates 3N3ξ, 1N1ξ, OA, 1(N)1(ξ), 3(N)3(ξ), are in a continuous geometric progression, touching the curve I usually identify as logarithmic. So, by taking ON and O(N) as equal, elevate over N and (N) the segments NC and (N)(C) equal to the semi-sum of Nξ and (N)(ξ), such that C and (C) will be two points of the catenary curve FCA(C)L, on which you can determine geometrically as many points as you wish."



which is the basis for Leibniz's discovery of natural logarithms, is expressed by the catenary function, which is the physical curve of 'the hanging chain,' caused by physical action. This curve was reflected in ancient, pre-Roman Classical Greek sculpture as the principle of continuing motion caught in a mid-stream moment, as John Keats calls our attention to this equivalence of truth and beauty in his 'Ode on a Grecian Urn.'

"Once again: Truth is a matter of method! In this case, the cupola, truth as a method of art, and truth as uniquely a method of physical principle for successful construction, coincide. To succeed in sculpting a figure caught in mid-motion, the mind of the sculptor must feel the impact of what Leibniz defined as a uni-

versal physical principle of least action, just as Brunelleschi settled upon the use of the catenary, in the form of a hanging chain, a form of matter in motion even when it appears stilled, to enable the process of constructing the double wall of the cupola. The point was not that the finished cupola reflected the catenary form, but that the ability to construct those walls depended upon the principle of action expressed during each and every momentary phase of the ongoing process of construction of the still yet to be completed cupola."

The beauty of the Dome demonstrates the truth of Brunelleschi's discovery, but it would take the discoveries of Kepler, Fermat, Leibniz, Gauss, Riemann, and LaRouche to fully grasp the underlying principle.

The Development of the Physical Idea of Shape

The success of Brunelleschi's Dome demonstrated that the architectural principles of physical geometry on which it was based, were universal. This view was expressed by Johannes Kepler, who approximately 150 years later wrote, in his *Mysterium Cosmographicum*, concerning the construction of the solar system,

"We perceive how God, like one of our own architects, approached the task of constructing the universe with order and pattern, and laid out the individual parts accordingly, as if it were not art which imitated Nature, but God himself had looked to the mode of building of Man who was to be."

Kepler went on to develop, in that

work and in his subsequent *New Astronomy* and *Harmonies of the World*, that the shape of the solar system, like the Dome, was determined not by considerations of abstract mathematics (which would have indicated perfectly circular orbits), but by physically determined harmonic principles. Thus, the elliptical planetary orbits, like Brunelleschi's Dome, were the size and shape that they had to be in order to express the harmonic relationships of those physical principles.

This physically determined idea of shape took another step in its development with Pierre de Fermat's determination that the shape of the pathway of light was determined by the principle of shortest-

time, as he wrote in "Method for Research on Maximum and Minimum":

"Our demonstration is based on the single postulate, that Nature operates by the most easy and convenient methods and pathways—as it is in this way that we think the postulate should be stated, and not, as usually is done, by saying that Nature always operates by the shortest lines. . . . We do not look for the shortest spaces or lines, but rather those that can be traversed in the easiest way, most conveniently and in the shortest time." [SEE Figure 15]

Leibniz, following up on the discoveries of Kepler and Fermat, generalized these discoveries as a universal principle of least-action in his *Discourse*

on *Metaphysics*:

"[T]he Architect of all things created light in such a way that this most beautiful result is born from its very nature. That is the reason why those who, like Descartes, reject the existence of Final Causes in Physics, commit a very big mistake, to say the least; because aside from revealing the wonders of divine wisdom, such final causes make us discover a very beautiful principle, along with the properties of such things whose intimate nature is not yet that clearly perceived by us, that we can have the power to explain them, and make use of their efficient causes, along with their artifacts, such as the Creator employed them in order to produce their results, and to determine their ends. It must be further understood from this that the meditations of the ancients on such matters are not to be taken lightly, as certain people think nowadays."

From Pathways to Surfaces

Brunelleschi's Dome points the way to a still further development of the universal principle of least-action. Planetary orbits, the trajectory of light, and caterpillars, are all pathways, i.e., curves. Brunelleschi's Dome is a least-action surface.

The concepts needed to understand the implications of this distinction were developed by Gauss who, looking back (as we have been doing) on the discoveries of Kepler, Fermat, and Leibniz, developed the foundations of a physical theory of surfaces.

The context for Gauss's discovery was his measurement of the surface of the Earth, which, because it is physically determined, must, in keeping with Leibniz's principle, be a least-action surface. Over a period of more than 20 years, Gauss made careful astronomical and geodetical measurements of the Earth. Abstract geometrical considerations would suggest that the Earth would be a perfect sphere, because the sphere encloses the largest volume inside the smallest surface. But, because the Earth is a rotating body in the solar system, its physical shape is not spherical, but ellipsoidal [SEE Figure 16]. Gauss's measurements, however, determined a discrepancy between

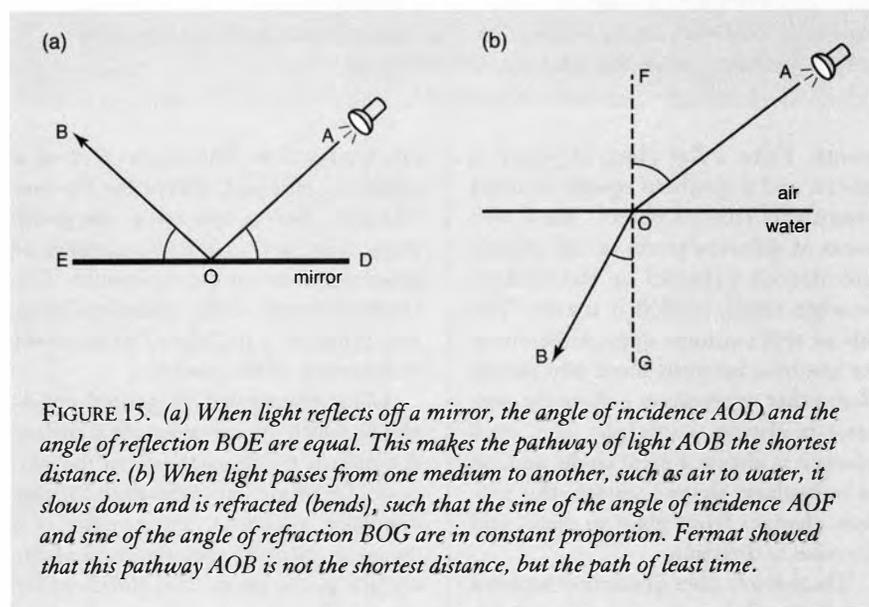


FIGURE 15. (a) When light reflects off a mirror, the angle of incidence AOD and the angle of reflection BOE are equal. This makes the pathway of light AOB the shortest distance. (b) When light passes from one medium to another, such as air to water, it slows down and is refracted (bends), such that the sine of the angle of incidence AOF and sine of the angle of refraction BOG are in constant proportion. Fermat showed that this pathway AOB is not the shortest distance, but the path of least time.

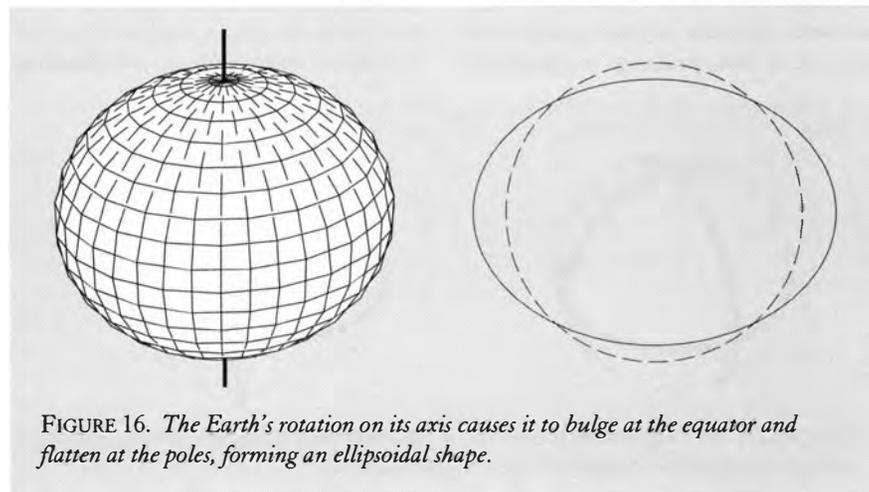
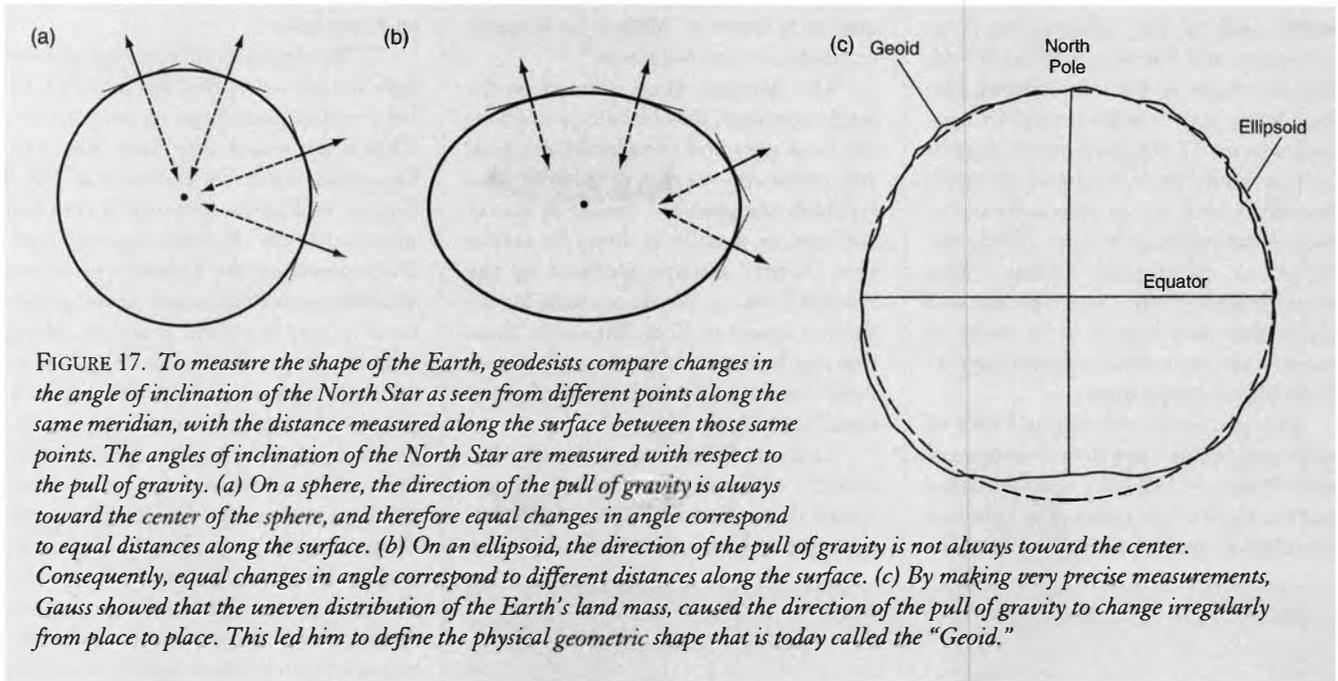


FIGURE 16. The Earth's rotation on its axis causes it to bulge at the equator and flatten at the poles, forming an ellipsoidal shape.



the geometrical shape of an ellipsoid, and the physical shape of the Earth [SEE Figure 17]. This led him to discover that the physical shape of the Earth was not that of an ellipsoid, but something more irregular. He identified the "geometrical shape of the Earth, as that shape which is everywhere perpendicular to the pull of gravity." In other words, Gauss, like Leibniz earlier with respect to the catenary, did not try to fit the Earth into a shape pulled from the textbooks of abstract mathematics; rather, he invented a new geometry that conformed to the physical characteristics of the rotating Earth.

Gauss expanded this discovery into an extension of Leibniz's principle of least-action. For Gauss, all surfaces had a characteristic curvature, which in turn determined certain least-action pathways, which he called "geodesics." For example, in a plane, the geodesic is a straight-line, whereas on a sphere, the geodesic is a great circle. In these two cases, the curvature is uniform, and so the geodesic is the same everywhere on its surface. In contrast, an ellipsoid, for example, is a surface of non-uniform curvature. Consequently, the geodesic differs depending on its direction and position on the surface [SEE Figure 18].

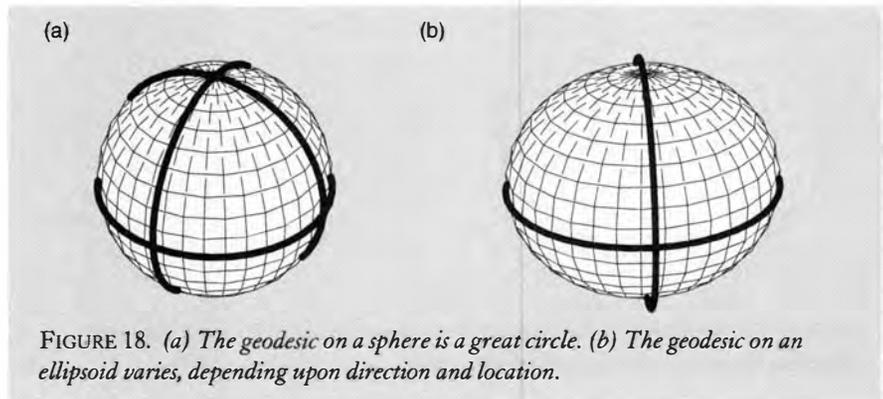
To illustrate this, the reader is encouraged to do some physical experi-

ments. Take a flat piece of paper, a sphere, and a spaghetti squash or other irregularly shaped object. Mark two points at different places on the surface and stretch a thread on the surface between them, so that it is taut. The thread will conform approximately to the geodesic between those two points. Notice that, whereas on a plane the geodesic is always a straight line, on a sphere it is always a great circle; and, on an irregularly shaped squash, the geodesic changes from place to place, and direction to direction.

There is a further distinction between the plane and the sphere or ellipsoid. On the plane, there are an infinite number of pathways between any two points, but only one of these pathways is a geodesic,

i.e., least-action. This is also true on a sphere or ellipsoid, except for the case when the two points are at the poles; then, there are an infinite number of geodesics between the two points. The bounded nature of the sphere and ellipsoid produces a singularity with respect to the nature of the geodesics.

Gauss investigated the general principles by which the curvature of the surface determined the characteristic of the geodesic. Of immediate relevance for this discussion, is Gauss's determination of a means to measure the curvature of the surface at any point. It is sufficient for our purposes here to illustrate this by a physical demonstration. Draw a circle on the squash, by tying a marker to one end of a thread and rotating it, while holding



the other end of the thread in a fixed position. The radii of this circle are all geodesics in different directions. Now, examine the curvature of each geodesic—they will vary for each direction. There will be one geodesic that is the least curved (minimum curvature), and another that is the most (maximum curvature). Try this a second time, on a different type of surface, such as a butternut squash shaped like a dumbbell. The round ends of the butternut squash have the same characteristic as the spaghetti squash, in that the center of curvature is always inside the squash; but, something different happens in the middle part, between the ends of the squash. Here, the center of curvature may be either inside or outside the squash, depending upon the direction of the geodesic. Gauss called this characteristic “negative curvature”; it is the characteristic of curvature expressed by a surface formed, for instance, by a rotated catenary, which is called a catenoid [SEE Figure 19].

Gauss proved that on any surface, no matter how irregularly it was curved, the geodesics of maximum and minimum curvature would always be at right angles to each other!

Thus, the curvature of the surface expresses a physical principle that in turn determines the geodesic, or least-action pathway along that surface. In the case of Brunelleschi’s Dome, it was the overall, physically determined shape of the sur-

face of the Dome, which determined the characteristic curvatures, longitudinally, circumferentially, and inward. Yet, while under construction, that overall shape—which was yet to be—had to be formed from the small changes in the longitudinal, circumferential, and inward curvatures. Brunelleschi’s use of the hanging chain to guide these changes of curvature in the small, expresses the congruence between the catenary principle, and the least-action characteristics of the Dome.

From Surfaces to Manifolds

Working from Gauss’s discovery, Bernhard Riemann generalized the concept still further, to the idea of a geodesic within a manifold of universal physical principles. These manifolds having more “dimensions” than surfaces, cannot be directly visualized; but, like surfaces, their characteristics can be directly known by a change in geodesic.

For example, light under reflection and refraction follows a pathway within a surface, but either type of action expresses a different pathway, because the physical manifold of refraction includes a principle—changing speed of light—that does not exist within the manifold of reflection. The addition of this new principle to the manifold of action, changes the geodesic. Inversely, when a change is measured in the geodesic, it indicates the presence of a new physical principle in the manifold.

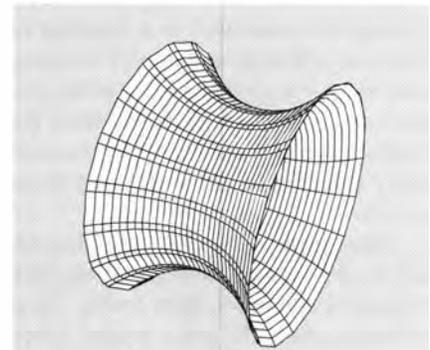


FIGURE 19. A negatively curved surface is one in which the centers of minimum and maximum curvature are on different sides of the surface. An example of such a surface is formed by rotating a catenary to form a “catenoid.”

Riemann developed the means to represent these higher manifolds by complex functions, which he expressed metaphorically as surfaces. For example, the conic-section planetary orbits and the catenary are both least-action pathways with respect to the manifold of universal gravitation. Each represents a geodesic with respect to the manifold of universal gravitation. But, this poses a paradox: Why does the manifold of universal gravitation express two different types of geodesics, conic sections for planetary orbits, and catenaries for hanging chains? When the catenary

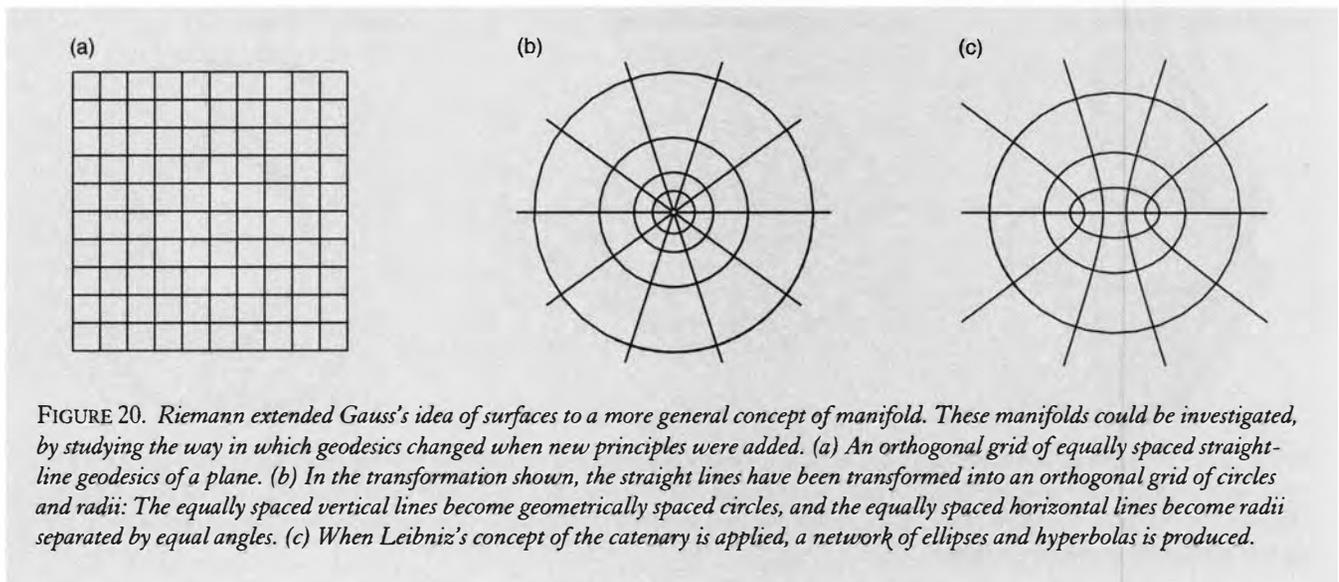


FIGURE 20. Riemann extended Gauss’s idea of surfaces to a more general concept of manifold. These manifolds could be investigated, by studying the way in which geodesics changed when new principles were added. (a) An orthogonal grid of equally spaced straight-line geodesics of a plane. (b) In the transformation shown, the straight lines have been transformed into an orthogonal grid of circles and radii: The equally spaced vertical lines become geometrically spaced circles, and the equally spaced horizontal lines become radii separated by equal angles. (c) When Leibniz’s concept of the catenary is applied, a network of ellipses and hyperbolas is produced.

principle is expressed as a function in the Gauss/Riemann complex domain, however, the conic section orbits are seen as a subsumed geodesic within the higher principle represented by the catenary [SEE Figure 20 and inside front cover].

More general examples are illustrated in the accompanying figures [SEE Figure 21 and inside front cover]. These illustrate how the same action, when carried out in different manifolds, is changed by the characteristics of the manifold. Think of the orthogonal nets in each figure as the minimum and maximum geodesics in each manifold. In each case, the loopy curve maintains the same angular orientation with respect to these geodesics. But, because

the geodesics change from manifold to manifold, the action changes. Thus, a change in the principles that determine the manifold, changes the geodesics, which in turn changes all action within that manifold. Inversely, to effect a change in any physical action, one must act to change the characteristics of the manifold in which that action occurs.

Now look at Brunelleschi's Dome from this standpoint. The Dome is a surface whose geodesic, in principle, conforms to the catenary. As a least-action surface, it expresses a geodesic with respect to the principle of universal gravitation. With respect to the manifold of universal history, building the Dome was the geodesic from that dying culture of the Roman Empire, to the

Fifteenth-century Golden Renaissance. At our present place in the manifold of universal history, building LaRouche's "combat university on wheels" youth movement, and making LaRouche President of the United States, is for us, Brunelleschi's Dome—the geodesic from today's looming Dark Age, to a new Renaissance that never ends.

—Bruce Director

1. See Nora Hamerman and Claudio Rossi, "Brunelleschi's Dome: The Apollo Project of the Golden Renaissance," *21st Century Science & Technology*, July-August 1989 (Vol. 2, No. 4).
2. *Ibid.*
3. Lyndon H. LaRouche, Jr., "Believing Is Not Necessary Knowing," *Executive Intelligence Review*, Jan. 17, 2003 (Vol. 30, No. 2).

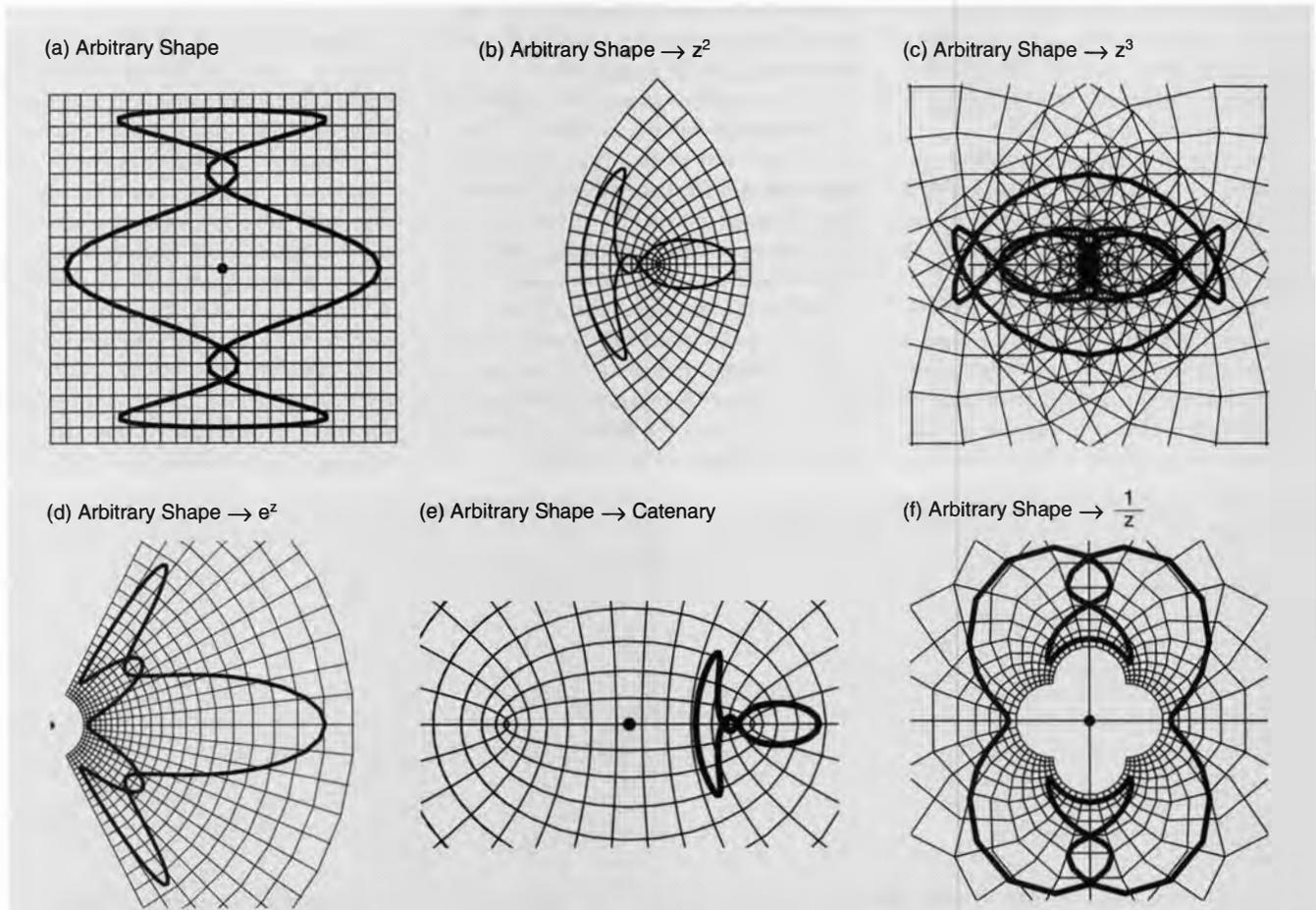


FIGURE 21. Examples of Riemann mappings. Here an arbitrary loopy curve is seen with respect to a manifold of changing geodesic. The curve maintains the same angle with respect to the geodesics, as the geodesics change from (a) straight-lines, to (b) parabolas, to (c) cubic curves, to (d) circles and radii, to (e) ellipses and hyperbolas, to (f) inversions. With each transformation of the manifold, the action represented by the curve changes.

A 'Resurrection' of Science and Art

The painting was over 500 years old. Sarah Fisher's forefinger reached to touch the surface. "You see," she began—

At any moment, I expected to see flashing "Do Not Touch!" signs, accompanied by alarm bells, and a protective swarm of museum guards.

But the room remained silent. Fisher continued, "I've cleaned the layers of old varnish from about half of the surface. . . . It was so dark and discolored, and the varnish was so yellow and murky, and it hid the quality of the painting completely, and it also hid all the damage." Fisher, head of

Painting Conservation at the National Gallery of Art (NGA) in Washington, D.C., was bringing this painting of "The Raising of Lazarus" by the Fifteenth-century Renaissance artist Benozzo Gozzoli, back to life. By so doing, restorers like Fisher preserve and transmit the precious cultural artifacts of the past, in a way echoing the artist/scientists of the Renaissance, who studied and revived the literary and artistic works of the Greek Classical period.

For, the Golden Renaissance itself was the rebirth of Classical art and science, and self-consciously so.

* * *

In the early years of the Fifteenth century, when the young Filippo Brunelleschi was thinking about how to construct the huge cupola over the nave of the Cathedral of Florence, he journeyed to Rome, to study the ancient Roman buildings—especially the Pantheon, with its large rounded dome, still standing 1,300 years after it was built by an unknown, although probably Greek architect/engineer, in about 120 A.D. Later, when the young Leonardo da Vinci was apprenticed to the artist Andrea del Verrocchio in the 1460's, he would have copied his master's sculptures and paintings, before attempting to create his own works.

Even today, art students will copy the paintings and sculpture of the Great Masters, to learn their secrets. And all of us, even if we are not trained artists, are privileged to enjoy works that may be hundreds, or even thousands, of years old.

And today, such techniques as electron spectroscopy, x-radiography, infrared reflectography, and microscopy, aided by computers, are available to assist conservators in restoring masterpieces to an approximation of their original condition, so that the public, as well as art historians and other professionals, can continue to study and enjoy the greatest artworks of the past.

Here in Washington, D.C., for

example, we are extremely fortunate to have at the National Gallery one of the rare paintings by Leonardo da Vinci—the portrait of "Ginevra de' Benci," painted in 1474, when Leonardo was about 22 years old. This portrait was already nearly 500 years old, when it was purchased by the Gallery in 1967. It is the only painting by Leonardo in the Western Hemisphere, although there are many drawings scattered among museums in the United States. Leonardo executed barely more than a dozen paintings in his lifetime.

When the "Ginevra" arrived at the National Gallery, it was covered with a yellow varnish, which had darkened over the years. In 1991, the conservators decided to clean the painting. This decision was not taken lightly, since the general rule for

conservation of works of art, is the same as that of medicine: First, do no harm. In other words, don't touch a masterpiece, even if it is covered by layers of protective varnish, earlier repairs, and even repainting, unless it is absolutely necessary, and, it has been determined after careful examination, that the intervention will not cause an irreversible loss of the original media.

In the case of the "Ginevra," the Gallery found that it was in remarkably good condition, despite its age. The only irreparable damage was the mutilation, about 200 years earlier, by an owner who cut off the lower one-third of the painting, destroying the composition's proportions by eliminating Ginevra's arms and hands. Leonardo's other portraits of women—the "Lady with an Ermine" and the "Mona Lisa" are both half-length, and include the hands, which Leonardo believed to be as essential as the face in giving expression to the character. (Think of the role of the hands in

Sarah Fisher shows "Eumostos of Tanagra," by the Master of the Griselda Legend, 1495/1500.



EIRNS/Fletcher James

giving life to the emotional reactions of each of the Disciples in Leonardo's "Last Supper.") A drawing in silverpoint in the Windsor Castle collection, done the same year as the "Ginevra," is thought to have been a study for the portrait's hands. The Gallery has used computer imaging to recreate what the painting would have looked like, before it was cut down [SEE illustration].

Then, when NGA scientists subjected "Ginevra" to infrared and ultraviolet photography and x-radiography, two surprising discoveries were made: First, the revealed underdrawing showed that Leonardo used a "pouncing" method to transfer his drawing to the canvas. Most likely, Ginevra posed for him in her home in Florence, where Leonardo would have made his drawing, or perhaps several; he would then have taken the drawing back to his studio, and, by making fingerpricks along the outlines of the drawing, transferred the drawing to a panel, by "pouncing" the surface with a small bag of charcoal dust, to leave a dotted outline on the canvas. Thanks to today's technology, it is possible to see the working technique of this Renaissance genius—the computer images show precisely such pouncing dots around the eyes and lips of Ginevra [SEE illustration].

Even more exciting to conservators, was a fingerprint of Leonardo himself, left in the paint. Leonardo would use his finger, placed directly on the paint, to soften the outline between an object and the atmosphere around it, a technique he called "*sfumato*." This blurring of outlines creates a slight impression of *motion*; it was Leonardo's invention, based on observations described in his *Notebooks*, that the eye does not see sharp outlines. Elsewhere, in his notes on painting, Leonardo says, that light and shade should blend "without lines or borders, in the manner of smoke [*fumo*]."



Department of Imaging and Visual Services, National Gallery of Art, Washington

Leonardo da Vinci's "Ginevra de' Benci," 1474. Above: Computer reconstruction as figure in half-length. Top right: Infrared detail shows pouncing dots around the eye.



National Gallery of Art, Washington, Alisa Mellon Bruce Fund



EHRNS/Fletcher James

The Brancacci Chapel

One of the most important restorations of the past quarter century was that of the fresco cycle, *The Life of St. Peter*, in the Brancacci Chapel, in the church of Santa Maria del Carmine in Florence (c. 1425), which was restored in the 1980's. The cycle is the work of the painters Masolino and Masaccio, who collaborated on a number of the frescoes, and of Filippino Lippi, who completed the unfinished ones. Over time, the frescoes had become badly damaged, particularly by soot from the candles burned in the church for over 400 years, as well as by other environmental factors. Then, there was also damage from numerous earlier "restorations," overpaintings, and cleanings.

So many of the frescoes on the walls of Italian churches have survived, because the fresco (Italian for "fresh") technique makes the painting relatively permanent. In true, or *buon fresco*, the artist applies water-based paints directly onto the wet plaster of the wall, which then dries with the wall and becomes

"permanent." Only as much wet plaster as the painter can finish in one day is applied to the wall (this is called a "*giornata*," meaning a day's work), and then that section is painted. As long as the wall is still standing, the painting will be there. But, the vicissitudes of weather, moisture, and other factors, can cause damage to the wall, and to the paint. Colors can fade or darken, or, as with the Brancacci chapel, soot or other conditions can cause the fresco to deteriorate. Thus, even paintings done in the *buon fresco* manner, will change in appearance over time.

This is not an insurmountable problem, so long as the original paint has not been damaged. Most frescoes can be returned to a reasonable approximation of their original condition through restoration (although, like anything that ages, there will be the inevitable signs of wear and tear). It has only been in the last half-century, or so, that advanced methods of chemical analysis of paints, varnishes, canvases, and so forth, have been available to aid the restorer in

determining whether, and how, to carry out a restoration.

One of the most dramatic discoveries to emerge from the cleaning and restoration of the Brancacci Chapel, concerned Masaccio's "St. Peter Healing with His Shadow" [SEE illustration and front cover, this issue], a fresco based on the New Testament Acts of the Apostles: "Insomuch that they brought forth the sick into the streets, and laid them on beds and couches, that at the least the shadow of Peter passing by might overshadow some of them" (Acts 5:15).

In 1771, fire destroyed much of the Church of Santa Maria del Carmine. Miraculously, the Brancacci Chapel in the right transept of the church was spared. But, although they were not destroyed by the fire, the frescoes were damaged by smoke and heat. Over the next two centuries, the resulting layers of grime were coated with "protective" varnish and repainting. Coincidentally, in 1748, long before the fire, a large Baroque altar had been mounted on the rear wall of the chapel, which partially covered a section of the paintings. When the decision was made in 1980 to clean and restore the frescoes, the first step was to remove the altar.

Lo and behold! What the restorers discovered, overturned everything written up to that time about the Chapel frescoes. Moving the altar revealed an entire section of "St. Peter Healing with His Shadow," in fine condition, as it had been protected from the fire and subsequent attempts at repair. It was now possible to see, for the first time in more than 200 years, the façade of a Classically designed church, a bell tower, a column crowned with a Corinthian capital, and a section of blue sky, painted in Masaccio's clear, fresh colors. With the altar removed, and cleaning of the fresco completed, the restorers were amazed to see that the familiar scene

from the Acts was not set in a poor, dingy city slum, as it had appeared for two centuries, but rather, in an open, sunlit Florentine cityscape, the most realistic ever depicted up to that time.

The miracle described in the Acts comes alive in Masaccio's rendering: St. Peter's shadow heals the sick as he walks along the familiar streets of Florence—for example, the building Peter passes on his right is identifiable as the palace of the powerful Strozzi family. The Classical architecture of the now-visible church, along with the sophisticated perspective of the entire fresco cycle, demonstrates the influence of Filippo Brunelleschi, who by that time had already collaborated with Masaccio on the architectural setting depicted in the latter's revolutionary "Trinity" fresco in Santa Maria Novella (c. 1425). Masac-

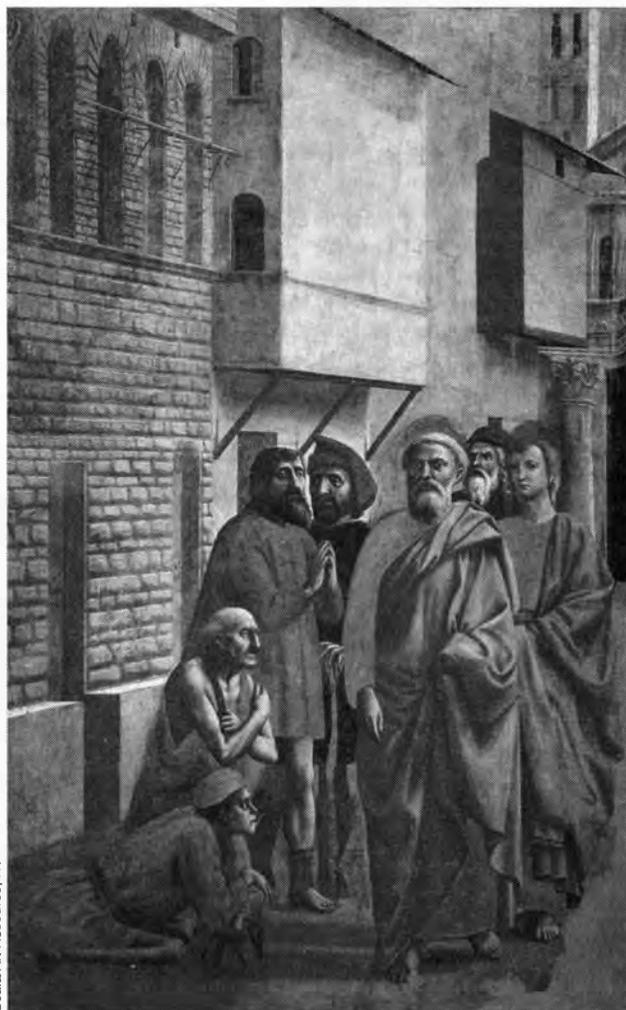
cio's Classically modelled figures also reflect the influence of Donatello, the young sculptor who accompanied Brunelleschi to Rome in 1401, where they studied Roman copies of Greek sculpture.

'In the Mind of the Artist'

In the months before his death in 1497, the Florentine artist Benozzo Gozzoli painted a "Raising of Lazarus" [SEE inside back cover, this issue]. It is a small (about 25" × 32") oil painting on canvas; its palette reflects the clear, sun-drenched colors of the Tuscan landscape: rich blues, reds, and ochres. Light fills the scene, as the miracle of Lazarus's resurrection evokes a range of responses on the faces of the crowd gathered to witness it.

Today, Benozzo's painting sits on an easel in the conservation workshop behind the public galleries of the National Gallery, which has owned it since 1942. The painting of Lazarus is itself being "resurrected," under the skilled hand of Sarah Fisher, head of Painting Conservation at the Gallery. The work, which had been reduced to a nearly uniform yellow-to-brown color range by layers of varnish and overpainting from previous restorations, is being given new life, as the original palette of Benozzo is revealed on the right half of the canvas. Fisher expects "Lazarus" to be fully restored in about two years.

At the time of our visit, in November 2002, Fisher had spent about three weeks painstakingly removing layer after layer of varnish and overpainting from the painting's surface. This work is done by placing the canvas under a microscope and, with a handmade cotton swab, carefully applying a solvent to the surface, and removing, ever so delicately, the layers on top of the original paint. Often, once the surface is exposed, areas are



Masaccio, "St. Peter Healing with His Shadow," c. 1425.

uncovered where virtually all of the original paint is lost, usually the result of a previous restorer's overzealous cleaning. In such cases, a process called "in-painting" may be undertaken, where the restorer carefully matches the color and texture of the original paint, and meticulously "paints in" the missing color, or applies a pale wash which blends with surrounding colors (this was done in the recent restoration of Leonardo's "Last Supper" for example).

Each step of the restoration process is carefully recorded, so that future art historians and restorers will be able to see exactly what was original, and what was added. Needless to say, in past times such care was not taken. Today's technology makes it possible to detect almost everything that was done previously to a painting, even in the absence of such records.

The art restorer faces an enormous challenge, when approaching the restoration of a work of art. An array of skills—a marriage of art and science—are called for. In Fisher's words, the restorer must put herself "in the mind of the artist," a process which can be likened to the performance of a great piece of Classical music—the performer must discover what was in the mind of the composer, in order to perform the composition. Moreover, a veritable "orchestra" of instrumentalists—art historians, scientists, technicians, color analysts, and so forth—work together to return a work of art to as close to its original condition as possible. In fact, most of the works of art you see in a museum, be they paintings, sculpture, altarpieces, etc., have undergone some form of conservation/restoration, before being displayed to the public; some have undergone many such procedures.

Benozzo's 'Lazarus'

Benozzo's "Lazarus" was an unusual painting for this artist, and even for the period, because it was done in oil on canvas. Only in the last quarter of the Fifteenth century did oils come into use in

Italy, when oil paintings from northern Europe, like those of the Flemish painter Jan van Eyck, began circulating. (Leonardo da Vinci was so taken by the beauty and richness of the oil colors, that he attempted to incorporate them into his fresco of the the "Last Supper," painted about the same time as Benozzo was working on the "Lazarus"—to famously disastrous results!) "Benozzo, as far as we know, only did two paintings in oil on canvas, very late in his life. All of his earlier paintings are tempera on wood, or fresco—he's well known for his frescos," according to Fisher.

The "Lazarus" had been in storage for the last 30-odd years. Fisher described its condition when she began to clean it: "Usually we can tell where damages are in paintings using x-radiography. But in this case, in order to help the fragile original canvas, to give it some support, it was restored many years ago—probably 50 years ago at least—by gluing a new canvas onto the back, and that new canvas had a lead-white layer on it, it was pre-primed with a lead-white layer. That lead-white does not allow x-rays to penetrate through the composite. So we couldn't see anything when we looked at the painting with x-rays. So, we just didn't know quite what the extent of the damage was. I estimated, in looking through the old varnish, that it was probably in bet-

ter shape than used to be thought."

Fisher then described what she discovered, as the old yellow varnish began to be removed: "We were all pleasantly surprised by how beautiful the original paint is. It's very delicately applied—it's almost like water-color, and it's done in lovely, sort of sketchy strokes. Taking off the old varnish, really reveals the high quality of the painting. And also, during that process, I also remove all the old retouchings, the old restorations, which by now have become really discolored with time, so they no longer match the original paint, the way they must have in earlier times. They probably matched perfectly when the earlier restorer first put them on. But, with time, all of these materials age and change color."

Fisher is cleaning the "Lazarus" down to the original paint, because, "there are a lot of old overpaints on it that were applied directly onto the original paint, and aren't separated from it by any varnish layers. So to get them off, I pretty much have to go down to the original paint." The restorer has to use different solvents to remove the overpaints, "because they are usually made of a tougher material than varnish. . . . They might be painted in tempera, or they might be painted in oil. . . . In some cases I can use a specific solvent to get them up, but other times, they're so tough, but yet they cover so much original, and I want to reveal as much of the artist's original as possible, so I delicately pick them off with a little scalpel under the microscope."

When Sarah Fisher completes the restoration of Benozzo's painting, it will be hung upstairs in one of the galleries dedicated to the NGA's extensive Italian Renaissance collection. Then, the public will have the pleasure of viewing this 500-year-old masterpiece, as the artist first painted it.

—Bonnie James



Fisher demonstrates the microscopic process of cleaning Benozzo Gozzoli's "Raising of Lazarus," 1497.



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Sarah Fisher, head of Painting Conservation at the National Gallery of Art, demonstrates microscopic cleaning process to author Bonnie James.



EIRNS/Fletcher James

A Resurrection of Science and Art

In the months before his death in 1497, the Florentine artist Benozzo Gozzoli painted a 'Raising of Lazarus.' It is a small oil painting on canvas; its palette reflects the clear, sunlit colors of the Tuscan landscape: rich blues, reds, and ochres. Light fills the scene, as the miracle of Lazarus's resurrection evokes a range of responses from the crowd gathered to witness it.

Today, Benozzo's painting sits on an easel in the conservation workshop behind the public galleries of Washington's National Gallery of Art. The painting of Lazarus is itself being 'resurrected,' under the skilled hand of Sarah Fisher, head of Painting Conservation at the Gallery. The work, which had been reduced to a nearly uniform yellow-to-brown color range by layers of varnish and overpainting from previous restorations, is being given new life, as the original palette of Benozzo is revealed on the right half of the canvas.

Fisher has been painstakingly removing layer after layer of varnish and overpainting from the painting's surface. The canvas is positioned under a



National Gallery of Art, Washington

microscope and, with a hand-made cotton swab, a solvent is carefully applied to the surface, and the layers on top of the original paint are delicately removed. Once the surface is exposed, areas are revealed where the original paint is lost

(usually the result of a previous overzealous cleaning). In such cases, 'in-painting' may be undertaken, where color and texture of the original paint are carefully matched and meticulously painted in, or a pale wash that blends with surrounding colors is applied.

The restorer marshals an array of skills uniting science and art. As Fisher says, she must put herself 'in the mind of the artist,' similar to the case of great Classical music, where a performer must discover the intent of the composer, in order to perform the composition. Here, a veritable 'orchestra' of instrumentalists—art historians, scientists, technicians, color analysts, and so forth—work together to bring the work of art back to life.

[SEE "A 'Resurrection' of Science and Art"]

Above: *Benozzo Gozzoli, 'Raising of Lazarus,' 1497. The right side of the painting has been cleaned.*

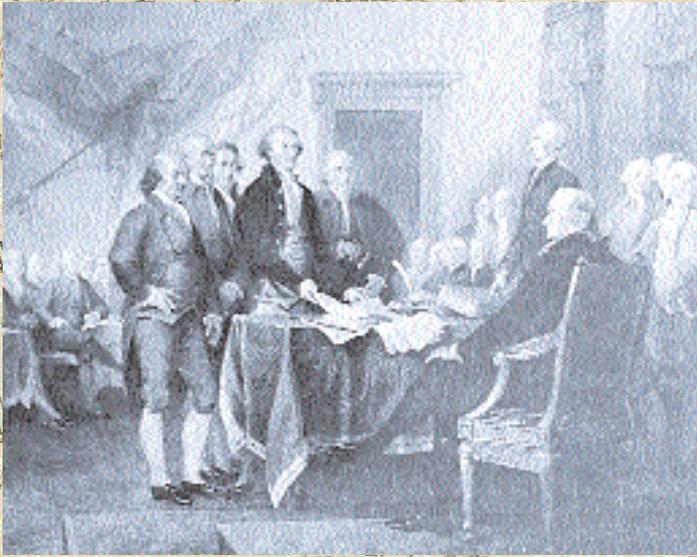
Left: *Conservator of paintings Elizabeth Walmsley shows infrared reflectogram of Raphael's 'Small Cowper Madonna,' 1505.*



EIRNS/Fletcher James

The Next Generations

Lyndon H. LaRouche, Jr. presents a *tour de force* synthesis of the historical development of the arts, sciences, and politics, as he poses the task facing the youth generation: ‘There is no perfect model of a just form of nation-state in practice today. The job is, to bring practice into conformity with scientific principle—to establish the Classical principle securely in power, at last.’



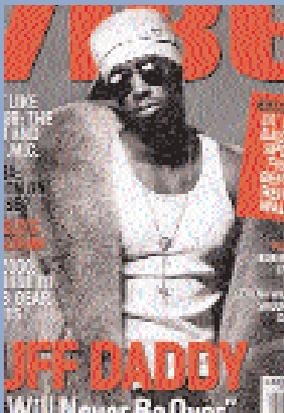
SYMPOSIUM

Leibniz and the American Revolution

Contrary to the lying history that the American republic was based on ‘property’ and personal greed, a symposium of authors—Edward Spannaus, David Shavin, and Marcia Baker, drawing on the work of historians H. Graham Lowry, Anton Chaitkin, Philip Valenti, and Robert Trout—respond to Lyndon LaRouche’s call for research into the seminal role of John Locke’s political and scientific opponent G.W. Leibniz, in providing the intellectual basis for the ‘American exception’ wrought by Benjamin Franklin and the Founding Fathers. Author Shavin provides an overview of the political offensive of cultural optimism, incorporating the efforts of scientists Abraham Kästner and R.E. Raspe, to focus Franklin’s decades-long struggle to found a republic based on Life, Liberty, and Leibnizian *Happiness*.



Photo credits: Leonardo, Biblioteca Ambrosiana, Milan; Declaration, Leibniz, Library of Congress



Who Owns ‘Your’ Culture?

Harley Schlanger shows how mob control of the entertainment industry helps the oligarchy control society through degradation. ‘Why has so much of human history been so damned ugly? Why has man’s inhumanity to man dominated during most periods of human history? To the extent you embrace the dominant culture, you are embracing your own slavery.’

