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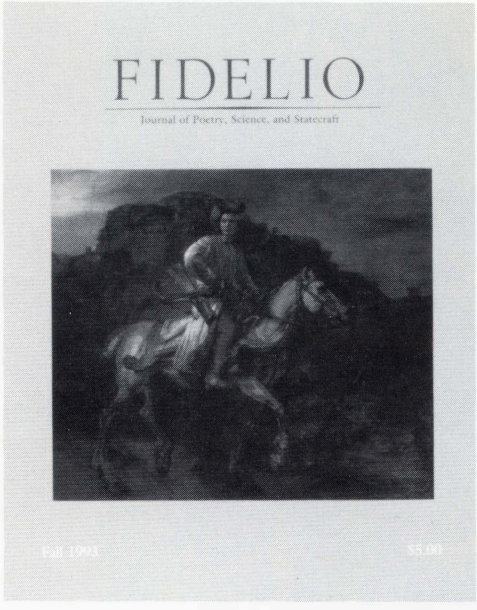

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FIDELIO

"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 men.

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On the Cover
Raphael Sanzio, *The Transfiguration* (1520). SEE inside back cover for analysis. (Photo Vatican Museums)

SYMPOSIUM: 'HISTORY AS SCIENCE'

FID 93-004

'Outcome Based Education' Must Be Ousted To Save Western Civilization!

EDITORIAL

On Labor Day weekend, September 4-6, 1993, the Schiller Institute and the International Caucus of Labor Committees, the philosophical association founded by Lyndon H. LaRouche, Jr., co-sponsored an educational conference in Northern Virginia entitled, "History as Science—Get the Devil Out of Davenport!" The presentations delivered at the conference, a selection of which are published in this issue of *Fidelio,* were designed to be elaborations for public discussion of the critical concepts developed by LaRouche in his essay, "History As Science: America 2000," which was published in the Fall 1993 issue of *Fidelio* (Vol. II, No. 3).

Recent developments in Russia, Somalia, Bosnia and elsewhere have demonstrated the absolute validity of LaRouche's thesis, that the governments of the Western powers are marching toward a fate similar to that of the governments of the socialist world, unless they change the axiomatic assumptions of their foreign and economic policies.

In his essay, LaRouche wrote as follows: "As long as governments refuse to overturn, or to violate openly, those axiomatic policy-assumptions associated with monetarist dogmas of 'free trade,' 'privatization,' 'deregulation,' 'central banking' of the Federal Reserve system type, and anti-scientific, 'neo-Malthusian,' 'post-industrialist' utopianism, there is no policy, no law, no budget which could be enacted by government without far more disastrous consequences than the circumstances would be without such 'reforms.' That, combined with the continuation of the geopolitical Versailles institutions and mythology, is the reason every government in the world is at the brink of collapse at this moment of writing.

"Until a government is willing and able to take 'dirigistic' forms of programmatic economic action which violate directly, and fundamentally the mythologies of 'I.M.F. conditionalities,' 'neo-Malthusianism,' 'post-industrialism,' and 'free trade,' that government will go from bad to worse, in rapid succession. For such reasons every government of this planet is presently near the brink of collapse, and perhaps the disintegration of its nation. The indicated economic issues are either explicitly, or implicitly the central feature of the worsening loss of the moral authority to govern, worldwide."

Unfortunately, not only do these axiomatic assumptions presently determine the domestic and foreign economic policy of the United States, but also these same axiomatic assumptions underlie both the "Politically Correct" ideology which prevails on the nation's college campuses and all of the multifarious New Age educational reforms linked to the "Outcome Based Education" (O.B.E.) project, with which our children, from kindergarten through high school, are literally being brainwashed and molested spiritually.

As LaRouche emphasizes in his speech to the conference printed in this issue, since U.S. Supreme Court Justice Hugo Black, who was a lifelong Ku Klux Klan member and Freemason, opened the door to the elimination of any expression of monotheistic religion from state functions, including public schools, on the basis of

a radical, unconstitutional interpretation of separation of church and state, the belief of our people in the three interrelated precepts of the sanctity of the life of every individual as created in the image of God, the importance of the nuclear family, and the sovereignty of the nation-state, has been allowed to be progressively undermined.

The point has now been reached that the very capacity of our citizenry to think and participate in the deliberations of our Republic is being totally sabotaged by a public school system whose curricula have been designed and imposed upon the population by gnostics and satanists. School systems which oppose such educational methods are threatened with loss of accreditation and funding; teachers who resist are threatened with being fired; parents who protest are slandered as right-wing religious or political extremists, and have even been accused of child abuse; children who do not conform may be branded for life.

The solution is not to flee the battlefield by enrolling one's children in private school. *Such a course of action will not save the nation.* Each and every one of us has a moral responsibility, not to "opt out," but rather, as LaRouche emphasizes, to fight to eliminate "*immediately,* this school year, from the educational system of the United States, from the primary grade and kindergarten all the way up to the universities, Outcome Based Education or the same thing, the same satanic program presented under various other labels."

As LaRouche concludes: "We are at the point of decision. We are at the *punctum saliens.* It is not enough to react against things; we have to react against *evil.* We are so composed, as Leibniz indicated, in this 'best of all possible worlds,' that when we, motivated by reason, act against evil, name evil, and say this must cease, and bring into place at the same time the good which must supersede the evil; when we do these three things together, then mankind can survive."

The recently concluded Middle East peace accord between Israel and the Palestine Liberation Organization is an example of the kind of breakthrough required on all fronts. This accord was made possible by the fact that both sides have recognized that the only basis for peace is economic development—as LaRouche has emphasized repeatedly since 1975.

Knowledge

She is to one the high, the celestial goddess, to th' other
Just a capable cow, which him with butter provides.

Archimedes and the Student

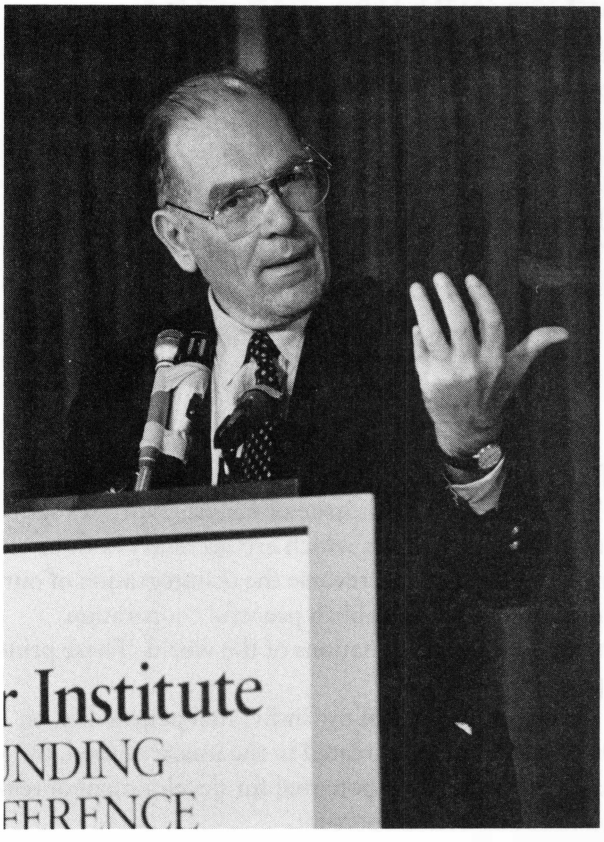
To Archimedes came a youth desirous of knowledge.
"Tutor me," spake he to him, "in the most godly of arts,
Which such glorious fruit to the land of our father hath yielded
And the walls of the town from the *sambuca* preserved!"
"Godly nam'st thou the art? She is't," responded the wise one;
"But she was that, my dear son, ere she the state ever served.
Wouldst thou but fruits from her, these too can the mortal engender;
Who the Goddess doth woo, seek not the woman in her."

—*Friedrich Schiller*

A resolution adopted at the conference "In Support of a Christian-Judaic-Islamic Ecumenical Policy," which is printed in this issue of *Fidelio,* expresses succinctly those principles which are necessary both to save our children and reverse the disintegration of our nation, and also to establish peaceful cooperation among the sovereign nations of the world. These principles are:

- The sacredness of the individual personality, on the basis that man is created in the image of God, by virtue of the spark of potential for development of reason in the individual person;
- The sacredness of the family as the institution for primary nurture of that individual free from willful incursions by the state or other agencies in violation of natural law; and
- The sacredness of the sovereign nation-state, through which the reason of the individual participates in the affairs of mankind by means of a rational deliberation of a people over their own affairs.

And thus the solution to both the political-economic crisis facing the world, and to the moral crisis in our homes and schools, is the same—to mobilize an ecumenical movement of Christians, Jews, Muslims and other men and women of good will, to insist that in both public policy and private life we affirm the central principle of Western Civilization: that man is created in the living image of God. From that standpoint, we will tolerate neither an economic policy nor an educational system that reduces any man, woman, or child to the status of an unthinking beast.



EIRNS/Stuart Lewis

Lyndon H. LaRouche, Jr.

The Spirit of The Golden Is Mankind's

by Lyndon H. LaRouche, Jr.

I shall focus in, as with a zooming microscope, on a very specific aspect of the matter which I presented in my paper on "History as Science."* I have referred to this relatively microscopic matter on a number of occasions recently; and now I shall attempt to describe what I consider its most essential features again, in a form suitable to the proceedings today and this weekend.

I have indicated that it is my estimate that, in the worst case scenario, the United States begins visibly to disintegrate as a political organization within approximately three years. It might take longer, but that is the worst case scenario. In any case, if the disintegration process is not prevented during this year, the coming twelve months or less, then the disintegration will surely occur by the end of this century.

I want to indicate the reasoning for that again, although I have indicated elements of this in earlier communications.

Firstly, one must see that political institutions of government and other key institutions which form a quasi-governmental role in society, depend upon their logistics. This includes departments of Federal, state, and local government and other such institutions, which include essential infrastructure, such as railway systems and power systems, private and public utilities which are not government.

Therefore, if economic breakdown, or physical economic breakdown occurs, and certain kinds of financial breakdown as well, then these institutions of government cease to function. And if, under such circumstances that

Lyndon H. LaRouche, Jr. delivered this keynote address by audio tape to the Schiller Institute Conference held on Sept. 4, 1993 in Tyson's Corner, Virginia. He remains a political prisoner in Federal prison in Rochester, Minnesota.

* "History as Science: America 2000," *Fidelio,* Vol. II, No. 3, Fall 1993.

Rembrandt van Rijn, "The Polish Rider," 1655 (detail) (see inside back cover).

History As Science

America 2000

by Lyndon H. LaRouche, Jr.

Feb. 8, 1993

The year a.d. 2000 is less than two U.S. Presidential terms away, about the same distance as from the 1981 inauguration of Ronald Reagan to the sudden, 1989 collapse of the Soviet military alliance. Today, on the hind side of the Soviet collapse, the pace of global change is more rapid than during the Reagan years; the crisis is deepening, the pace is accelerating. If present trends are considered, we must ask whether the 1989-1991 collapse of the Soviet system might not be echoed by a late 1990's collapse of our United States?

The blow which struck Moscow during 1989-1991, is not the kind of blow which can be successfully avoided at the last moment. That Moscow collapse was already building up as early as the 1983-1985 interval, as this writer then reported repeatedly to the U.S. government officials and others with whom he was collaborating closely at that time.[1] The last opportunity to prevent a catastrophe of the sort which brought down Mikhail Gorbachov's regime is lost perhaps a

11

Renaissance Best Hope

the essential institutions of government at the Federal, state, and local level cease to function, the population does not have a characteristic response which forces government to act to put things back in order, then the disintegration is, at least for the short to medium-term, irreversible. *That is the problem we face.*

In general, the cause of this disintegration, primarily from an economic standpoint, begins with the introduction of certain "utopian" goals on a large scale beginning back in the 1964-1967 period; this is the root of the collapse of not only the United States but of much of the world besides. These "utopian" goals include the launching on a mass basis of the rock-drug-sex counterculture; these include the introduction of neo-Malthusian policies of population reduction; these include neo-Malthusian policies (or Bertrand Russell policies, as you may prefer to describe them) of environmentalism, of post-industrial society. These include something which began immediately in the post-war period—Hugo Black's successful leadership in proposing actions called "separation of church from state."

All of these factors were introduced largely from Great Britain, from centers such as the Tavistock Institute, or the networks of Bertrand Russell and his Satanic friends such as H.G. Wells and Aleister Crowley and the Theosophists generally—the Lucifer worshippers.

They proposed, essentially, to eliminate the Christian basis of Western European civilization. They proposed to return to a kind of paganism, to establish a form of one-world imperial government, under some body such as the United Nations—and so forth and so on. In other words, not only to destroy the economy, but to destroy the morality and the historic basis in culture for the existence of the nation-states of Western European civilization. That's our problem.

Through the emphasis on radical free trade and radi-

cal de-industrialization, together with radical environmentalism, we have systematically destroyed the economy of the world—especially those aspects of the economy which depend upon the technology of Western Europe and North America. We have destroyed the United States to the point that this nation is no longer capable of producing its own physical needs. We must import what we need to satisfy the diminishing household budgets of our population, from other nations, including the poorest ones, which we rely upon for so-called cheap labor products in the form of food and other necessaries, as well as primary materials.

We pay for these by swindles, largely. We are engaged in financial swindles through the International Monetary Fund and other international monetary arrangements; and through these swindles, we are able to exact tribute from South America, from Africa, and from Asia. Probably about seventy percent—certainly a majority—of what we consume, depends upon these imports, which are largely dependent upon the continuation of these swindles and presumably the continuation of production in the countries from which we swindle these products.

We are in the middle of a worldwide depression—not a localized depression or a series of localized depressions, but a worldwide depression. The rate of collapse of Western Europe, is catastrophic. The continent of Europe is beginning to catch up with the disaster which has turned Britain into the rust bucket of the century.

Japan, too, is swept up in this; the developing sector nations are collapsing. South and Central America's economies are collapsing or in a state of collapse; Africa is beyond disaster. The tigers of the Asian Rim are threatened. So there is no source of economic strength outside the United States, which might succor us in our disaster.

The Response Of Government

Now, these being the causes of our problem, observe the way in which the Congress and the Presidency have responded, and increasingly the news media and public opinion, since, approximately, 1983. To be more precise, since April of 1983—a time that Paul Volcker was deployed around the Reagan administration from his position as chief of the Federal Reserve system, to impress upon the U.S. government that we could not conduct a Strategic Defense Insitiative (SDI) mobilization because of the prior urgency of the cutting the Federal budget deficit.

Every time the U.S. economy has gone deeper into the trough, the deficit has tended to grow, no matter what the reforms were to relieve it, including the foolish and failed Gramm-Rudman policy. The Congress, the majority of the population, and the politicians have responded by saying we must take stricter, harsher, budget-deficit reducing measures. We must cut this, we must cut that.

The problem for them has been that the number of employees of the non-military category, specifically, of the U.S. government, has been a shrinking percentile of the total U.S. labor force over the past twenty-five to thirty years. The only apparent growth in government expenditure has come in two areas: one, entitlements (specifically, pensions and related kinds of things, and medical care, for example); and two, in interest and related expense of service of the national debt.

Let me comment briefly on each of these, in order to give you an image of why we are talking about two to three years from now as the beginning of a *visible* disintegration of the United States as a political entity. Again, let me emphasize, that is the worst-case scenario, as I see it at this point.

First of all, the reason for the growth of entitlements as a burden, is not that they have grown; they have not. If you take a realistic inflation deflater, the actual *per capita* benefit of entitlements has *decreased* over the past decade or so. But it has *increased* in money amount.

The essential reason for the absolute decrease in physical terms of the value of these entitlements *per capita,* and the apparent relative *increase per capita* of the population or *per capita* population income, is two-fold.

First of all, the birth rate has dropped. Now, the greatest cost of pensions and medical care comes in terms of people who are fifty-five to sixty-five or older. That's the time in which you get, actuarially, a greater likelihood of needing medical care, as well as, of course, the time at which you usually begin to collect your pensions. So entitlements increase, when you tilt the pyramid of population so that you have more old people than you do younger people, relatively speaking. And the way you bring this about, is by population control.

Thus, this is a relative change, as a result of changes in population policy. We're not producing enough people to maintain the pyramid of population the way the entitlement system was originally designed. That's our first problem.

Now, look at the younger generations coming up, those under forty-six approximately, or forty especially. People of this generation are less well educated, less skilled, and more poorly employed than those of the previous generation in the earlier period, say, up to 1979.

What has happened, is that people who were previously employed, are being downgraded into flipping hamburgers or other kinds of marginal utility employ-

ment, away from high-skilled employment; and those who are of the post-1968-1970 generation of high school matriculants are savagely more poorly educated, both in content of education and actual teaching practice and in quality of concentration span for study, than those of the pre-1968 generations of students.

You look at the shift in universities and elsewhere, toward an emphasis on useless subjects in the curriculum: sociology, generally a useless pseudo-science; anthropology, a useless pseudo-science; other kinds of behavioral studies, useless pseudo-science; the introduction of "current events" substitutes for the study of history. The quality of teachers is poorer. Look at the newspapers. Look at the entertainment media. Look at the books, the television sets; all of these things. We are becoming a scientifically, technologically illiterate nation, depending upon computers to do our technical thinking for us. Technology has become the ability to use a device which has a computer which does the decision-making—at least, that's the direction of things.

We have drained capital out of our industries, which are no longer capital intensive, because we don't believe in capital intensity, at least on the policy level, any more.

In terms of government, we have collapsed infrastructure. It would probably cost us $5-7 trillion to put the public infrastructure—transportation, water systems, power production—of the nation, back into the relative condition it was in, in 1970, or about that time.

So we are losing infrastructure. Remember, infrastructure is the basis for private industrial and agricultural production. Without that infrastructure, you cannot maintain agriculture or industry.

So in all these things, we are collapsing. Now this means, that together with the government policy of downsizing everything in the name of free trade, shipping jobs overseas to places where labor is cheaper, and the fact that we have an approximately seventeen percent of the labor force which is actually unemployed, according to U.S. government survey data, we have a collapse of the tax revenue base. That is, the taxable income provided as income of households and income of industries is collapsing.

On top of this, we have an increasing demand for government payments relative to the tax revenue base from entitlements, which is unavoidable. We are collapsing the base on which entitlement payments depend, and therefore the entitlements seem to grow. They aren't actually growing; the base of payments is collapsing.

On the other side, we have the looting of government through the Federal Reserve and banking systems, looting which is accelerated by the creation of a minimal average balance of a $10-12 trillion bubble, which amounts to a turnover of over $300 trillion a year, compared with, say, $5.5 trillion of the U.S. Gross National Product.

So we see that a great useless parasitical bubble is sucking the blood out of the poor little U.S. and other economies, which are minuscule compared to this giant of a bubble.

The bubble operates against the U.S. economy largely through the U.S. banking system, and through the Federal Reserve. The Federal Reserve and the banking system—a banking system which is transformed and virtually bankrupt, in point of fact subsidized by the Federal Reserve—throw loan money in the direction of this bubble. The Federal Reserve creates the debt, to create the loan money, to fund the bubble. Thus, the Federal debt increases, and thus the debt service increases; so the only thing that's growing in the U.S. economy, is this cancer of debt, this bubble, which is caused by continued support and toleration of the banking and monetary policies of the Federal Reserve system.

The worst aspect of this complex is that, as I said, every time the United States faces a perceived new budgetary crisis, the declaimer is that we have failed to act strictly enough, to enforce deficit-reducing measures.

Now given the fact that the policies which I have cited, are the causes for the collapse of the U.S. economy, what is the effect of Washington supported by popular demand—the majority opinion—and by the news media, demanding that we administer a stronger dose of the disease that is killing us, to our economy? And that's what every reform has meant.

Therefore, if this continues—as long as you see people saying, "Deficit reduction is the primary goal of government," that free trade must be upheld, that we must export jobs to cheap labor areas overseas, and that sort of thing; and reforms in the congressional budget are based on those assumptions and those directives and imperatives in the White House—then you are going to see every reform (which come once every budget time) is going to make the problem actually worse, not better. It would be better if they made no reforms at all, if they would give up all attempt to balance the budget; that would be less bad, than it would be by their trying to balance the budget.

So, thus, we see, if you look at the figures, that in about two more budget-balancing reform cycles under present trends, given the collapse of the world economy now in progress, the United States would begin to disintegrate.

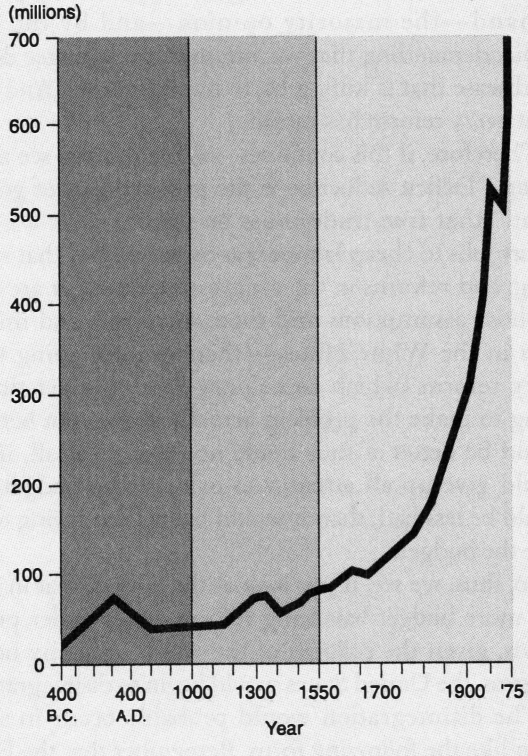
The disintegration would probably occur in something like the following form. Remember that the Federal government can have a deficit. But by law, most states and localities cannot—by their constitutions. Thus, what we are seeing, is a collapse of not only the tax revenue

base of the Federal government, but a tax revenue base which is shrinking as a result of these budget-cutting measures. That will hit, naturally, at the most vulnerable local communities, most intensely: towns and cities—and, in some cases, counties.

These will find that they have no tax revenue to meet their current obligations—or very little. That they've got to shut down the school system, the police department, or what have you. They will find that, under these conditions, the states cannot come to their rescue with financial aid; that the Federal government is cutting out financial aid. Thus, as has happened in a number of cases spottily around the country since 1984, the town or city will shut down. It will be there, the people there—drifting away, of course—but the town, with its functions, its fire-fighting system, the whole business, will be shutting down, totally or in large part.

We will find that the same thing goes on in states. We have the recent case of the budget crisis in California, where chits were being issued and then nothing was being issued for a while, while the legislature came to an agreement on a budget which allowed the state to continue to operate. That is a warning of what can happen on state levels.

FIGURE 1. *European population growth since pagan Rome.*



Note changes in time scale at A.D. 1000 and 1500.

On the Federal government level, the inability to find the revenue to cover some of the entitlements and other costs of operating sections of the Federal government, will result in a simple casting off or suspension of the operation of whole functions of the Federal government. And it is in that visible form, that you will see, from an economic standpoint, the political disintegration of the United States beginning to occur.

Now one would say: Will the people respond at that point, to say no, we've been doing the wrong thing, let's change our policy? Well, let's look at the people.

What do the people believe?

How many people you know, believe in the separation of church and state, as the Ku Klux Klan Freemason U.S. Supreme Court Justice Hugo Black campaigned successfully for this policy?

How many people accept the expulsion of prayer from the public schools? And so forth and so on.

To make it clearer, how many people are tolerating the program called Outcome-Based Education (O.B.E.), or Common Core of Learning, or the Anti-Defamation League's "World of Difference" program? How many people are allowing that sort of program to go on in their school system—not by supporting it necessarily, but simply by tolerating it, allowing it to happen to their children? This is destroying their children.

How many people think that various kinds of satanic religion ought to be tolerated as a religion—that is, ought to have the protection of a religion? Not simply supporting such a religion, but believing that these people have the same rights that we do to our religion?

Well, in that case, and with a total counterculture, you have a population which is morally incapable—at least in the majority—of responding to a visible breakdown in progress with the appropriate measures.

What we must do, of course, is reverse that. But let me go on to our next point, as to what the implication of this kind of cultural decay is, for reviving this nation.

'History as Science'

Now let me turn your attention to my paper on "History As Science," to specifically the references to the Golden Renaissance, and to the figure in that article, of the curve of population growth (SEE Figure 1).

Look at that curve. You see that on a global scale, population was flopping around, up and down, significantly but with no great change, for thousands of years, within about the same range. When a good society came into

effect, the population increased; when a bad society took over, the population levels collapsed. And then a good society might come in, and the population level would rise again.

But then, about 1440, there was a fundamental change. World population rates zoomed—or, to put it more specifically, the potential population level of the planet increased, as a result of European culture; as a result of the Golden Renaissance, which was centered around the 1438-1440 period of the Council of Florence.

What was the Council of Florence's significance relative to this population curve?

Well, it introduced, as Nicolaus of Cusa's *Concordancia Catholica* illustrates the point, the notion of the modern sovereign nation-state, as the responsible political entity. It introduced, for the first time, what we call today modern science. There were contributions to such a science going way back. We can trace it back to well into prior to 5000 B.C., in the case of certainly the Indo-European culture in Central Asia, and, as also indicated, in the ancient culture of China.

But this was not science, because it had not put under one roof the notion of the intelligibility, according to a common principle, of all branches of human knowledge of nature.

That notion of science was introduced by Nicolaus of Cusa and his associates, in the setting of the Council of Florence. And it was that Council of Florence which created this Golden Renaissance in Europe, which increased the productive power of labor in the manner you see in the upward sweep, the hyperbolic sweep, of the population curve for the world following 1440—something that had never happened before, in the entire history of mankind.

There's another aspect to this, that the Council of Florence was committed to evangelization; and despite the lying stories you heard about Columbus, Columbus *did* discover America. He did have a map. The map was highly accurate—some of the details were wrong, because the information from Venice was wrong, that is, the Venetians lied, and said that Japan and China were much further to the East than they were in actuality. That put Japan about in the middle of the Mississippi Valley.

So the Europeans, like Columbus, in particular, thought that, when they reached these islands in the Caribbean, they had sailed to islands south of Japan—that is, the Philippines, the Indonesian group. It was only later, when Columbus hit the mainland of Central America, that they realized that they had struck a continent.

But otherwise, the map, as a map of the size of the planet, was accurate, and they were accurate in their knowledge of where land lay on the other side of the Atlantic, through their study of ocean and wind currents.

So Columbus not only discovered America through a scientific method of discovery, very much like the scientific method of landing a man on the Moon, or planning to land man on Mars; it's a true scientific discovery; but there was another feature to this.

The Council of Florence, whose members constructed the accurate map, showing accurately the size of the world as a sphere, also launched a program of evangelization, so that we had Franciscans and others who were conducting evangelization among the peoples they found living in these areas which were discovered through scientific methods of exploration. We have the case of Mexico, which is one of the more successful cases, in which the Spaniards found a population of about, let's say, less than two million people, living in what we call today Mexico. And these people were living, at that instant, under a savage dictatorship of the Aztecs, who were cutting the hearts out of 18,000 living captives in one day as a religious celebration, which typifies the worse-than-Nazi-like character of the Aztecs, who were brutalizing their subjugated peoples. And this was a representation of a general decline in the culture of so-called Indian cultures over the 2,500 years preceding, at least, the arrival of, say, Cortez.

That is, we can go back to 1000 B.C. and earlier, and find much higher levels of culture than existed in, say, Mexico or Peru in A.D. 1500. We can find, for example, even in Mexico, that the children's carts had wheels on them, whereas at the time that the Spaniards arrived in Mexico, the use of the wheel had vanished, even though they knew the wheel, contrary to some rumors.

So this was a case of a degenerating culture.

The Indians, under the leadership of Cortez, freed themselves from their Nazi-like Aztec oppressors; and, through the building of cities and the work of the missionaries, especially the great Franciscan missionaries, the Indians of Mexico, for example, built a civilization. They built cities, they built cathedrals, they sang, they produced advanced mining, and so forth and so on.

Later, as Spain, like Portugal, was taken over by the Venetian and Genoese bankers, this was destroyed; and everything was reduced to I.M.F. conditionalities during the time of Charles V and Philip II of Spain.

So the looting of the New World by the Genoese bankers, very much like the I.M.F. conditionalities arrangment in Mexico today, did destroy much of the progress of this evangelization culture; but nonetheless, the technology, the potential, was transmitted.

We see, in the Franciscans and others in China, a similar attempt. But we see evangelization, where the ideas, including science (such as the science of astronomy), of Europe, was mingled with the cultures of the entire plan-

et. As a result, the level of potential population density of all nations of the world, or virtually all, was vastly increased not by European colonization—that is, by the settlement of European nations in these lands alone, but also by the cross-fertilization, if you please, of science and technology and other features of the Golden Renaissance—including the creation of the idea of the modern sovereign nation-state.

The result is, there is no longer a multicultural history of the world in a true sense. The existing population of all nations, including the largest nation, China, depends upon the maintenance and increase of science and technology, a science and technology which is original to and integral to the Golden Renaissance of Western Europe.

So without European culture, the entire planet collapses; and therefore, the planet is under European culture in such a way that the different language-cultures (there are no racial cultures, there are only language-cultures) of this planet, are assured their parity, their rights, their dignity, under a worldwide European culture, if they employ this specific method of that European culture called the absolutely sovereign, or perfectly sovereign, nation-state form.

So the cultural differentia within European culture, are protected and sustained through the institution of the sovereign nation-state; and also through the European Christian principle of *imago Dei* and *capax Dei,* that is, first of all, that every human being, by virtue of possessing the potential for developable reason, is in the image of the Creator; and that every individual, through use of the creative powers in a way which is motivated by love of mankind, that such behavior is participation in the work of God, or *capax Dei.*

Now, that's the best part of the civilization. Granted, European civilization has its bad side, which is not specific to European civilization. As a matter of fact, the bad side came from places such as the Middle East, from the Babylonian model, for example, sometimes called the Persian model in literature, but it's actually the Babylonian model. The model of usury; the model of the religious pantheon. A multicultural model, such as the pantheon of Babylon, the pantheon of the cult of Delphi; the Roman pagan pantheon.

These are multicultural models; and they are all imperialisms, they're all oligarchies, they are all forms of government which carried their subject population to the doom of that political form of existence and into dark ages of great suffering over extended periods for the people.

Look, for example, at the case of Iraq today. I was last physically in Iraq in April of 1975, when there were approximately ten million people in the whole country, with about two million concentrated around Baghdad. As I stood there in Baghdad, or along the banks of the Euphrates later there, I knew, from my 1950's work on archaeology, that in the time of Haroun al-Rashid, the great Caliph of Baghdad, contemporary of Charlemagne, there had been *thirty-five million people* living in relative prosperity in the area of today's Iraq. And I could see, traveling a brief distance up and down the Euphrates, where the systems of agriculture which would sustain such a population had once existed, and were now collapsed.

This is an example of the *evil* represented by the Babylonian system based on usury; based on oligarchism; based on multiculturalism; based on pagan pantheons of the type which the Anti-Defamation League (A.D.L.), for example, is working with the satanists, i.e., the

What Is History?

In earlier decades, the 1960's and earlier, when the business of respectable schools and universities still was education, the subject of history was introduced by calling the students' attention to the point, that we must understand the distinction between a mere chronicle of events and the taught subject which we named "history." In those past decades, in European civilization's Classical educational programs, we would be readily understood if we had said that the practice of writing history, as distinct from mere story-telling, or chronicles, begins with the application of the conceptions of composition of Classical Greek tragedy to the study of causes for induced survival or collapse of entire governments, states, or even entire cultures.

In such professionals' circles of earlier times, it would have been regarded as admissible to draw up a short list of selected great tragedians, such as the following one: Aeschylus, Marlowe, Cervantes, Shakespeare, and Friedrich Schiller. None of them would contest the outstanding relevance of Schiller for such a list. First, as to tragedy itself, Schiller was the only composer to render intelligible the principles employed by all great Classical tragedians. Second, in his capacity as Jena University Professor of Universal History, and otherwise, he was the first to render intelligible the unique connection between the methods of historiography and of composition of Classical tragedy.

–Lyndon H. LaRouche, Jr.
"History as Science: America 2000"

Lucifer Trust or Lucis Trust, to bring into the school systems of the United States today.

So, once we reject the principle upon which all of Western civilization, on which 550 years of scientific and technological progress is based, and do so under conditions of a general physical collapse of the institutions of government, of the type that threatens us during the remainder of this century—these remaining few years—*we are doomed.* We are doomed—*unless* we return to recognition of the principle upon which every success, every desirable feature of the past 550 years of history is premised.

If we do not do that, *the levels of world population must necessarily collapse*—if the Anti-Defamation League, for example, has its way. The levels of population throughout the world, must collapse to the levels of the middle of the fourteenth century, or *below.*

In other words, we must go from a world population of over five billion, to a world population in the order of a few hundreds of millions—and do that within the period of a generation or two. That means a world dominated by horrors which are beyond anything in recorded history. It means the worst outbreak of pandemics as well as epidemic diseases of old and new forms ever in the history of mankind. It means also devastation in our forests and fields. The elimination of production will not improve our forests or our fields, contrary to what these radical environmentalists say; it will actually cause them to collapse still worse, to what are called sylvatics and various kinds of animal diseases which will spread just like human epidemics and pandemics.

This planet will become, in large part, a wasteland, a desert, with people living like baboons, in terms of cultural level: groveling, unable to sustain themselves. Unless we reverse this.

The magic recipe upon which every good of our civilization depends, is the recipe of the Golden Renaissance of about A.D. 1440. Without that, this planet cannot survive; and without returning to those principles, the people of the United States could *not* reverse the political disintegration of the United States, once it begins to occur visibly, as early as, in the worst case, say about three years from now.

Thus, in my view, I have emphasized within the United States, the importance of eliminating *immediately,* this year, this school year, from the educational system of the United States, from the primary grade and kindergarten all the way up into the universities, Outcome-Based Education or the same thing, the same satanic program presented under various other labels. To eliminate the influence of the National Education Association, the Anti-Defamation League, and the Lucis Trust—that is, the Lucifer-worshipping Trust—from our school system; and to eliminate the power also, of those specific Freemasonic groups, the so-called New Age group, which have fostered and directed the NEA, the Lucis Trust, and the A.D.L., in conducting this kind of terrible sabotage of the population of our nation.

Unless we can make that reaffirmation and presumably, hopefully, respond to the situation *before* the disintegration begins to occur, then the likelihood is that the entire planet, not just the United States, will slip into the kind of New Dark Age which I have indicated.

We are at the point of decision. We are at the *punctum saliens.* It is not enough to react against things; we have to react against *evil.* We are so composed, as Leibniz indicated, in this "best of all possible worlds," that when we, motivated by reason, act against evil, name evil, and say this must cease, and bring into place at the same time the good which must supersede the evil; when we do these three things together, then mankind can survive.

I have written the paper, "History As Science," with this problem in mind, as I have more recently, since starting that paper, insisted that the elimination in the coming school year of the O.B.E. and related multicultural programs from our school system, is essential. Three principles: name the evil, attack the evil, eliminate the evil. State the principle on whose behalf we are attacking the evil, and define the action which we propose to take to replace the evil which must be removed. That is the spirit of the Golden Renaissance; that is the difference between success and impotence; the difference between reasonable action and futile protests or futile reformism.

We must each act as I indicate in the paper. We must see ourselves as individuals, as potentially the embodiments of reason, as *imago Dei.* We must look into the faces of people around the world, and see not different races or this or that distinction; but see, in those faces, in those eyes, another human being, who is also *imago Dei*—who has that potential within him. And seek to raise that potential within them, or to create the circumstances in which the ideas of doing good are presented more clearly to the individual, and in which the opportunities for doing that good, are more freely provided.

If we do that, we are participating in creation; we are of value to mankind as individuals, beyond all doubt. So again, in this "best of all possible worlds," as Leibniz described it, let evil prompt us—not merely to deny evil, which we must do (we must denounce it, as well as denying it!)—but let us be prompted by evil, as Schiller described the principle of tragedy: the tragedy of evil must be attacked, recognized, feared, and hated to such a degree, that we are willing *to do good,* finally, to supplant the evil. Thank you.

Population Growth

by Paul Gallagher

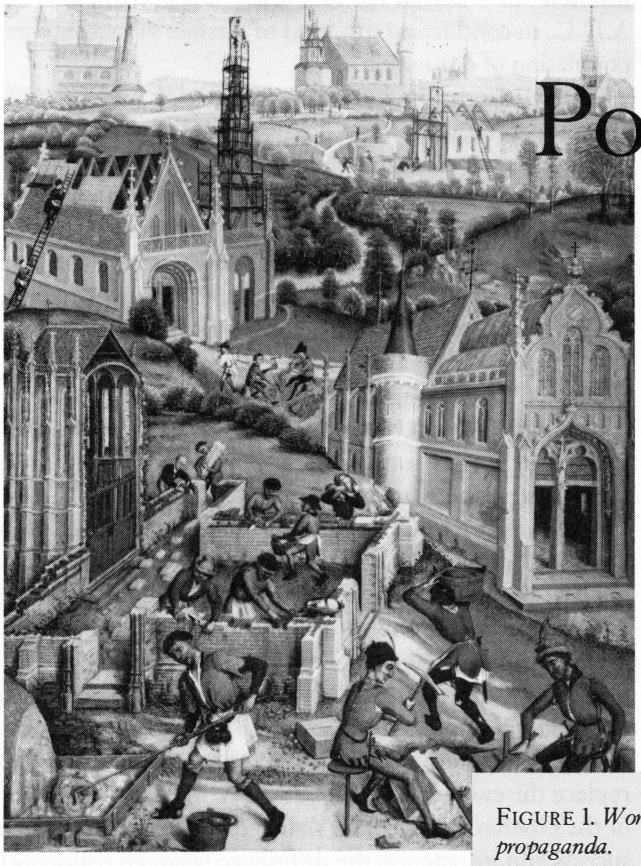


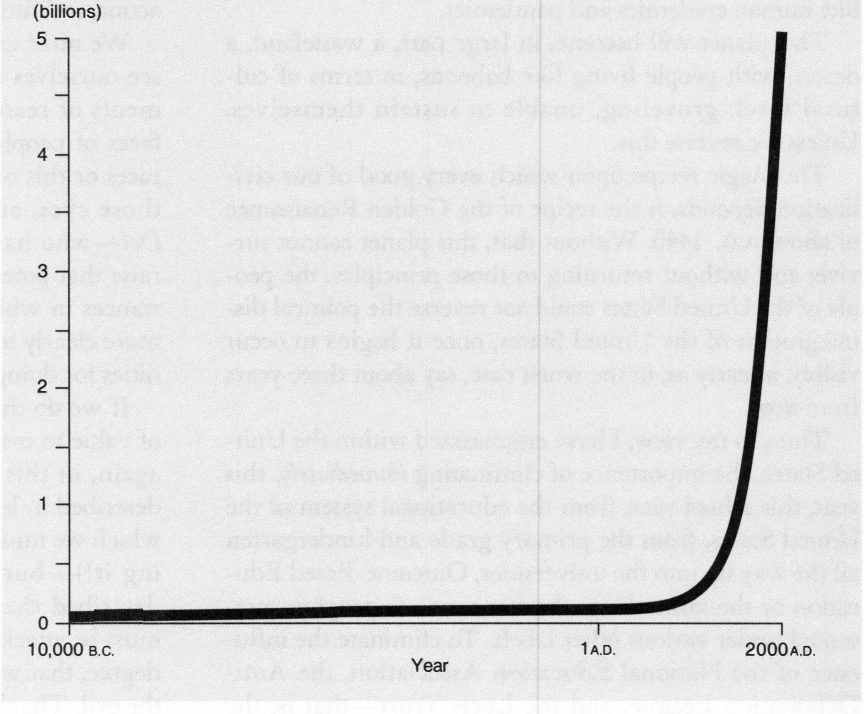
Bild-Archiv der Österreichischen Nationalbibliotheck, Wien

"Girart de Roussillon and his wife are building twelve abbeys," Manuscript Codex 2549, 164r, Nationalbibliothek, Vienna, Austria.

The most fundamental fact of the science of economics, is the history of the growth of the population of the human race, in numbers and power over nature. But it is almost always presented as shown in Figure 1, as if we have been a species of rabbits breeding according to a mathematical function, which is now rapidly approaching its limit.

This is a hoax, created visually by the absurd choice of scale, and made believable by constant propaganda about a "population bomb."

FIGURE 1. *World population growth as presented in fraudulent "population bomb" propaganda.*

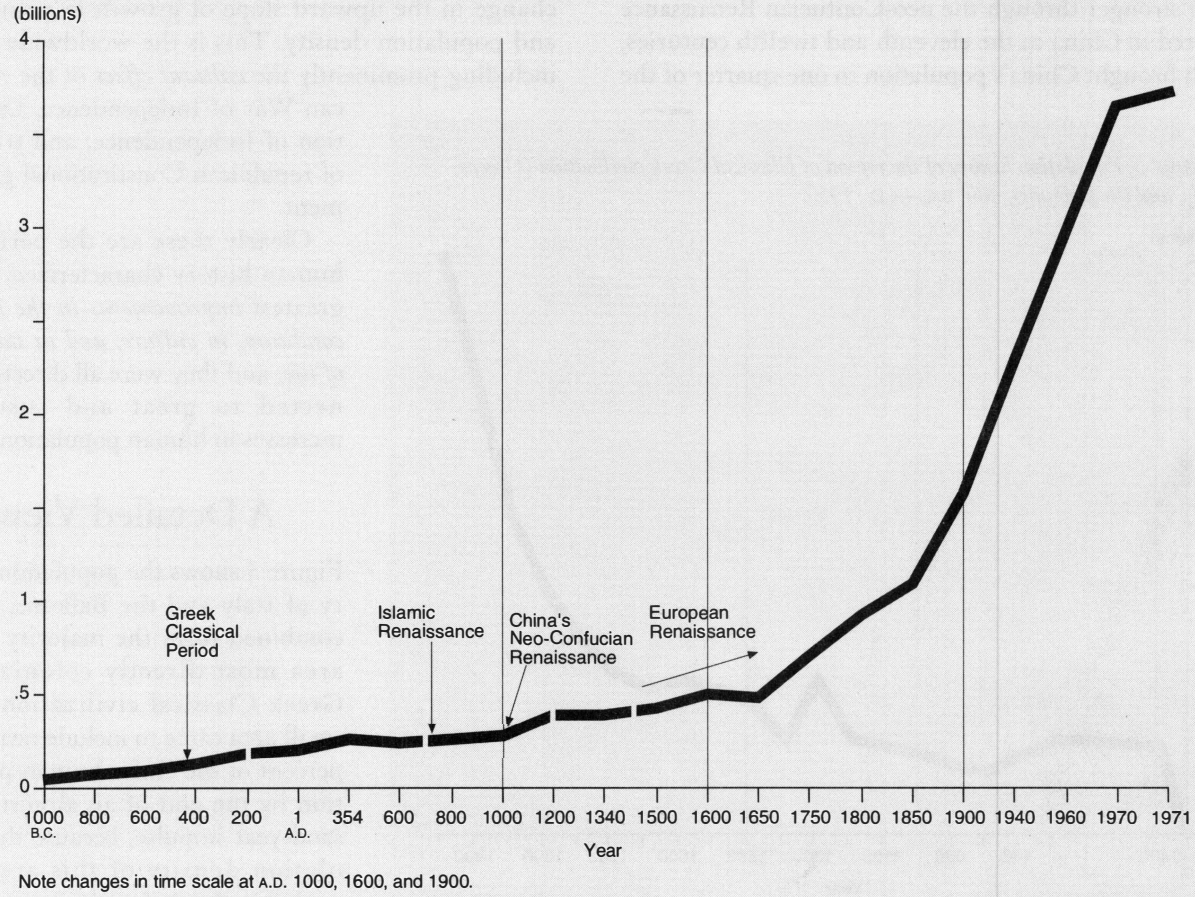


Political prisoner Paul Gallagher was prosecuted and convicted on bogus "securities fraud" charges with other associates of Lyndon LaRouche in frameup trials in the Commonwealth of Viriginia. He began serving a 34-year (!) sentence within two months of delivering this presentation.

Is Caused by Renaissances

The truth is shown in Figure 2: The actual growth of the population and population density of the human race, of which only the past 3,000 years is graphed here, is expressed by distinct impulses—one of which is clearly of a different quantity and quality than the preceeding impulses—surrounded by periods of stagnation or even decline which may last hundreds of years. But *because of these impulses* of sustained and rapid increase in population density, the general progress is upward, and the truly long-lasting, powerful and successful

FIGURE 2. *Actual world population growth, showing Renaissance impulses and periods of stagnation.*



Note changes in time scale at A.D. 1000, 1600, and 1900.

growth in human population and population density is shown by the last impulse. Upon these impulses, and above all upon the last one, depend the existence of 5.3 or 5.4 billion people alive today.

These impulses are the scientific renaissances of human knowledge, creating *both* growth in the quantity and density of population of the human species, *and* higher quality of the individual human being and his or her life—which are therefore not opposed but directly connected.

In the past 3,000 years, the first such impulse was the Greek Classical period, in part revival and in part advancement of the knowledge of the preceding Egyptian civilization. This is the origin of what we call the later Renaissance, by which we mean the revival of the Platonic scientific ideas and progress of this Greek Classical period. This is the Classical Age spanning from Homer, through the time of Solon of Athens, of Aeschylus, of Pythagoras; the Age upon which Socrates and Plato reflected.

The second impulse begins with the Islamic Renaissance starting in the eighth century A.D. It becomes much stronger through the neo-Confucian Renaissance centered in China in the eleventh and twelfth centuries, which brought China's population to one-quarter of the entire human race [SEE Michael O. Billington, "Toward the Ecumenical Unity of East and West: The Renaissances of Confucian China and Christian Europe," *Fidelio,* Vol. II, No. 2, Summer 1993]. It is a period in which human population growth was primarily in Asia and Africa. But at its end, it overlaps the first European period of building of great cathedrals and scientific improvements in agriculture.

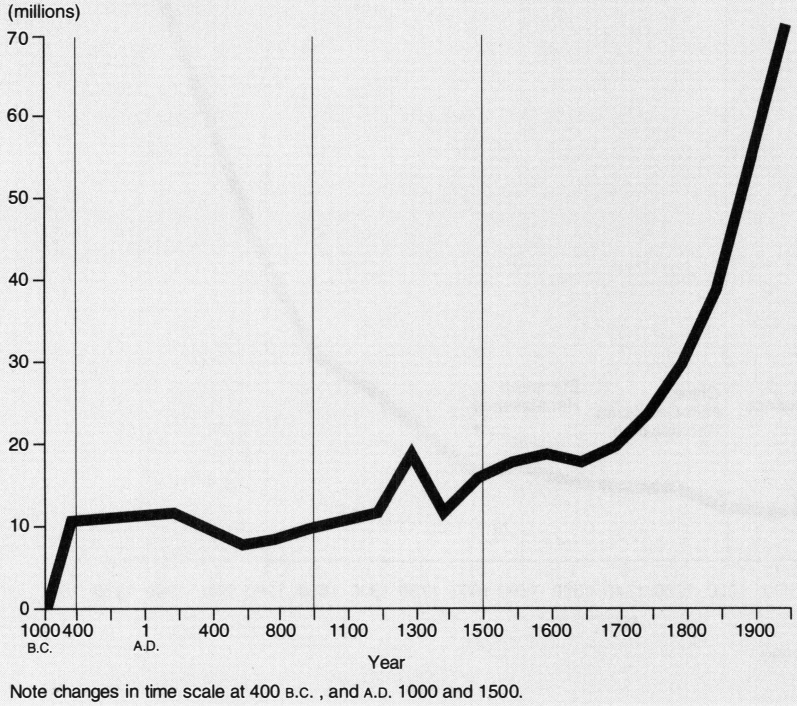
These renaissance impulses to population growth appear very gradual in Figure 2, owing to their comparison to the much larger, third impulse; but if you compare them to the periods in between—long centuries of stagnation or decline in human population—you see very definite and substantial impulses of growth.

The third impulse is the Golden Renaissance of Europe, beginning at the Council of Florence after the devastation of the Black Plague. Since then, in five-hundred-fifty years, the human population has grown nearly thirteen times greater.

And within this five-hundred-fifty years, there is a further upward impulse in the eighteenth century, and change in the upward slope of growth in population and population density. This is the worldwide effect, including prominently the *cultural effect* of the American War of Independence, Declaration of Independence, and triumph of republican Constitutional government.

Clearly these are the periods in human history characterized by the greatest *improvements in the human condition, in culture, and in standards of life;* and they were all directly connected to great and sustained increases in human population.

FIGURE 3. *Population history of the region of Classical Greek civilization (Greece, Italy, and the Balkans), 400* B.C.–A.D. *1950.*



Note changes in time scale at 400 B.C. , and A.D. 1000 and 1500.

A Detailed View

Figure 3 shows the population history of Italy and the Balkans, which combined form the majority of the area most directly colonized by Greek Classical civilization. This small area came to include nearly ten percent of the entire human population by the end of an almost thousand-year impulse, because the population density of this area had tripled in the six hundred years from 1000 B.C. to 400 B.C.—at that time

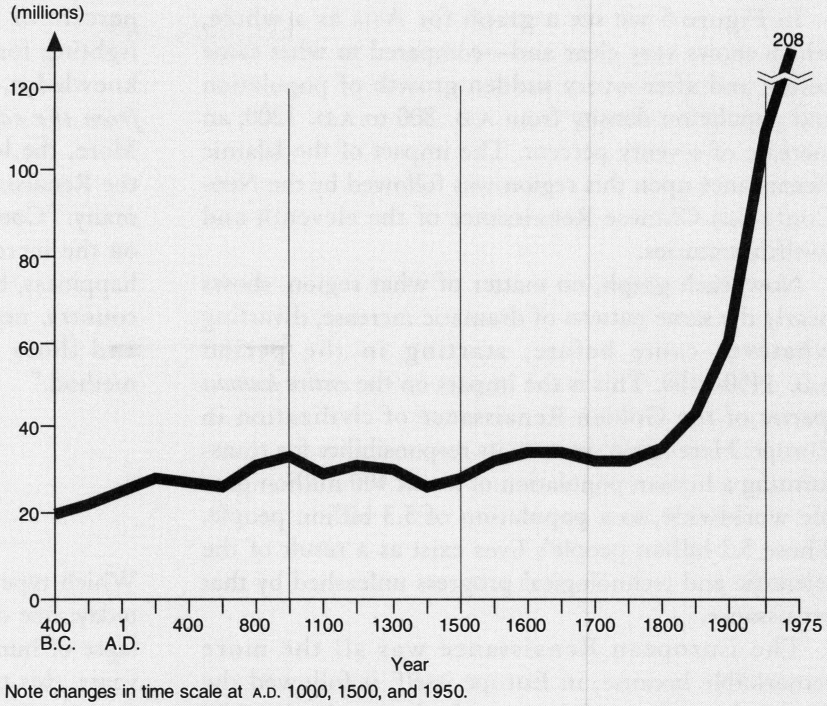
an extraordinary and completely unprecedented growth.

By 400 B.C., Classical Greece had achieved a population density of almost twenty-five people *per* square kilometer, and that is almost equal to the United States today, 2,500 years later. This density of human population was completely unique and unapproached by anywhere else at that time. This was a seafaring and *city-building* civilization; anyone who has read the history of Greece knows the absolutely extraordinary number of towns and cities which were built by colonization in this region of the world in a short time. Even Greek farmers lived in towns and cities, and went to their outlying fields each day, as many European farmers do today.

It is clear that this impulse was broken in 400 B.C., despite some continued growth, such that 1,600 years later—in A.D. 1200—the population and population density of this region had only just come back to the same level. What stopped this renaissance was slavery—helotry, as it was called in Greece—the spread of which caused the Peloponnesian Wars starting c.400 B.C., the onset of plague, and the collapse of the population density. The Greek Isles, which had established a new level of potential population density for the entire world, then collapsed and did not recover the same level of population for more than two thousand years.

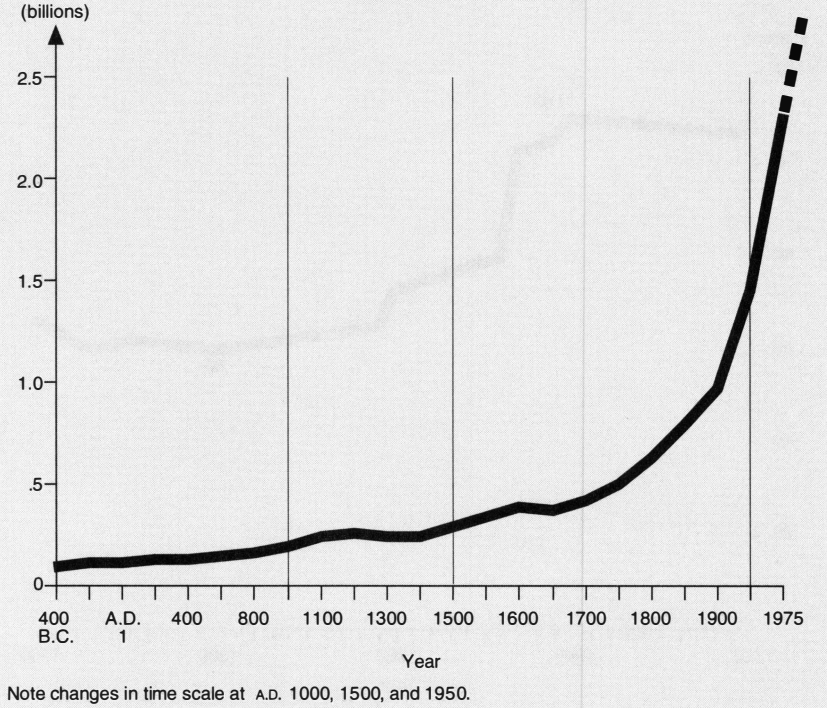
Figure 4 shows the impact of the Islamic Renaissance—which was the transmission belt into Europe for advances in the ancient sciences of mathematics and music—especially upon the area it affected most, the Middle East and North Africa. Again, this upward surge appears gradual compared to the power of the Golden Renaissance of Europe which followed it; yet the population

FIGURE 4. *Population history of the Middle East and North Africa (combined), showing the impact of the Islamic Renaissance, 400* B.C.–A.D. *1975.*



Note changes in time scale at A.D. 1000, 1500, and 1950.

FIGURE 5. *Population history of Asia, showing the impact of the Islamic and Neo-Confucian Renaissances, 400* B.C.–A.D. *1975.*



Note changes in time scale at A.D. 1000, 1500, and 1950.

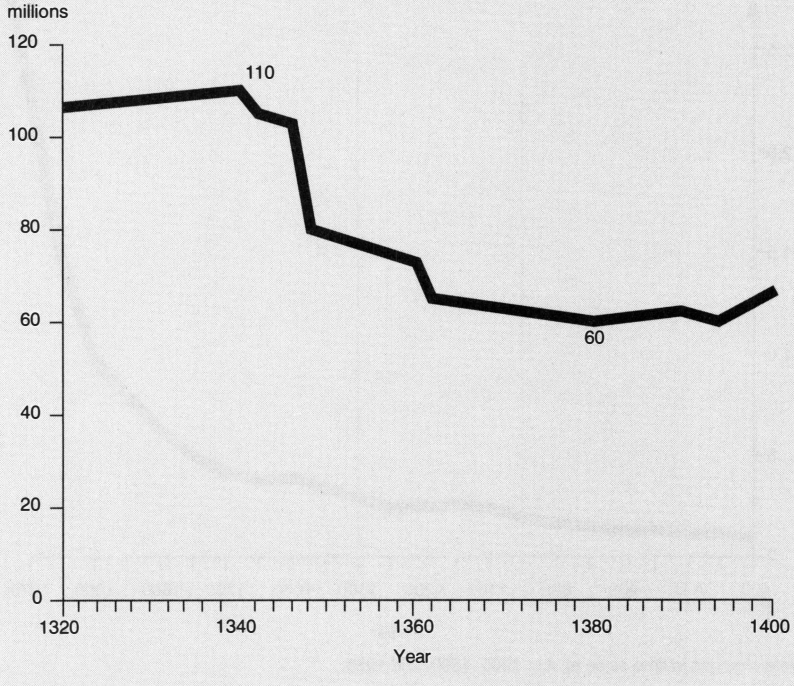
and population density of this region nearly doubled, where both before and after, there was stagnation or decline.

In Figure 5 we see a graph for Asia as a whole, which shows very clear and—compared to what came before and after—very sudden growth of population and population density from A.D. 800 to A.D. 1200, an increase of seventy percent. The impact of the Islamic Renaissance upon this region was followed by the Neo-Confucian Chinese Renaissance of the eleventh and twelfth centuries.

Now, each graph, no matter of what region, shows nearly the same pattern of dramatic increase, dwarfing whatever came before, starting in the period A.D. 1450-1500. This is the impact on the *entire human species* of the Golden Renaissance of civilization in Europe. Here again, you see its responsibility for transforming a human population of about 400 million people worldwide, to a population of 5.3 billion people. Those 5.3 billion people's lives exist as a result of the scientific and technological progress unleashed by that renaissance.

The European Renaissance was all the more remarkable because, in Europe itself, it followed the devastating effects of the spread of usury in the thirteenth and fourteenth centuries (SEE Figure 6)——collapse of banks, destruction of cities, massive spread of plague, and collapse of the population itself by fifty percent or more. Its leaders understood they were fighting for a new progress of Classical culture and knowledge, *in order to bring the human population back from the edge of extinction*. For example, Thomas More, the leader of the networks of Erasmus and of the Renaissance in England, wrote to a friend in Germany: "Congratulations most of all, my dear Mullein, on the increase once again of your family. Your own happiness, but even more the work of revival of your country, need before all the increase of your people and those young educated according to the best method."

FIGURE 6. *Collapse of European population in the fourteenth century.*



The Coming 'Depopulation Bomb'

Which type of period of human history are we facing today: one of increasing growth, or of decline and collapse of human population? Over the past twenty-five years, this tremendous scientific and cultural impulse for growth of the human population has been reversed; today, Europe itself is pointing the way toward a global *collapse and decline of population* in the twenty-first century. This will happen unless the paradigm shift to cultural pessimism and anti-humanism is reversed; unless the ongoing worldwide economic collapse and spread of war are reversed.

Here are the facts, from the United Nations' own global population conference held in Geneva in May—and also from the statistics and reports of many nations.

Consider that, during the 1950's, the general forecast of human population called for 8 billion human beings to be alive by the year 2000. (This 1950's view came not only from the U.N., but from many private and government statistical agencies with no interest in scaring anyone about "overpopulation.") Today, with only a few years to go in the century, the actual population is estimated to be only 5.4 billion. This

low figure would have shocked those who believed the forecasts of the 1950's.

As of today, almost all the countries of Europe—West, East, and Russian—have either suffered absolute declines in their populations since the 1970's (most of Western Europe); or are undergoing such declines now (Russia, Ukraine, the Baltics); or are about to enter upon population decline, according to official statistics (Georgia, Belarus, etc.). Virtually all the countries of this large area—fifteen percent of the human race—have fertility rates *far below the generation-to-generation zero-growth replacement level.* Many of them already have death rates higher than birth rates. "The collapse in fertility corresponds to nothing known in peacetime," says the U.N. It has been going on since the middle 1960's, and without an immediate increase in fertility of nearly twenty-five percent throughout Europe and the former Soviet Union, population levels will fall more and more rapidly decade by decade—even if there were to be "peace."

But, there are now six wars raging simultaneously in Eurasia, and several "population wars" in Africa, Cambodia, and elsewhere. In the war in the Balkans alone, 300,000 people have died in two years. And not only do these wars bring casualties; they collapse the birthrates in the affected countries as well.

This collapse in fertility in the industrial countries long preceded the current worldwide economic depression; it derived from the spread of cultural pessimism ("counterculture"), and from labor policies which fostered the destruction of the nuclear family.

Japan's population will be falling in absolute numbers within about a decade; China's fertility rate is now well below the generational zero-growth rate. While in the Third World as a whole, human fertility has fallen by more than one-third in a little over twenty years.

The U.N.'s official population agency can be proven to be *overestimating* the population of some of the largest Third World countries by fifteen to twenty percent. For example, the Nigerian government census just counted 20 million fewer Nigerians than are *claimed* by the U.N., which nonetheless refuses to change its figure. A similar gross overcounting can be shown for Brazil, and for smaller countries.

The percentage of children eighteen years old and under in the world's population, which was nearly forty percent at the end of the 1960's, has now fallen to thirty-two percent. The shrinking of the youthful portion of industrial countries' populations is already greater than that caused by the drop in births as a result of two World Wars. In most nations of the world, the percentage of elderly people has expanded greatly; the exception is sub-Saharan Africa, and there only because life-expectancy is not much over fifty years.

Meanwhile, throughout Africa and now Southeast Asia, AIDS is decimating *young adults of childbearing age and their children,* laying the basis for further future or even current drops in population.

The Immediate Future

Because of the aging of populations, "the Western countries should expect a steady rise in their death rates" (as stated by the U.N. itself), outstripping their birth rates and causing their populations to shrink still more. This will reverse centuries of declining death rates. In Italy today, there are more retired pensioners than employed workers, and a fertility rate only about half of zero-growth.

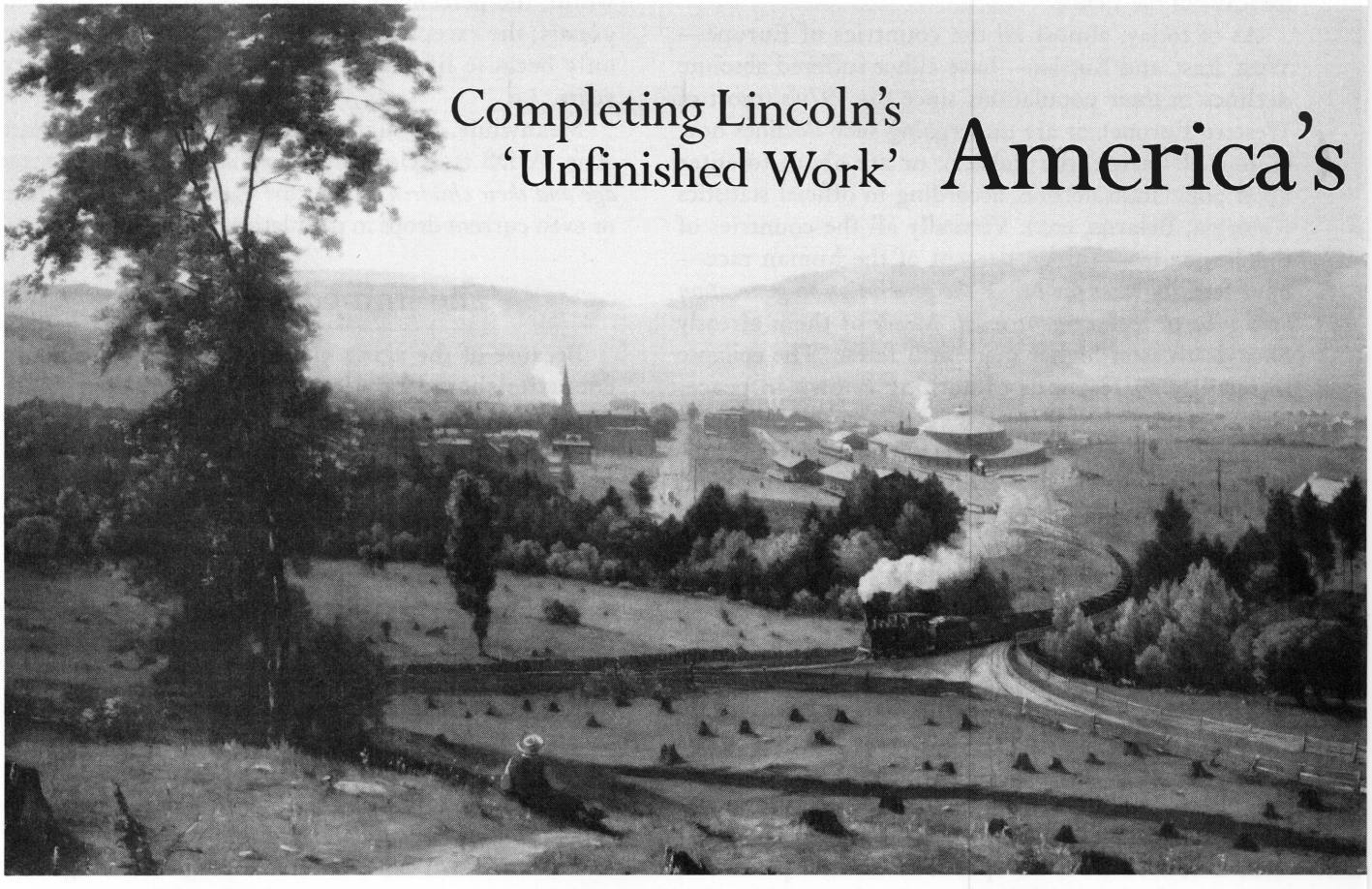
Because sterilization "is the most widely used method of birth control in the world as a whole" (says Johns Hopkins University, which ought to know), a significant part of the worldwide decline in fertility has become permanent and irreversible.

The United Nations population agencies are in fact aware of the possible coming "depopulation bomb," but *they regard population decline as a favorable development* and claim it will cause economic progress! Long-term population forecasts by the U.N. Fund for Population Activities show, in fact, a "low" scenario in which the human population *falls* during the course of the next century; and that scenario is the most credible outcome of what has already happened to world population potential.

The real problem is that the U.N. clearly regards this scenario as the desired objective. The latest report of its Population Division says: "The perception that slower population growth, and even no growth, is associated with faster development, is not now seriously challenged. Between 1950 and 1990, the industrialized countries almost tripled their income *per* head. On the other hand, developing countries that have been successful economically have also made the most determined efforts to slow population growth."

But, as we have seen, the entirety of human history proves the opposite. Rather than being irreconcilable enemies, population growth and human development have always been inextricably linked. It remains for a new Renaissance of our making to demonstrate this once again.

Completing Lincoln's 'Unfinished Work' America's



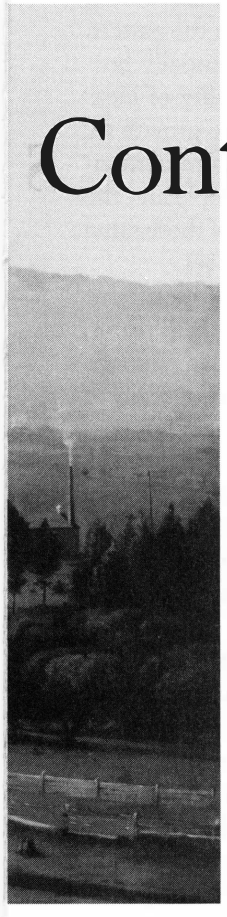
One hundred and thirty years ago, come this November 19, Abraham Lincoln stepped forward on the battleground at Gettysburg to deliver that speech which still echoes around the world. To many it is known by heart, and kept there. "The world will little note, nor long remember what we say here, but it can never forget what they did here. It is for us the living rather to be dedicated here to the unfinished work which they who fought here have thus far so nobly advanced. It is rather for us to be here dedicated to the great task remaining before us—that from these honored dead we take increased devotion—that we here highly resolve that these dead shall not have died in vain—that this nation, under God, shall have a new birth of freedom—and that government, of the people, by the people, for the people, shall not perish from the earth."

Gettysburg was the turning point in the war to preserve the Union. Where did this nation stand at this moment of its new birth? What was the "unfinished work" of which Lincoln spoke? The answer is neither well-known today, nor found in history books. Poised to take over the world, on behalf of the ideas for which, not one, but three wars had been fought on these shores, by successor generations in that brief span of eighty years. Ideas, which—also not taught in schools, nor found in the history books—are the direct outcome of the greatest flowering of creativity in human history, the European Golden Renaissance.

Lincoln's America had become the world's pre-eminent military power, to be emulated by military strategists and planners around the world. This, thanks to the skills of Generals Grant and Sherman and still others on land, and also by sea. It had become, in terms of potential, the world's pre-eminent economic power, and so-called "American methods," the model for any country on the path of development. Its alliance with Czar Alexander Romanov, and the international support for the Union's cause against King Cotton and his chattel slaves, was potentially decisive. In the months following that November speech, the world was in our grasp. And then, by the spring of 1865, Lincoln was dead at the hands of the assassin. The world, in a real sense, has not been the same since.

Contribution to the Golden Renaissance

by Christopher White



George Inness, "The Lackawanna Valley," 1855 (detail).

What does all this have to do with the subject of population and the Renaissance? The answer is, absolutely everything.

The pre-eminent potential of the United States would not have been achieved without the pre-eminence of the ideas on which it was created. Specifically, the proposition that all men are created equal, endowed by their Creator with certain inalienable rights. Those propositions, whether the Founding Fathers talked about it or not, flow from the guiding conceptions which organized Europe into the Renaissance. Conceptions associated with Christianity's *filioque* principle: man in the living image of God. A Christian conception, not in the dress of the priest or theologian, but planted in the idea and institutions of representative self-government which took root here and spread from the Massachusetts Bay Colony.

The conception which is still summarily expressed in the Constitution's Preamble: "in order to form a more perfect union . . . and secure the blessings of liberty to ourselves *and our posterity,* we do ordain and establish this Constitution."

What other nation acted to secure the rights of generations to come in its founding law? Rights to seek perfection for their unborn. Anyone who has seen the Florentine orphanage designed by Brunelleschi, known as the Hospital of the Innocents—a palace fit for the most splendid of kings—or Raphael's series of Madonnas, each with its chubby, all too human, baby boy, knows that here we have the conception which is at the core of everything the European Renaissance stood for. And, that it is concerned with nothing other than perfecting the moral condition of mankind, that he might thereby continuously improve the apparent conditions of his own existence, in accord with the Creator's fundamental law.

This is the unfinished work of which Lincoln spoke.

It is the work which is reflected in the graph shown in Figure 1, which presents estimated values of world population growth. We are concerned with two features of this growth, namely, changes which make their appearance in fifteenth-century Renaissance Europe, and again around the 1780's, the time of the American Revolution and Germany's Weimar Classic. As we shall see, what those changes reflect is that the political experiment brought forth on these shores, from Europe, had found a way to increase the production of useful wealth so as to sustain increasing rates of population growth. The means, improvements in the productivity of labor—what Hamilton called the substitution of "artificial labor" for human or animal muscle power. The method was the application of the Renaissance principle of the primacy of human creativity.

The case to be presented is not one you will find taught any longer in schools. Not these days, when not only is actual history suppressed, but laws are changed to outlaw teaching of such documents as the Declaration of Independance and the Constitution.

What are the changes referred to? First, in the world population chart (SEE Figure 1), note that if our species took one thousand years to increase from about 250 million souls, world-wide, the same as the U.S. population of today, to 500 million, it took only another three hundred or so years to increase to one billion, and another two hundred to increase to around four billion. Someone is going to say, "ah, hah! Fallacy of *post hoc, ergo propter hoc:* just because it happened *after,* doesn't mean it happened *because of*"!

Leave that for the moment. Figure 2 more or less appears to show that the effect of the increasing rate of advance was general, and not specific: all parts of the world appear to have benefitted proportionately.

Figure 3 clarifies that, however. We can see two general forms among the data: first, a cyclical pattern, ups and downs, relative to the increase of world population as a whole, which can then be contrasted with a second, differing pattern which prevailed in Europe from the fifteen century until the beginning of this present one, and is reflected in the growth patterns of the the U.S., and the category marked "other" (which includes Ibero-America, that other offspring of Europe's Renaissance).

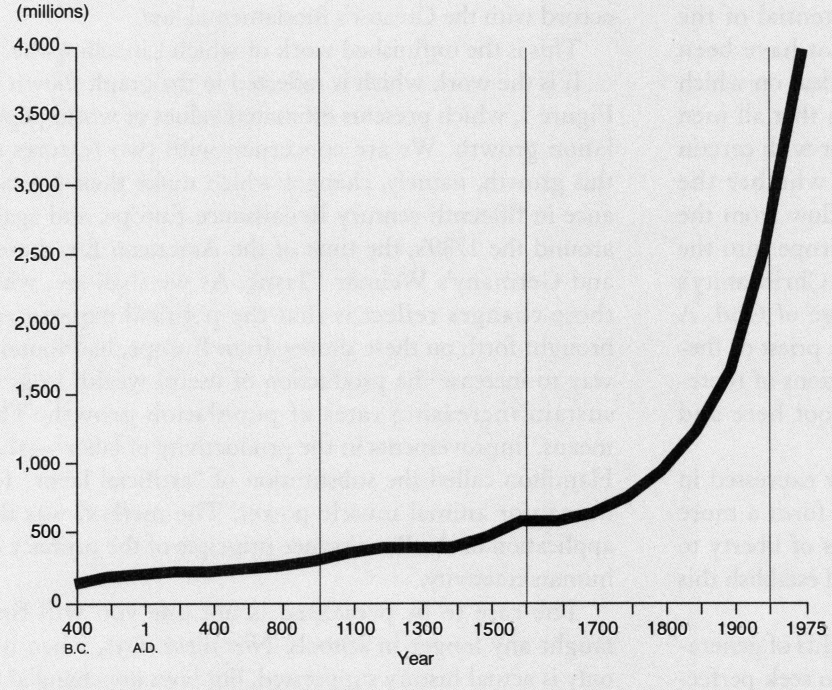
What we are seeing, on the scale of human history, is the superiority of Golden Renaissance-based political culture, and the verification of the political form of the *filioque,* that "all men are created equal," since the lives of all members of each successor generation have been transformed by creativity at work. Thus was the pattern of imperial cycles of growth and decay potentially broken for all mankind for all time. If the quality of ideas which permit one nation to secure its future growth by creating wealth at a rate adequate to that, are demonstrated through their power to transform people and the world, then no nation ought to be deprived of those same ideas. This, again, is mankind's unfinished work.

The giants of the Renaissance placed the creative potentials of the human mind, the image of the Creator, at the center. The founders of this Republic, institutionalized such conceptions in the form of their notion of "citizens' self-government," together with its corollary, free labor, against empire and its slaves.

It is these ideas, not the so-called industrial revolution, machine age, and so forth, not the daily practice which becomes custom, attenuates, and degenerates into its opposite, mere words in the service of egoism and chauvinism, which account for the changes.

Man, individual man, mastering through science the ideas which permit him to change the way his species exists, and out of those changes realize the potential for change again. Man as creative intellect, not beast of repetitive labor, contributing during his individual lifetime, to improving the lifetimes of generations to come, and thereby validating all those who went before. Such is true liberty, the labor of the free, not the disgusting hedonism that masquerades as freedom today.

FIGURE 1. *World population, 400* B.C.–A.D. *1975.*



Note changes in time scale at A.D.1000. 1600, and 1950.

The Development of America

Let us now show, using some examples from U.S. history, how the ideas which set such a priceless value on the life of the individual human being, in the individual's potential contribution to the uplifting of all mankind, do

The graphs accompanying this article are adapted from a slide show entitled "Two Hundred Years of U.S. Economic History," which is available from EIR News Service, Inc. for $35. To order, call John Hoefle at (703)777-9451.

FIGURE 2. *World population, 400* B.C.–A.D. *1975.*

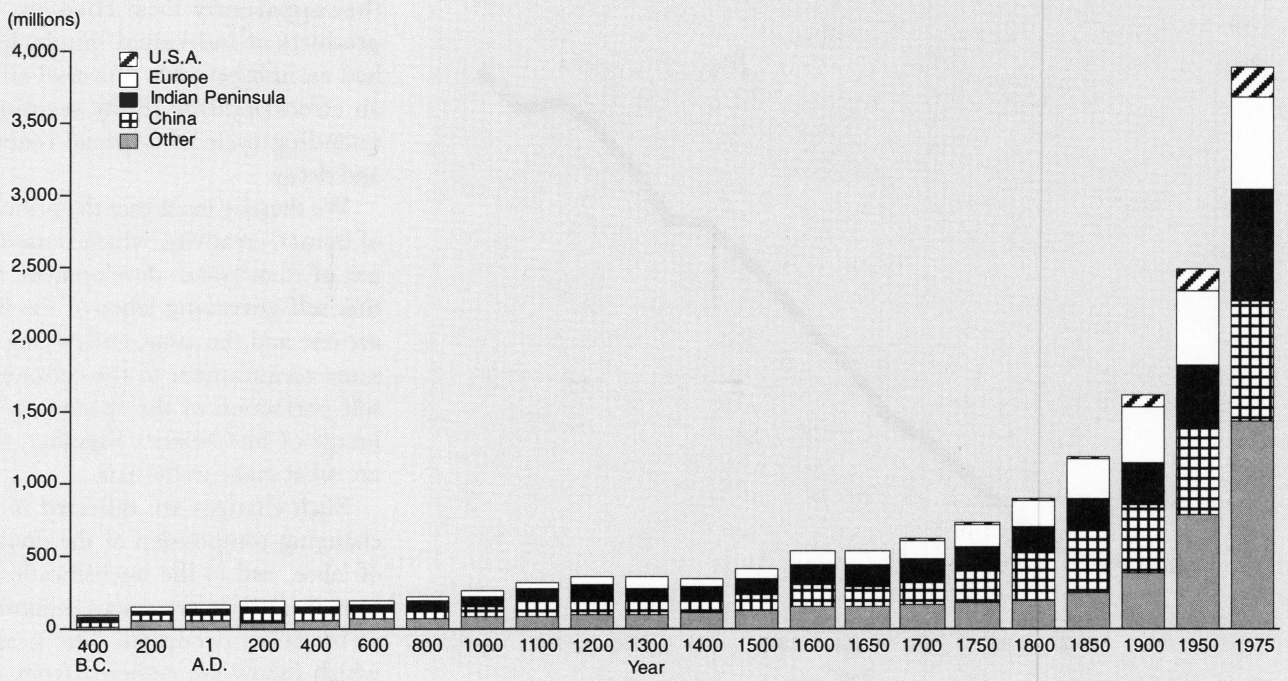
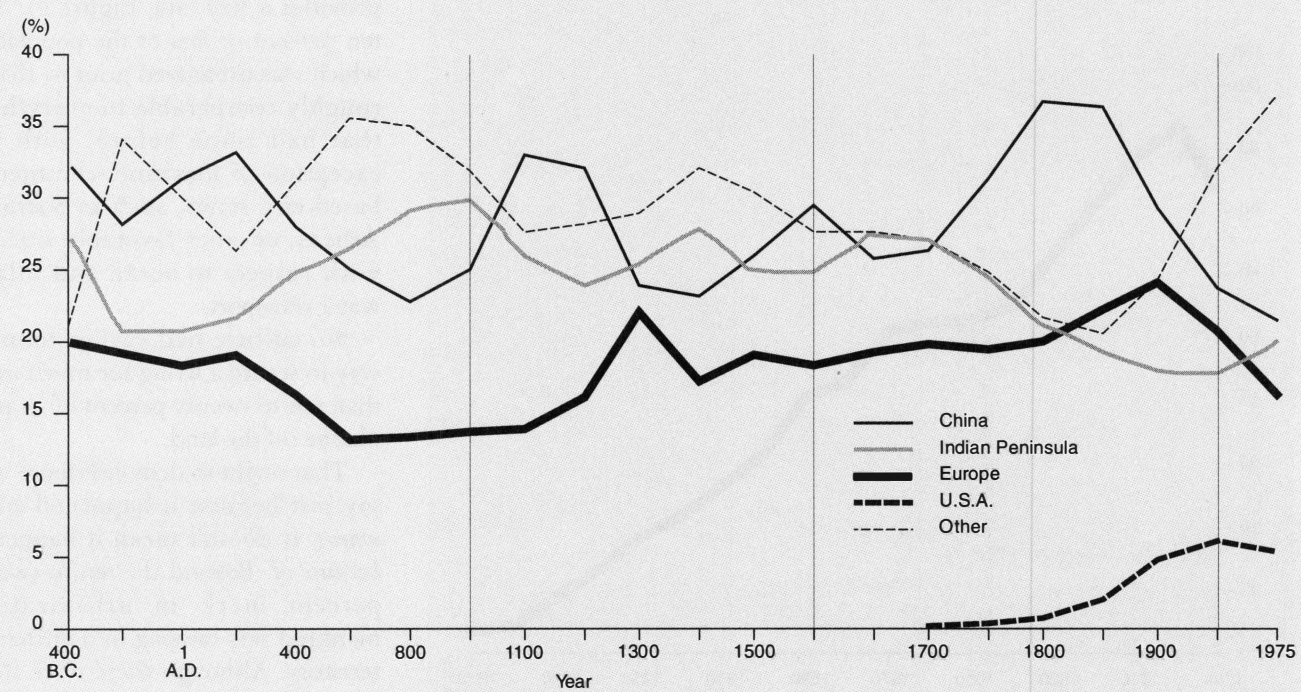


FIGURE 3. *Regions as a percentage of world population, 400* B.C.–A.D. *1975.*



Note changes in time scale at A.D. 1000, 1600, and 1950.

FIGURE 4. *Urban population as a percentage of total U.S. population, 1790–1990.*

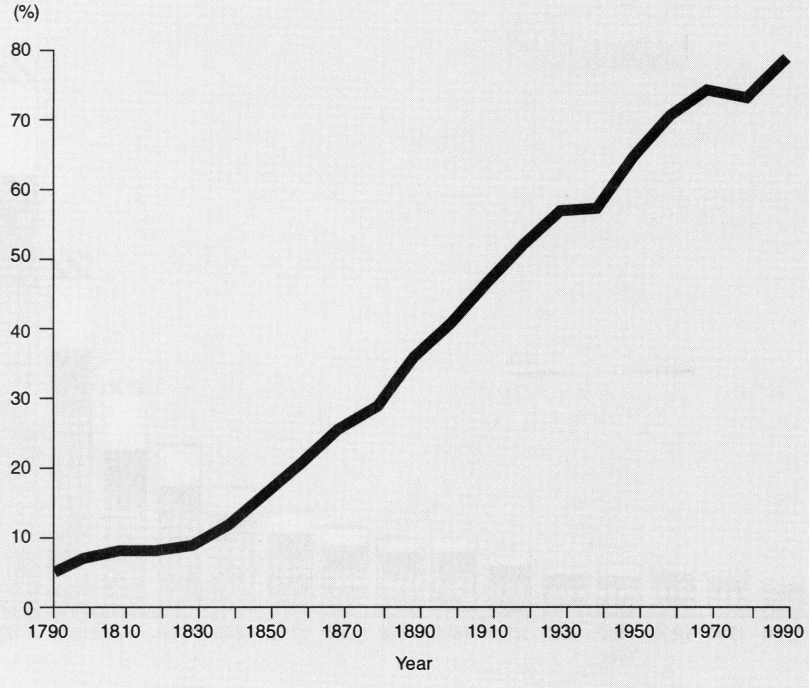
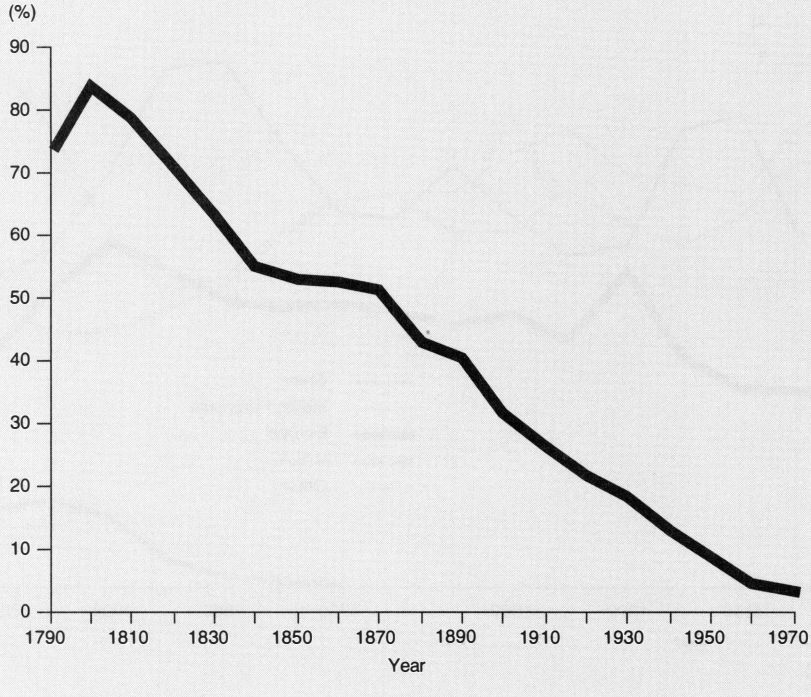


FIGURE 5. *Agricultural labor as a percentage of total U.S. labor force, 1800–1970.*



indeed result in the changes which make improved continued human existence possible, universally, such that apparently local changes, the products of individual minds, have had an indispensable universal effect, an effect opposite to the seemingly unending cycle of imperial renewal and decay.

We thereby insist that the principle of human creativity, which is the subject of Renaissance development, and that self-governing labor of the free, are one and the same, embodying the same commitment to the continuing self-perfection of the species, in the image of its Creator. Together, they are what make us human.

Such changes are reflected in the changing composition of the division of labor, and in the intensification of human activity *per* square kilometer of territory occupied. The graphs which follow are gathered from successive editions of the U.S. Census of Population and Census of Manufactures, since the first such Census was conducted in 1791.

The growth of urban population provides a key (SEE Figure 4). The ten percent or less of the population which was urbanized prior to 1850 is roughly comparable to everything that had come before, with the exception of maritime-commerce-based city states, such as Socrates' Athens, or cities favorably situated with respect to ocean and inland water transport.

No culture had earlier found a way to secure a living for much more than ten to twenty percent of its population off the land.

That ought to demolish those who say just because it happened *afterwards,* it doesn't mean it happened *because of.* Beyond the ten to twenty percent mark in urbanization, mankind was moving into uncharted territory. Although there were those who, like Columbus, knew where they were going.

Furthermore, if no previous culture had found a way to support more than ten to twenty percent of its population living away from the land, neither had any society found a way to ensure that wealth could be created sufficient to guarantee its own future growth. For example, to increase the productivity of agriculture, and thereby food production, faster than the rate of population growth, to make a more rapid growth of population possible.

How to support a growing urban population as a percentage of a growing total population? Only through improving agricultural productivity, through reducing that portion of the total labor force required to produce food for itself and everyone else. (SEE Figure 5) Compare Figures 4 and 5: it is not until agricultural employment reaches fifty percent and lower that urban population begins to take off. The increase from about fifteen to thirty percent urbanized is accomplished with fifty percent of the labor force still working the land. The growth of the city population above thirty percent is accompanied by an equally rapid decline in agricultural employment.

It has been, over two hundred years, a roughly hundred-fold increase in the productive power of agricultural labor, relative to everything that had gone before. But these were only humans: if they could do it, why shouldn't everyone else? And they had nothing, compared to the means we now dispose of. But they did use their minds.

Concomitantly, we find a thirty-five-fold reduction in the land area required to support each household (SEE Figure 6). Mark again how the reductions parallel the increase in urbanized population, and the reduction in agricultural labor. (The initial increase, for the curious, is the effect of the Louisiana Purchase.)

This is not the same as crop area

FIGURE 6. *U.S. land area* per *household, 1800–1990.*

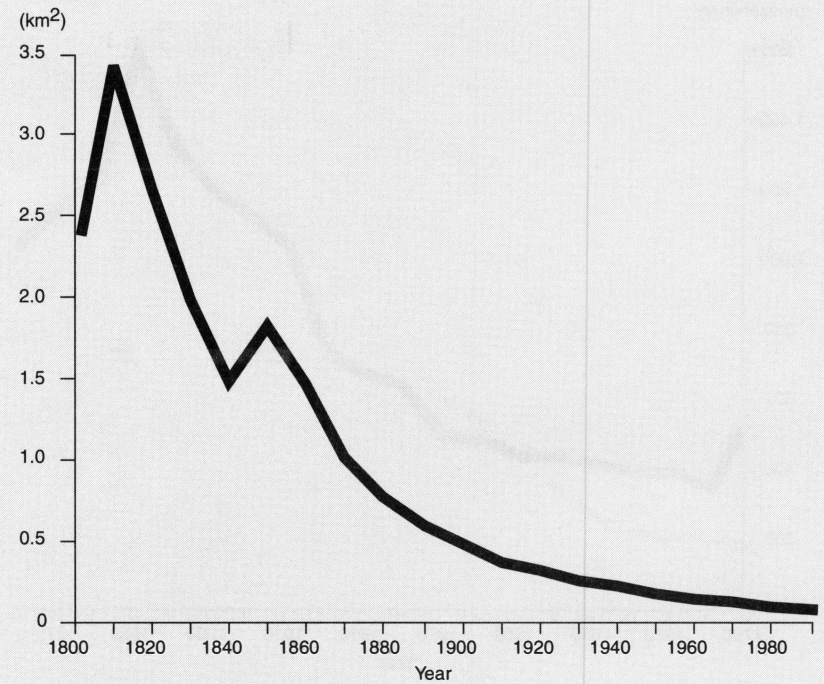


FIGURE 7. *U.S. crop land* per *household, 1800–1990.*

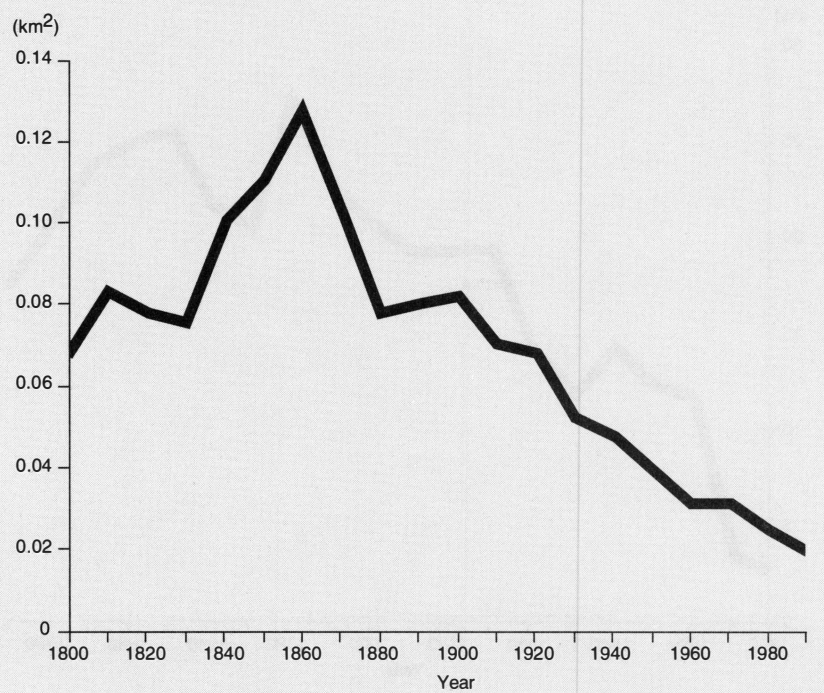


FIGURE 8. *U.S. urban households* per *urban area, 1790–1980.*

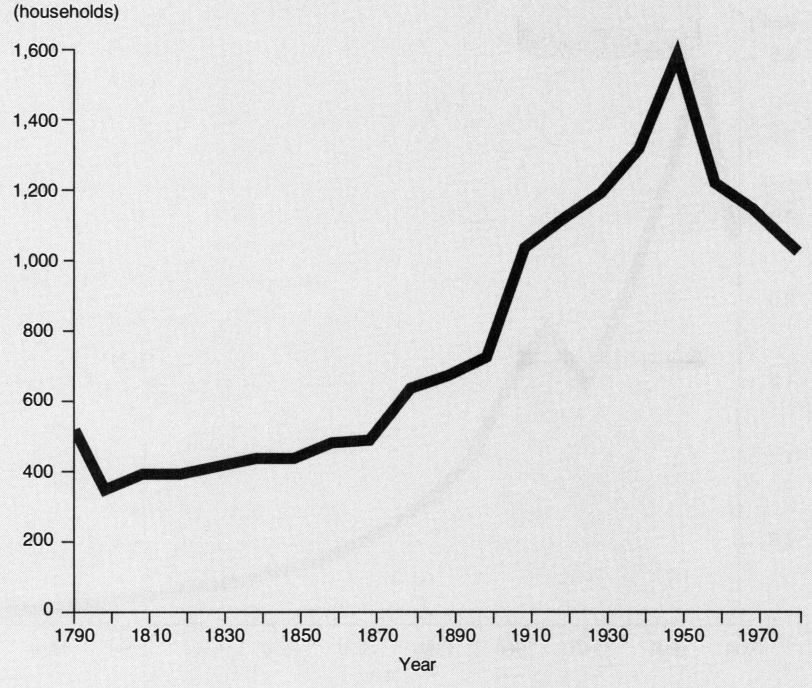


FIGURE 9. *Manufacturing labor force as a percentage of total U.S. labor force, 1800–1990.*

employed, which first increases, nearly doubles, as the wilderness is brought into cultivation to provide the necessities of life for more people, and then declines, as agricultural productivity increases outpace population growth (SEE Figure 7). As the growth of urban population is related to the increasing productive power of farm workers, so is the increasing intensity of activity in urban areas related to the decline in land required *per* household. This is reflected in Figure 8, urban households *per* unit urban area.

But now neither farm labor, nor any other kind of labor, can any longer be equated with the dumb repetitive behavior of the ox. With pride did Judge Jesse Buell write in the *Farmer's Companion* of 1839, "a farm may now be worked with half the expense of labor that it was wont to be worked with forty years ago, and may be better worked withal." The 1860 Census documented another further fifty percent reduction in labor costs through the introduction of machinery, and showed how improvements in each farm operation contributed to the whole. For example, throughout human history, the grain harvest had been brought in with scythe and rake. One man cuts one acre *per* day, that's how it was. It is shown on the tomb paintings of Pharaonic Egypt; it is still in use. In 1851, a U.S. design won the reaper competition at the London World's Fair. It harvested one acre in 22 minutes, against 66 minutes for a British design, and 72 for an Algerian one. By 1880, three to four men working in the Dakotas could produce, process, and transport enough flour to feed a thousand people for a year.

The benefits of city life ought to be obvious. Freed from the land, man's potential to improve his life is vastly improved. The head of the Census Bureau before the war for the Union put it this way: "The proportion

between the rural and town population of a country is an important fact in its interior economy and condition. It determines, in a great degree its capacity for manufactures, the extent of its commerce and the amount of its wealth. The growth of cities commonly marks the progress of intelligence and the arts, measures the sum of social enjoyment, and always implies increased mental activity, which is sometimes healthy and useful, sometimes distempered and pernicious."

Freed from the harsh necessity of agricultural labor, man can take up other pursuits in the path of improvement. Figures 9 and 10 indicate the growth of employment in manufacturing as a percentage of the labor force, and show the growth of principal categories of economic activity in terms of numbers of workers *per* household.

These changes reflect an ordered process of application of the powers of the human mind to transform the conditions of man's existence in an equally ordered way. Advances in scientific knowledge, and the technological applications made possible by advances in science provide the ordering principle.

The succession in this case—from water and animal power, to the heat-powered steam engine, and then the mastering of the power of electricity, to augment through brain power the muscle power of human labor—was the transmission belt by which the ideas of the Renaissance were conveyed, through the work of the institutions of citizen's self-government, into increasing the potential of all mankind to advance in the same kind of way, if not precisely the same way.

These days we tend to look at this as a function of the growth of energy throughput, or more exactly, of the use of *heat,* since this is what they are looking at (SEE Figure 11). This, because of the idiotic conservers of energy, who insist that resources, human activity and so on, are all finite, limited in the same way these graphs are limited by their *x* and *y* axes. They ignore creativity's ordering of the kind of change which *changes the axes* of such graphs.

So we see the succession of heat sources employed. From wood fuel, through anthracite and bituminous coal, into the age of oil and electricity. Not such a dramatic increase, more or less a doubling, as we saw the increase in agricultural productivity to have been, or the decline in land required *per* household, is it? But it doesn't tell the story, this measure of *heat,* because by improving technology, we get more out of less (SEE Figure 12, "Horsepower," which is a measure of the work output of the fuel consumed as heat). As we saw, within each fuel mode consumption remains pretty flat. But we get more work out of each unit of fuel employed: from around ten pounds of coal *per* horsepower of output in the aftermath of the Civil War, to around five pounds at the turn of the

FIGURE 10. *U.S. workers* per *household by major division, 1800–1990.*

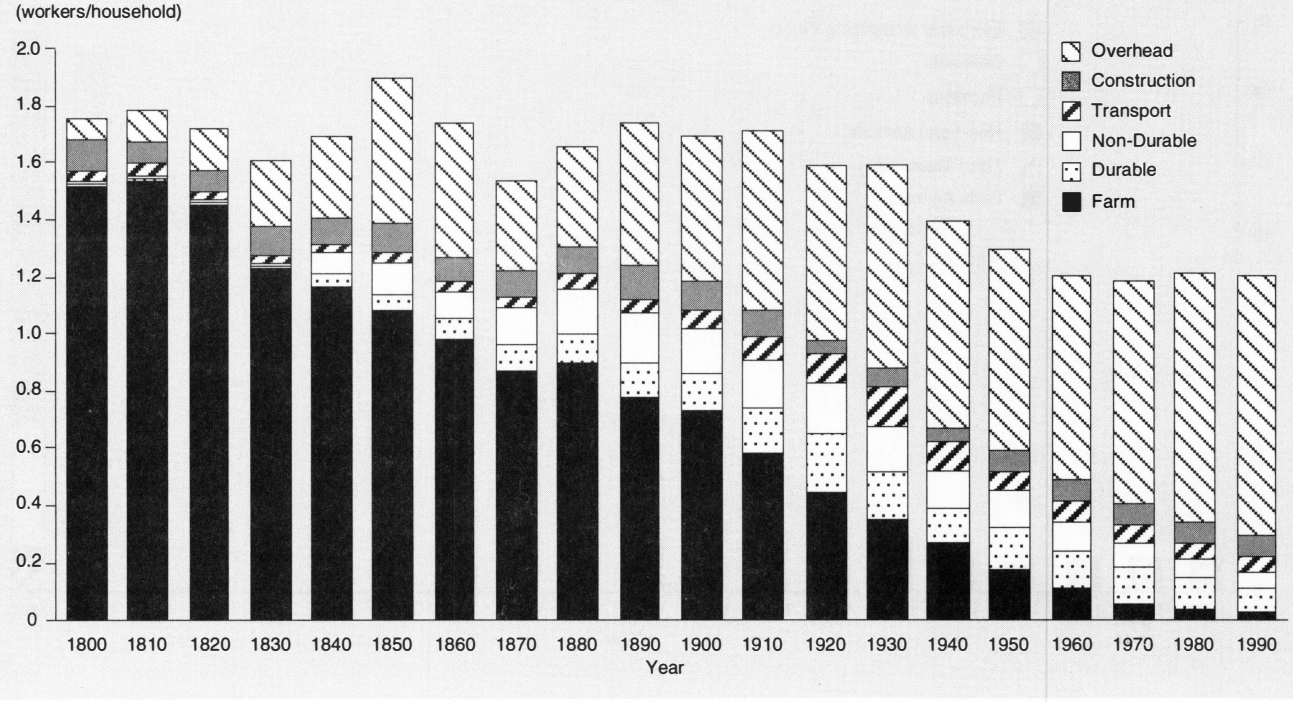


FIGURE 11. *U.S. energy sources in trillion BTU* per *household, 1800–1990.*

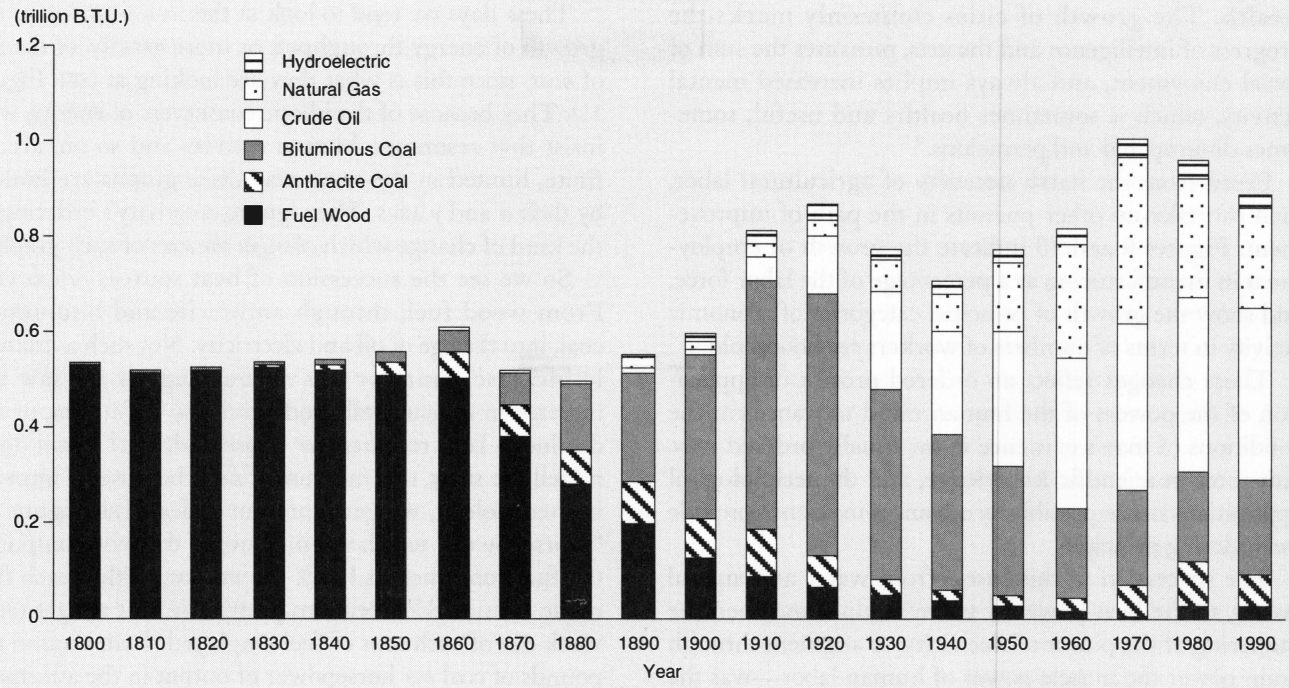
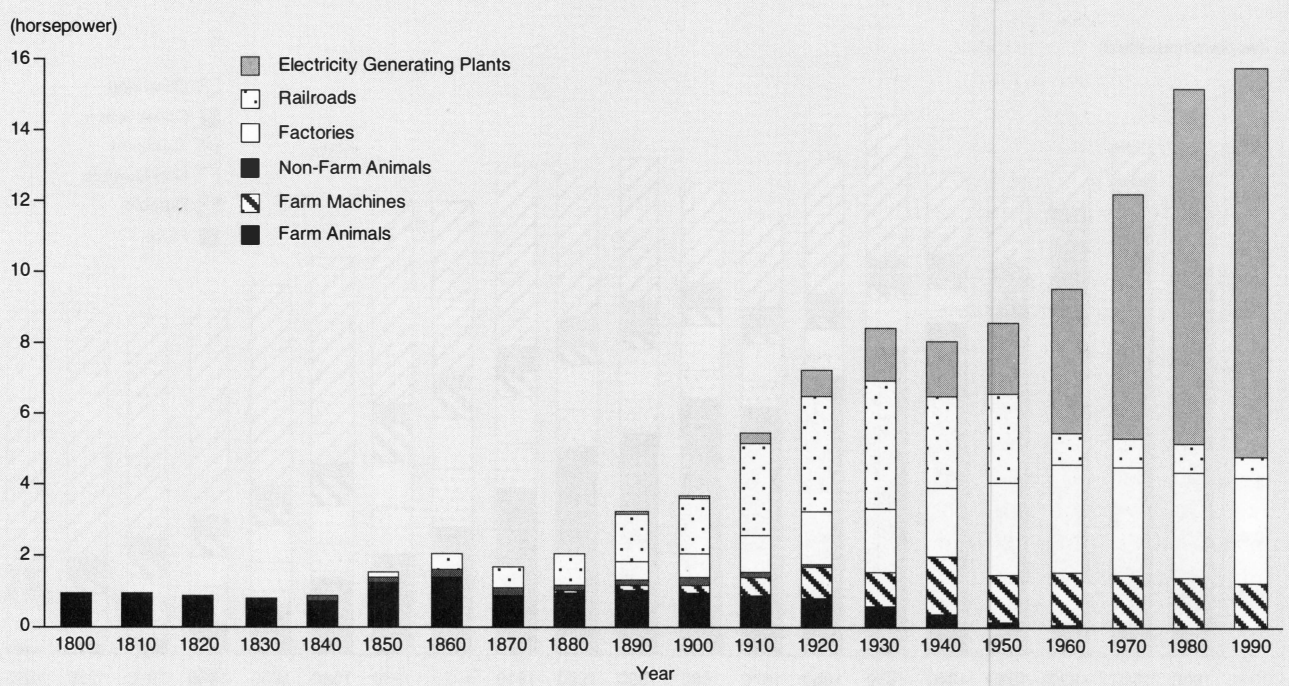


FIGURE 12. *Total U.S. horsepower applied,* per *household, 1800–1990.*



century, down to less than a pound before World War II.

Or, according to nineteenth-century engineers, a more than fifty-fold increase in the power output of the engine over the course of the century, combined with a more than four-fold improvement in its efficiency in burning fuel, combine here to produce a two-hundred-fold improvement in power output *per* unit fuel consumed. This is twice the improvement in agricultural productivity over this same period.

How does the development of artificial labor, machine power, fit into changing the relationship between countryside and city so profoundly? The answer used to be obvious, but isn't anymore, because we are dominated by insane ideas about cost. Nowadays we say, "It costs too much. We can't do it." But the answer lies in *infrastructure,* the development of basic economic infrastructure—in particular, the infrastructure of transportation.

Suppose a farmer is limited to animal and muscle power to grow and harvest his crops and move them to market, and suppose a city is limited to walking as a mode of transport.

In the one case, beyond a certain distance, the cost of carriage to market will price the farmer's goods out of consumption, no matter how well he produces. In the other, a city will not be able to expand in size much beyond a radius that can be walked in a given time, say for purposes of getting to and from work.

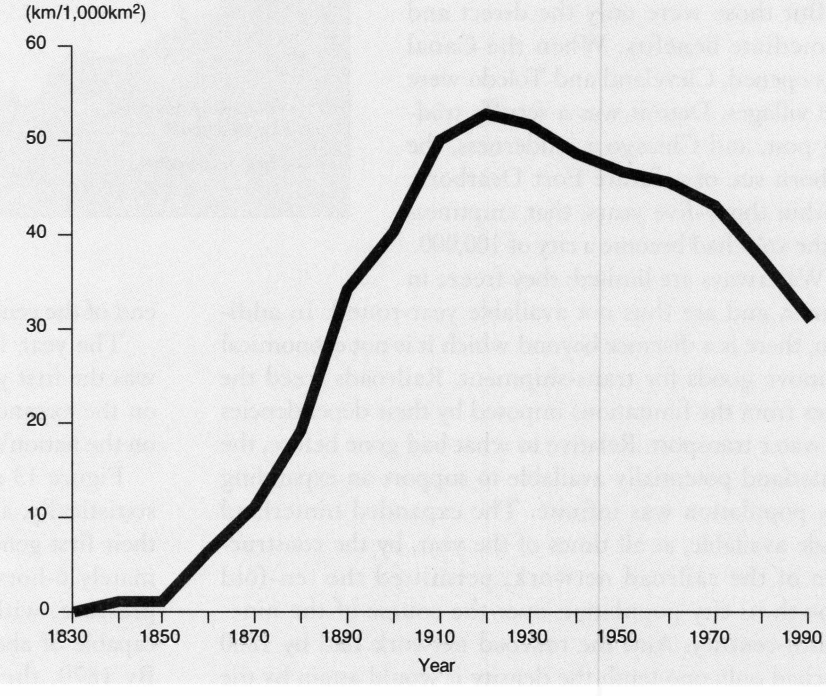
Thus, for example, at the time of the American Revolution, it was cheaper to transport goods 3,000 miles across the Atlantic ocean to Philadelphia, than it was to move them by wagon to Philadelphia from Lancaster, Pennsylvania. Robert Fulton expressed the arguments in a letter to Albert Gallatin, telling him that flour could be moved by water at one-tenth the cost it could by road, and that at prevailing transport costs it could not be moved further than 150 miles. With the beginning ratios we have seen, an area of about 240 square kilometers, devoted to cropland only and without access to water, would be required to provide for about 2,400 farm families, and six hundred city households. Increasing the number of city dwellers much beyond that would sooner or later result in a food shortage in the city, no matter whether or not farmers were growing food, because of the relationship between transport costs and area occupied.

The development of transportation infrastructure and the application of machine power to transportation infrastructure is what made the difference. Its importance is attested to by Benjamin Franklin's involvement with the projecting and planning of a highway system, by Washington's plans for a national canal system, and by Lincoln's involvement with the development of railroads, in Illinois with the Illinois Central, and of course, with the construction of the transcontinentals.

Aleady in 1786 and 1787, Oliver Evans—a Philadelphia engineer who invented the high-pressure, non-condensing steam engine, thus making the railroads possible (his type of engine powered Stephenson's Rocket), who built Philadelphia's first steam engine factory (immediately replicating the process in Pittsburgh, Cincinnati and Louisville), and who succeeded in applying steam power to the solution of Philadelphia's water-supply problems—had petitioned the Pennsylvania Legislature to sponsor development work on what would become the steam-powered railroad. But we went the route of road and water/canal, before we went to railroads. Maps I-IV show some features of this.

De Witt Clinton's Erie Canal was decisive. Built between 1817 and 1825, the Canal was intended to open

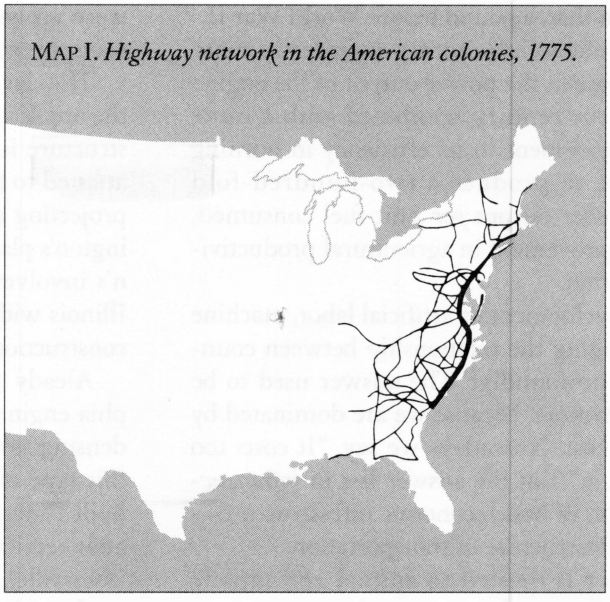
FIGURE 13. *U.S. railroad track length* per *total land area, in km/1,000km², 1830–1990.*



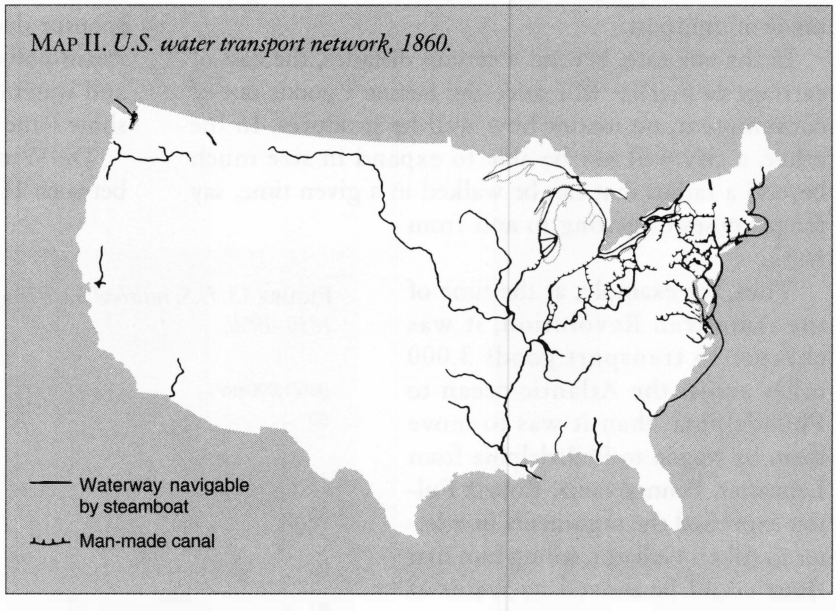
up 8,000 square miles across the Appalachians to agriculture, with Sandusky, Ohio as the distribution center, and to prevent Union farmers from becoming enthralled to a northern outlet for their goods, under the British in Montreal, and to a southern one, down the Mississippi in New Orleans. Under the latter, Northern farmers were supposed to be suppliers of bacon and grits to the ever-expanding slave system of the South. The Canal changed all that, by creating an outlet for expanded farm produce in the urban centers of the East.

Prior to the Canal's construction, it cost $100 and took twenty days to move one ton of goods the 425 miles between Buffalo and New York City. Once in New York, the goods were priced at three times and more the price of local produce. After the Canal was finished, freight costs fell to $15-25 *per* ton, and the time of the transit was reduced to eight days. In the years before the Civil War, the rate for goods from Ohio fell to one-tenth the pre-Canal rates. Farm production in Ohio doubled in value, without increasing costs to the consumer in the East. Within fifteen years the volume of goods coming from Ohio exceeded that originating in New York.

But those were only the direct and immediate benefits. When the Canal was opened, Cleveland and Toledo were still villages, Detroit was a scruffy trading post, and Chicago a wilderness, the unborn site of a future Fort Dearborn. Within thirty-five years, that emptiness in the void had become a city of 100,000.



MAP I. *Highway network in the American colonies, 1775.*

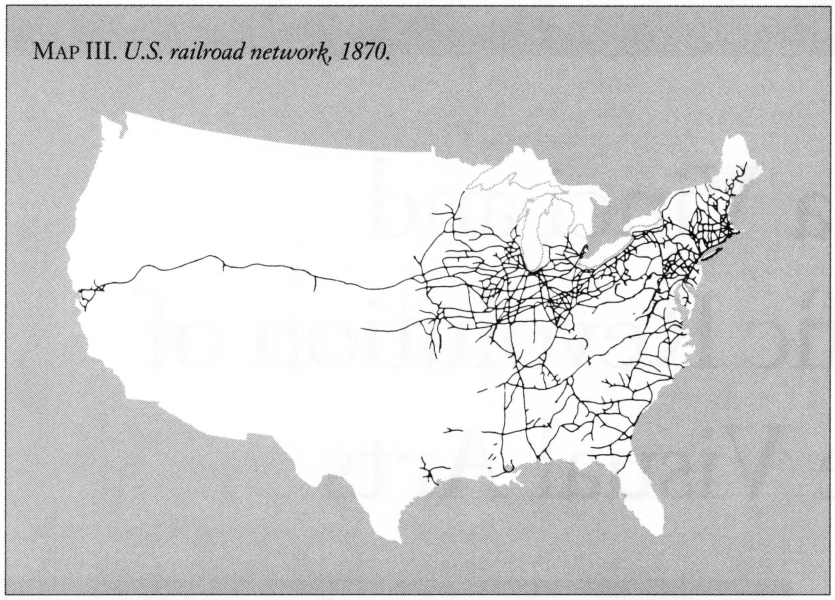


MAP II. *U.S. water transport network, 1860.*

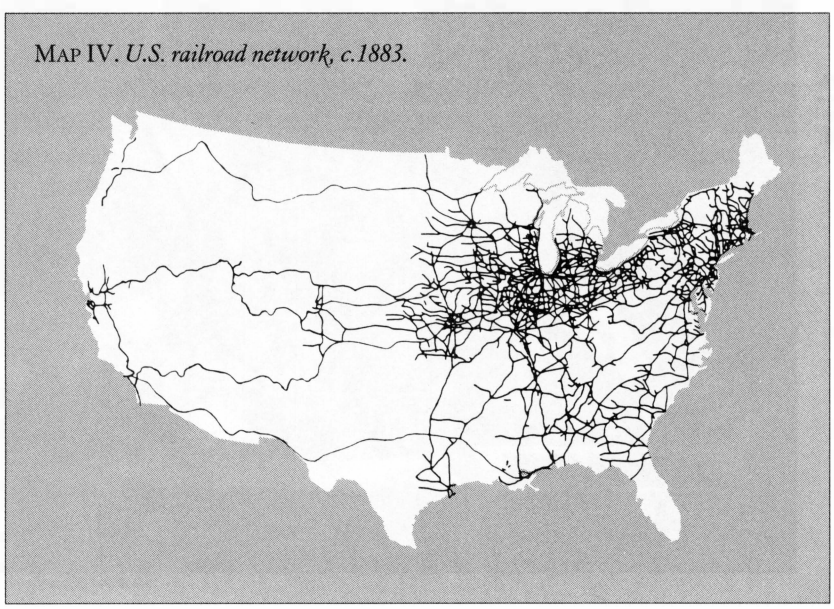
Waterways are limited: they freeze in winter, and are thus not available year-round. In addition, there is a distance beyond which it is not economical to move goods for trans-shipment. Railroads freed the cities from the limitations imposed by their dependencies on water transport. Relative to what had gone before, the hinterland potentially available to support an expanding city population was infinite. The expanded hinterland made available, at all times of the year, by the construction of the railroad network, permitted the ten-fold growth in city population over the course of the nineteenth century. And the railroad network had by 1860 reached only one-tenth the density it would attain by the end of the century (SEE Figure 13).

The year 1860, when Lincoln was elected President, was the first year in which the volume of freight carried on the expanding railroad system, exceeded that carried on the nation's waterways, man-made or otherwise.

Figure 13 shows the growth of the railroad network statistically, and Maps I-IV show it geographically. In their first generation, the railroad engines were approximately 6-horsepower affairs, operating at 50-psi steam pressure, with an axle weight of about 1-ton *per* axle, capable of about 1,000 ton-miles *per* hour, gross weight. By 1870, the coal burning standard American-class



MAP III. *U.S. railroad network, 1870.*



MAP IV. *U.S. railroad network, c.1883.*

engine produced 500 horsepower, with an axle weight of 20 tons. Ton-miles *per* hour were increased a hundred-fold and more. The railroads provided the logistical depth, and mobility, for Union forces during the War.

In the cities, the considerations applied are not so different. Improved transportation was equally vital, even if the distance scales are totally different.

Four phases stand out, prior to the twentieth century adoption of the automobile: The "walking" city; the city of the horse-drawn omnibus; the city of the rail-based, horse-drawn street car; and the city of the electric street car. In speed, the horse-drawn omnibus, pioneered by Leibniz collaborator Blaise Pascal in seventeenth-century Paris, was comparable to foot. The horse-drawn street car, running on iron rails, doubled the number of passengers that could be moved *per* team of horses, and increased the speed of travel from about four to about six miles *per* hour. Potential area covered, and thus potential city size, and population, increases as the square of the radius.

So the population of New York City, where horse-drawn street car service began operations in 1832, increased eight-fold to reach one million by 1860.

The electric street car, intoduced by Frank Sprague in Richmond, Virginia in 1885, quadrupled the enlarged area that could be served in the same period of time. It was what permitted the growth of population living in cities of over 10,000, from eleven million to forty-five million between 1880 and 1920.

And now look at the world today. Where does the unfinished work of Gettysburg stand? Yes, the technological means have increased vastly again beyond what we have discussed. Now we need nuclear scientists and engineers, not electrical engineers or boiler makers. But more than two-thirds of the world's population still live with over fifty percent of their labor force deployed in agriculture. Billions of people live in economies where urban population remains below thirty percent, and where cities have been rendered uninhabitable to human beings.

And we in the United States today, are seriously discussing handing the work of two hundred years, and indirectly many more, back to Mother Nature, and her consort, the Father of All Rivers, as the President's Mississippi-flood panel proposes. By the standards of November 19, 1863, we must surely, as a people, be judged insane; even, perhaps, traitors to the principles which made us what we were. The time has come to prove that is not so, to take up the solemn resolve of Gettysburg field, and to resume what Lincoln called "the unfinished work" of organizing victory for Renaissance principles for all mankind.

Leonardo da Vinci and The Scientific Revolution of Renaissance Visual Arts

by Nora Hamerman

Alinari/Art Resource, NY

FIGURE 1(b). *Jacopo de' Barbari, "Portrait of Luca Pacioli," c. 1498.*

FIGURE 1(a). *"The Creator as Architect of the Universe," Toldeo Cathedral Treasury, Toldeo, Spain.*

Wim Swaan

A revolutionary change was effected in the visual arts by the Golden Renaissance, reflected in the mid-fifteenth century shift in the curve of potential population density, which coincided with the Council of Florence and with Nicolaus of Cusa's treatment of the paradox of circular quadrature. Subsequently, Leonardo da Vinci carried out a second revolution in art, based on a deeper understanding of Cusanus' ideas.

A comparison of three representations of a figure drawing with a compass, provides a sharp image of the progress in the visual arts during the Renaissance. In Figure 1(a), we see the Creator imagined in human form as Architect of the Universe, impose order with the compasses of the master mason. This is a detail of the title page of Genesis from the Bible given by St. Louis of France to his cousin St. Ferdinand of Spain in the middle of the thirteenth century. Despite the beautiful notion of God

Photo Vatican Museums

FIGURE 1(c). *Raphael, Archimedes detail from "The School of Athens," 1509-11, Stanza della Segnatura, Vatican Palace, Vatican City.*

creating by means of circular action, the picture is completely flat, suggesting that the geometric knowledge of God cannot be made intelligible to human beings, just as the mathematical knowledge of the master masons who built the Gothic cathedrals was passed secretively through the families and the guilds.

Jacopo de' Barbari's portrait of Luca Pacioli giving a geometry lecture, shown in Figure 1(b), dates from around 1490. On the slate Pacioli demonstrates the construction of a pentagon from the equilateral triangle. On the right is a wooden model of a dodecahedron. Above hangs a crystal model of a 26-sided semi-regular solid. The painting is constructed according to the principles of artificial perspective, the conquest by which painting was uplifted from a mechanical art to the level of science in the fifteenth century. Unlike the Gothic example, the picture is composed in such a way as to express the achievements its celebrates. A three-dimensional space is convincingly rendered on a two-dimensional surface through the application of projective geometry.

Pacioli, the student of a great Renaissance painter, Piero della Francesca, was not an artist. He was the professional mathematician who collaborated with Leonardo da Vinci on the book, *The Divine Proportion,* in the 1490's. This portrait immortalizes Pacioli's accomplishment in identifying the ratio he called the Divine Proportion, known today less precisely as the Golden Section, as a unique expression of self-similar spiral action in the universe, characteristic of living things. Yet this concept is not adequately conveyed by the painting, which places a nearly motionless aggregate of particulars within a fixed space. For example, the student or assistant to Pacioli takes no real part in the limited action.

The third example, Figure 1(c) [SEE also, inside back cover] is from 1510, only a few years later. It is Raphael Sanzio's portrayal of the Greek mathematical physicist Archimedes giving a geometry demonstration.[1] Although it stands on its own, this picture is actually a detail of "The School of Athens" fresco in the Vatican, which was a Christian view of the contributions of pagan Classical Greek science. An imaginary, inverted cone superimposed on the episode, with its vertex at the point where Archimedes' compass rests on the slate, allows us to trace a spiral which would connect the faces and hands of the youths who participate in the class. They are not passive recipients of fixed information, but each individual absorbs and transmit the lesson to others who are in the process of arriving.

This illustrates the third, and highest level of spatial construction in painting, based directly on the discoveries of Leonardo da Vinci.

The *Divine Comedy* Of Dante Alighieri

The most efficient reference point for this progress in the science of painting is the method popularized in the *Divine Comedy* by Dante Alighieri, who is depicted in Figure 2 illuminating the City of Florence with his poem, which was written in the first two decades of the fourteenth century. On the left, center, and in the sky behind him are portrayed the three canticles of the *Divine*

FIGURE 2. *Domenico di Michelino, "Dante Alighieri Reading His Poem," 1465, Cathedral of Florence, Florence, Italy.*

Alinari/Art Resource, NY

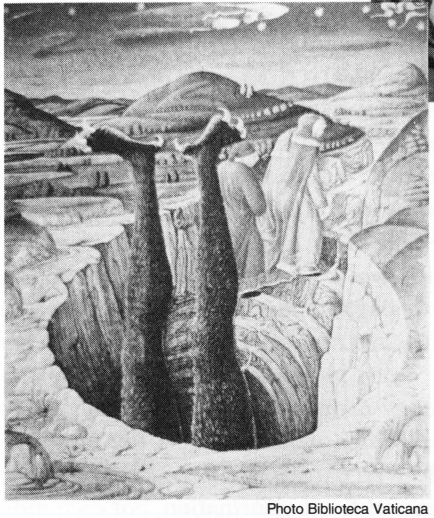
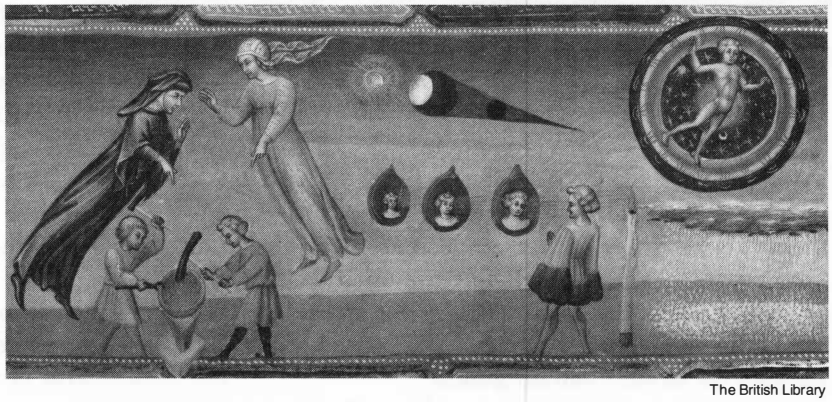


FIGURE 3. *Gerolamo Guglielmi, "Urbino Codex of the Divine Comedy," c.1480, illustration to Canto 34 of Inferno.*

Photo Biblioteca Vaticana

FIGURE 4. *"Yates-Thompson Codex of the Divine Comedy," c.1440, illustration to Canto 2 of Paradiso.*



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Comedy, a vernacular Italian epic of a journey of a living man, Dante himself, through the world of the afterlife, where divine justice is accorded to each individual's soul.

The lowest domain in this world, Inferno, is the domain of the greedy infantile ego. Selfish, sensually based love, as expressed by the Greek word *eros,* is the dominant emotion. Geometrically speaking, this is the domain of a fixed geometry based on algebra. Philosophically, it is the domain of Aristotle.

The highest domain, in the third Canticle of the *Comedy,* is Paradise. Filled with polyphonic music, it corresponds psychologically to the mature human being, in whom reason and feeling are harmonized by creativity in the image and likeness of God. The dominant emotion is *agapē,* the Greek word used in the New Testament for the universal love characteristic of the Creator. This corresponds to the level o f the transfinite.

Dante connects these two realms by an intermediate domain, Purgatory. This is the emotional level of the growing adolescent, who accepts the validity of external laws and the order of society, but whose emotions are still tied to the earthly paradise of selfish desires. At its best, the kind of love exemplified by the good citizens of Purgatory is conveyed by the Greek word *philia,* or brotherly

love.

Dante and his guide, the Latin poet Virgil, take a spiral journey down the internal (negatively curved) surface of an inverted, irregular cone. The spiral combines rectilinear motion with circular action, and accomplishes work. The souls in Hell are condemned to their fixed circles. Dante and Virgil accomplish work by coming to understand the geometry of evil as they descend through Inferno, from lust, irrational anger, and greed; to violence; to fraud; and finally to treason.

Consider how Dante communicates the non-linear shift between each of the three domains, with its different particular laws. In the pit of the ninth and final circle, or station, of Inferno, Virgil carries Dante, clinging to his neck, as they climb down the giant pelt of the hideous Lucifer, who is encased in solid ice. Then Virgil makes a 180-degree turn. This is a *phase-change,* comparable to the qualitative shift which occurs when ice turns to water at zero degrees centigrade.

Dante's terror at this turns to hope when he and Virgil emerge out the other side of the earth, where they glimpse Mount Purgatory and see the stars (SEE Figure 3).

Purgatory is the domain of shadow and time, where the selfish impulses of Hell are negated, and the infernal noise of disorderly sensuality is replaced by unison singing of hymns. The journey upward on the outside, positively curved surface involves physical effort, in contrast to the all too easy descent into Hell. While seemingly mathematically similar to the spiral journey to the apex of Inferno, it is physically going in the opposite direction, negating the negation of evil.

Passing through the gateway of Purgatory, Dante is required to deny the evidence of sense certainty. The angel instructs him that he may not turn around to verify with his eyes the noise of the gate shutting behind him, which he hears with his ears. The paradox is then heightened by art. For in a divinely created series of relief sculptures which is shown to him, Dante contemplates an art so powerfully realistic that a small war breaks out between his senses. Ultimately, Dante is made to confront the full horror of the deadliest of the seven deadly sins—pride, the irrational obsession with one's fixed knowledge.

Having completed the seven cornices of Purgatory, where the sins of pride, envy, rage, laziness, greed, gluttony, and lust have been purged, Dante must find the courage to walk through a wall of fire. This is a *phase-change* again, reminiscent of the qualitative shift in form from liquid to vapor, which then tends to rise. To do this he must draw upon a higher love—*agapē*—by thinking of the image of a beloved woman who has died, Beatrice. The best of the Platonic legacy of antiquity, embodied by his guide the poet Virgil, is not adequate to carry him further on his journey. For this the *imago Dei* bestowed by Christian faith is required.

Dante tries to follow the example of Beatrice by gazing into the sun, the glory of God, but his mortal eyes are too weak to stand the intense light. So, he rises to Paradise by gazing into the reflected light in her eyes, a metaphor for Platonic dialogue. Now, the positive energizing force of divine love has replaced the relatively entropic "negation of the negation," as the motor of his continued journey.

Paradise is the domain of true scientific inquiry. especially concerning the science of optics. Dante and Beatrice discuss the origin of the spots on the Moon, the first level of his journey through the physical universe as it was understood by the astronomy of the time. Dante offers a hypothesis based on purely quantitative considerations, which Beatrice refutes by proposing two experiments, and then offers a higher hypothesis of her own (SEE Figure 4). This is the first instance where a scientific experiment and the process of hypothesis formation is introduced into a poem.

In the final canto of the Paradise, Dante grapples with making the Trinity intelligible, by offering a series of metaphors of the paradox of the One and the Many. One of these evokes the optical phenomenon by which a single

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FIGURE 5. *Leonardo da Vinci, detail of Christ, "The Last Supper," 1495-98, S. Maria delle Grazie, Milan, Italy.*

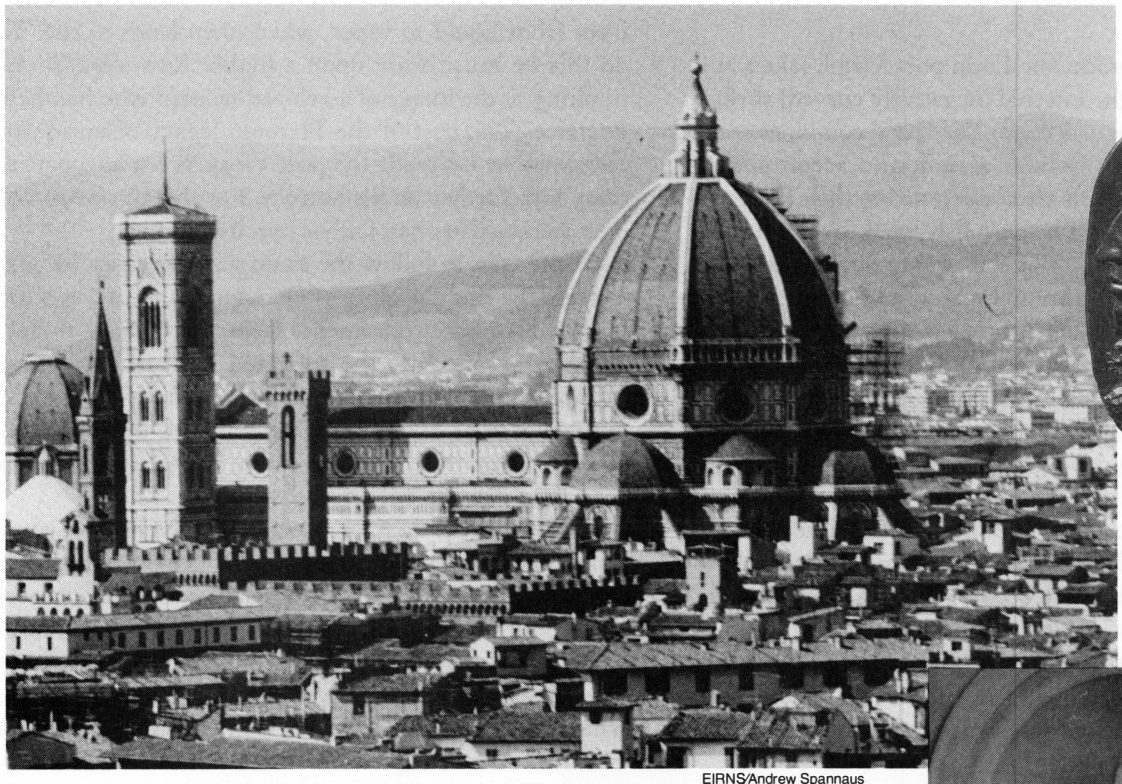

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FIGURE 6. *(a) Above: Cathedral of Florence, dome designed and constructed by Filippo Brunelleschi. (b) Bottom right: Statue of Filippo Brunelleschi, Florence, Italy. (c) Top right: Leon Battista Alberti, "Self-Portrait," bronze medal, c. 1435.*

light—the one, which is white—is split by a prism into the three primary colors, red, yellow, and blue.

Dante's final image is that of the geometer who struggles with the problem of the quadrature of the circle, as posed by Archimedes and redefined at a higher level by Nicolaus of Cusa. Dante reports that in struggling with this problem, he suddenly leaped to the state of mind in which his intellect and his will were moved on the same path by which Love—*agapē*—moves the sun and the other stars.

And as Dante looks directly into the dazzling pure light of God, at the center of the Empyrean, he sees "our own effigy." This is Christ, the man-God, and no depiction comes closer than Leonardo da Vinci's Christ of the "Last Supper" (SEE Figure 5).

Leonardo and The Science of Perspective

When Dante wrote the *Divine Comedy* just after A.D. 1300, the growth surge of European population density from the highpoint of the Gothic cathedral-building era had drastically stagnated, thanks to the triumph of usury. Then cataclysm struck. In 1342 the most powerful banks of Europe, the Florentine Bardi, Peruzzi, and Accaiuoli, collapsed after the King of England defaulted on his debts. In 1348, the Black Death swept through Europe from Asia, brought by slave ships from the Black Sea, as the catastrophe of the Mongol invasions in China spread to the West, carrying off as much as fifty percent of the population of major urban centers, especially in Italy and southern France. From the family, to the Church, to the Holy Roman Empire, every institution crumbled in the face of this twofold crisis. By 1400, the population had collapsed to the levels of two centuries earlier. Yet by the middle of the fifteenth century, starting around the time of the Council of Florence of 1439, the growth curve had resumed its vertical climb.

The Renaissance was shaped in Florence on the basis of the cultural optimism of Dante, St. Augustine, and Plato. Filippo Brunelleschi, the first modern architect, swept aside the secretive power of the medieval masons,

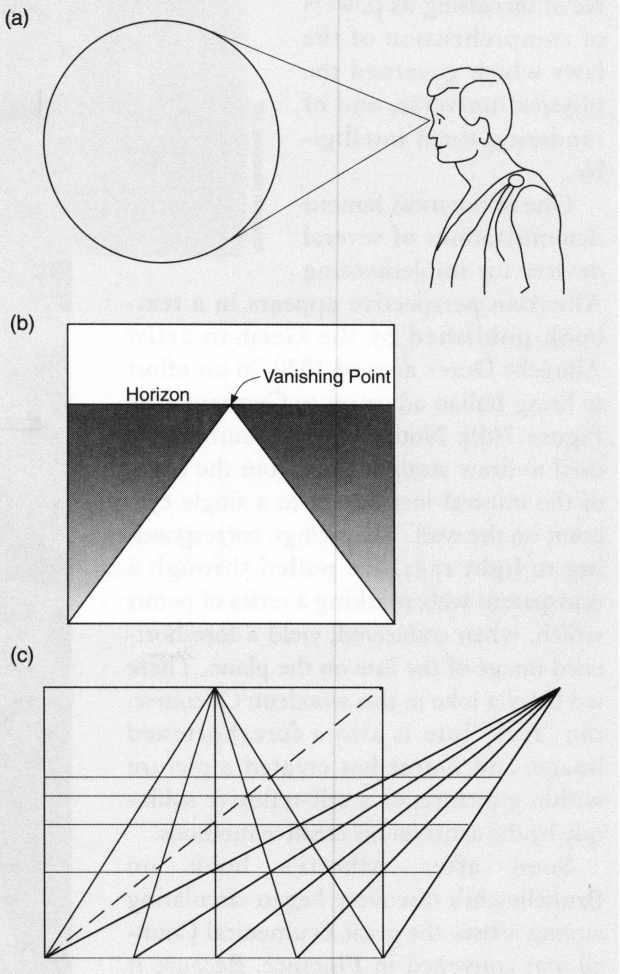
and established the principle of intervention into history by an individual of genius. His dome for Florence cathedral, shown in Figure 6(a) was the technological, artistic, and economic marvel which heralded a new golden age. Brunelleschi, portrayed in Figure 6(b) drawing with a compass and looking up at his dome, also rediscovered painter's perspective, applying the laws of projective geometry to the problem of representing three-dimensional reality on a two-dimensional surface.

Leon Battista Alberti [SEE Figure 6(c)], another Florentine genius, adapted and wrote down Brunelleschi's discovery in a book in Italian published in 1436, as the dome was being completed and just before the convening of the great Ecumenical Council in Florence in 1439, where the Eastern and Western Christian churches were reunified around higher principles which subsumed differences between particular cultures and rituals. Brunelleschi's discovery thus became known as Albertian perspective. This kind of construction can easily be taught to young children, and should again become a standard part of the school curriculum.

Brunelleschi and Alberti simplified vision to a single eye and imagined that rays of light enter the eye, which is a passive recipient, in a cone or pyramid [SEE Figure 7(a)]. Each line intersects the plane of the picture, which is interposed between the three-dimensional object of sight and the eye, in one and only one point, thus permitting a lawfully ordered mapping process. Figure 7(b) shows the single vanishing point, corresponding to the eye, which is placed on the horizon of the picture. All the orthogonals from the scene or object being represented, are mapped to converge on this point. And in Figure 7(c), we see how a series of lines are mapped onto the plane from the three-dimensional original in Albertian perspective. Note that the topological features are maintained, such as the number of corners, but the shape becomes distorted according to the distance and angle of vision of the interposed plane. Such distortions are called "foreshortening."

Brunelleschi set up a famous experiment to convince others of his discovery. He painted the Baptistery, a famous local building, from the door of the nearby cathedral. He drilled a small conical hole in the painting at the vanishing point. When a person stood in the cathedral door and looked through the hole in the back of the painting, holding a mirror in the other hand, he could verify that the painted image corresponded exactly to the real

FIGURE. 7. *Development of Albertian perspective.*



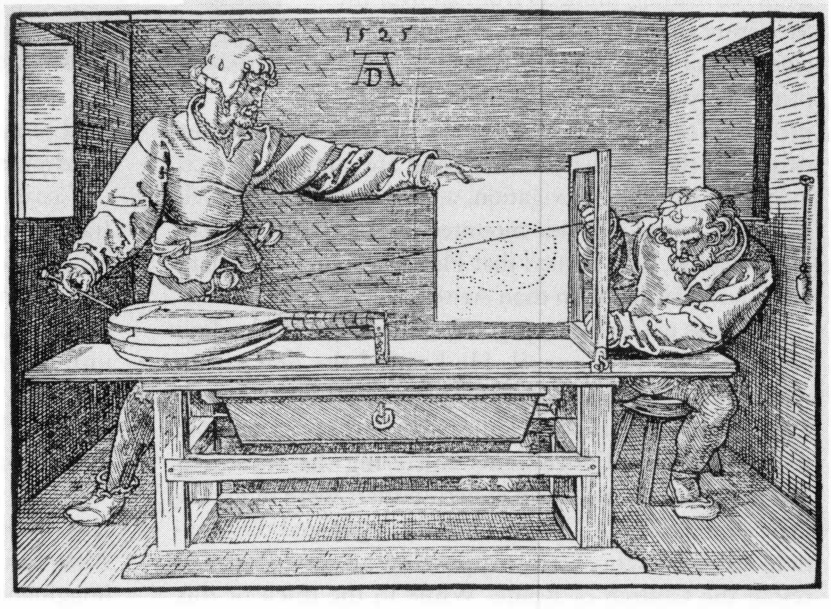


FIGURE 7(d). *Albrecht Dürer, "A Man Drawing A Lute," 1525.*

building. This showed that the human mind was capable of increasing its powers of comprehension of the laws which governed the physical universe, and of rendering them intelligible.

One of the most famous demonstrations of several devices for implementing Albertian perspective appears in a textbook published by the German artist Albrecht Durer around 1520, in an effort to bring Italian advances to Germany [SEE Figure 7(d)]. Notice how a plumb line is used to draw straight lines from the edges of the musical instrument to a single eyepoint on the wall. The strings, corresponding to light rays, are pulled through a transparent web, marking a series of points which, when connected, yield a foreshortened image of the lute on the plane. There is a bit of a joke in this woodcut: Of course, the "real" lute is also a foreshortened image, and Durer has created a picture within a picture, or a self-reflexive soliloquy by the artist on his creative methods.

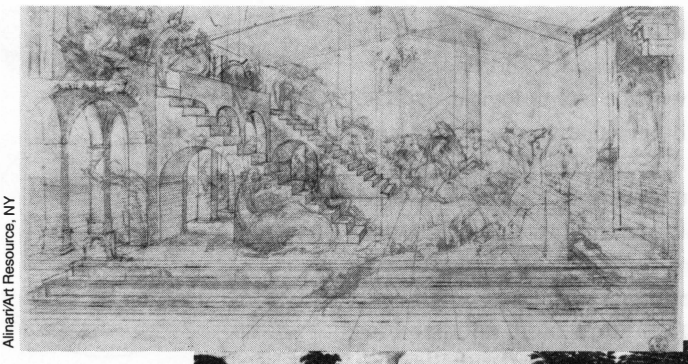


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FIGURE 8. *(a) Below: Leonardo da Vinci, "Adoration of the Magi," 1498. (b) Left: Architctural study for "Adoration of the Magi.*

Soon after Alberti's book on Brunelleschi's discovery began circulating among artists, the great Ecumenical Council was convened in Florence. Because it gathered leading thinkers from all over the Mediterranean world and Africa, the council not only debated the theological principles which unify all Christians, but it provided the forum, outside the official sessions, for debate on the frontiers of theoretical and applied science, including printing, navigation, and mapmaking, as well as for the crucial polemic mounted by the Greek philosopher Plethon, who argued that Plato was more consonant with the Christian faith than Aristotle.

Nicolaus of Cusa [SEE page 43, this issue] was a leading organizer of the Council. He headed the delegation which traveled to Constantinople to invite the Greek Emperor and Orthodox church hierarchy, and while there he gathered documents bolstering the argument that early Greek and Latin church fathers were united in their concept of the Trinity. He then organized the German princes, who were supporting an anti-Pope, to rejoin the Church of Rome. While in the thick of this ecclesiastical and political battle, in 1440, Cusa published *On Learned Ignorance,* tackling afresh the problem of the quadrature of the circle posed by Archimedes.

Cusanus' work circulated among leading Platonists in Italy, where from 1458 to 1464 he spent the last years of his life as the highest official under Pope Pius II. This work formed a major inspiration for the ideas of Leonardo da Vinci, born near Florence in 1452. Leonardo's unfinished "Adoration of the Magi" [SEE Figure 8(a)], begun in 1480, demonstrated the transformation from the hypothesis of linear perspective to the higher hypothesis which we will term "spherical perspective."

In the preparatory study shown in Figure 8(b) [SEE also, back cover], Leonardo showed his mastery of the Albertian scheme by mapping one of the most intricate imaginable networks of orthogonals converging on a single vanishing point. But the problem of this perspective

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FIGURE 9.
Sandro Botticelli, "Adoration of the Magi," 1476.

construction by itself, is that it cannot account for what is most important: the *phase-change* from a lower to a higher geometry. The limitation is inadvertently expressed by a theoretical treatise on painter's perspective written in the middle of the fifteenth century in Italy. The author, Piero della Francesca, asserted that painting consists of three elements: color, outline, and the diminution of forms in space, yet only the third can be treated scientifically. He poured scorn on any artist who does not master and indeed, advance, the science of perspective. However, as Leonardo later realized, perspective is really the science of vision, and therefore it must encompass all aspects of the visual universe. In his treatise on painting, Leonardo theorized fully three kinds of perspective—perspective of color, of forms, and of diminution. We do not live in an airless Euclidean space in which a single eye receives straight lines which are neither bent nor refracted.

Moreover, of course, human and animal figures do not stand like geometrical cylinders and spheres in this crystalline space, but they move. Sandro Botticelli, an older artist of Leonardo's generation, had grappled with this problem. In his "Adoration of the Magi" (SEE Figure 9), Botticelli showed a parade of figures dominated by the members of the Medici family who unofficially ruled Florence, converging on the Holy Family, which is seated under the shelter of a manger perfectly constructed according to the Albertian rules. Yet despite the colorful costumes and animated postures of individuals, the picture remains static. Indeed, by comparison to Leonardo's nearly contemporary "Adoration," the key figure, the Christ Child bestowing a blessing on the oldest of the Magi, is so small he can hardly be distinguished.

Examine Leonardo's version. Here, he uses the light itself to organize the picture in a higher geometry than that dictated by the Euclidean spatial fiction which Albertian perspective accepts implicitly. Thus, Leonardo's Christ Child, who leans energetically away from his mother's protective lap, initiates a spiral motion which acts to transform the entire surrounding area. The Magi were, after all, astrologers—Zoroastrians who practiced an evil cult of magic in which the forces of dark and light were considered in eternal battle for the universe—and Leonardo shows these figures as it were at the very moment of their transformation. At the left and right, an old and a young philosopher flank the painting as if to announce its deeper meaning to the viewer. They are, unlike the figures who occupy a similar position in Botticelli's picture, outside the contemporary political elite of Florence, and appeal to a more universal notion of the concrete individual.

The new perspective system based on light and shadow is fully exemplified by Leonardo da Vinci's "Virgin of the Rocks," a completed altarpiece (SEE Figure 10). A very old Oriental tradition had it that Christ was born in a grotto, but this is the first painting to create an ambiguity as to whether we are inside the cave looking out, or outside the cave looking in. Leonardo has perched us on the boundary between positive and negative curvature. The subject is a common Florentine one, that of the infant St. John the Baptist visiting the Virgin and Child and an attendant angel.

The painting has two distinct sources of light. One is

the natural light source which illuminates the sky in the background. The other is a supernatural light which picks out the hands and faces of the four figures.

Each person is distinguished by a different quality of gesture. The human precursor of Christ, John the Baptist, kneels and joins his hands in prayer, a gesture of bondage. The Virgin Mary, the first convert to Christianity, with her acceptance of the mission given to her by the angel in the annunciation, urges John forward with her right hand while covering the child with a protective gesture with her left. The Christ Child below lifts his right hand in a gesture of blessing. The octave interval between the Virgin and Child is punctuated by the pointing hand of the angel, which divides the interval at the distance of a musical fifth. Leonardo, himself an accomplished musician, was highly conscious of the beauty of proportions embodied in such intervals.

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FIGURE 10. *Leonardo da Vinci, "The Virgin of the Rocks," 1483-86, Louvre, Paris, France.*

The angel, a purely spiritual being, alone looks out and connects the viewer to the painting. The head is turned in three-quarter view, maximizing the effect of implicit motion. Leonardo creates a beautiful geometric shape in the outline of the head, but without drawing a hard line. The "line" is the optical result of the meeting between areas of light and dark, which he often blurred in the final phases of painting by smearing it with his finger.

No doubt Leonardo also meant to allude to Plato's parable of the cave in the *Republic,* one of the first Platonic dialogues to have been translated in fifteenth century Florence. Plato imagined the human race to be like a group of persons chained inside a cave, whose only notion of reality were the shadows which project on the wall of the cave from a fire outside. When one prisoner escapes and returns to report that their prisoner perceptions are being created by manipulators outside, his fellow slaves try to kill him. Plato told this parable to illustrate the falsity of sense-perception as the basis of knowledge.

Leonardo demonstrated that Albertian perspective was inadequate to portray reality because everything depended on a single centric ray. Painters had long realized that there were serious limitations to Albertian single-point perspective. In an instance such as that of a row of columns illustrated here in Figure 11(a), artificial perspective would cause the outer columns to appear much wider than the middle one, even though they were all the same size. However, Leonardo rejected any notion of a return to the simple empirical methods of the pre-Alberti generation. In one passage of his notebooks he warns: "Perspective comes in where judgment fails as to the distance of objects which diminish. The eye can never be a true judge for determining with exactitude how near one object is to another which is equal to it,"[2] and he proceeds to offer a mathematical construction for making this determination.

In a drawing from the early 1490's [SEE Figure 11(b)], Leonardo showed sketches of an Albertian construction of a long room, and an unfolding double-helix which suggests both his observations of the self-organizing patterns in water flows, and the self-development of living forms. Elsewhere he wrote, concerning perspective: "Just as a stone flung into the water becomes the center and cause of many circles, and as sound diffuses itself in circles in the air: so any object, placed in the luminous atmosphere, diffuses itself in circles, and fills the surrounding air with infinite images of itself. And is repeated, the whole everywhere, and the whole in every smallest part."[3]

Leonardo did not abandon single-point perspective, but he transformed it by studying the areas of ambiguity which are formed by caustics, as seen in Figure 11(c),

which are formed by intersecting families of curves. This takes us to the domain Leibniz later called transcendentals. Instead of only focusing on the centric ray, he devoted attention to the phenomena which occur on the peripheries of vision, especially as these are affected by atmosphere.

Leonardo was the first hydraulic engineer in history to study the effects of changing velocities on water flows, which he illustrated in many drawings [SEE Figure 11(d)]. He stated that his concern was to discover how to measure the flow of water, which involved using discontinuous quantities, or units of measurement, to divide the continuous, hydrodynamic flow.

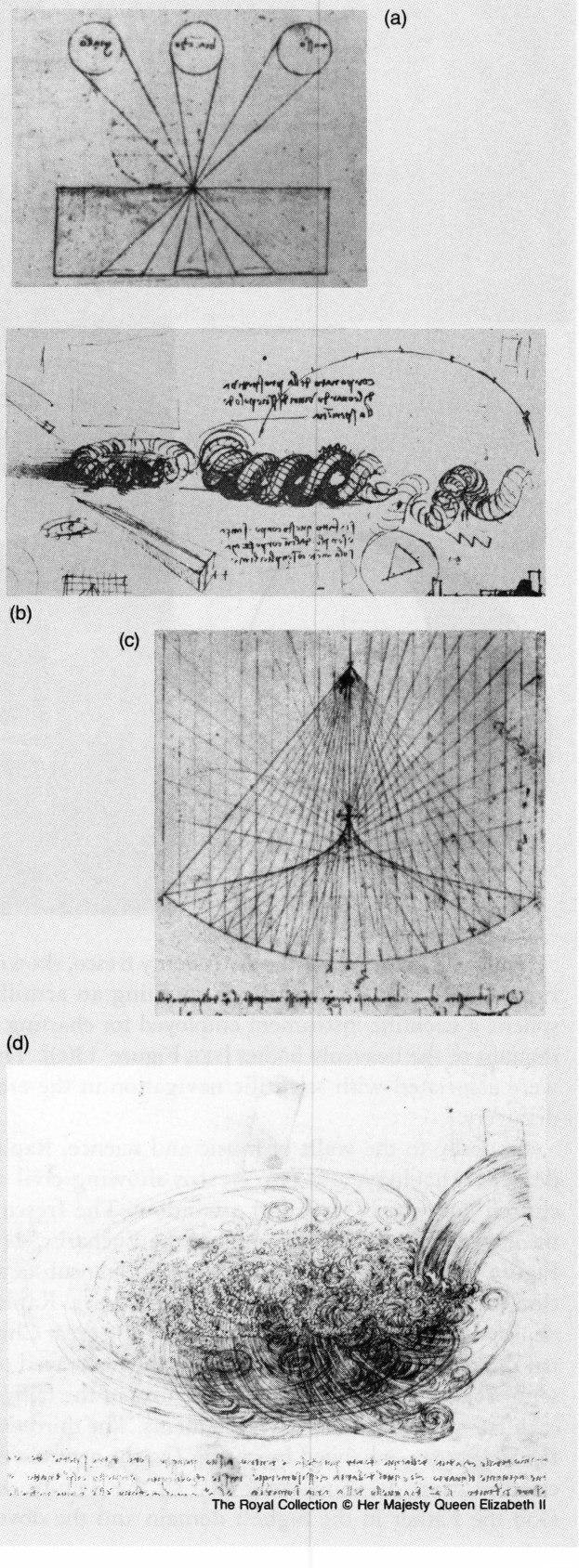
Raphael Elaborates Leonardo's Discoveries

Only twelve authentic paintings by Leonardo da Vinci have come down to us, and many of those are not completed. It was largely left to an artist of the next generation, Raphael Sanzio, born in 1483, to apply Leonardo's discoveries. Raphael's Archimedes, shown in Figure 1(c), is not merely a figure in the "School of Athens"; he is actually acting to create the painting in which he appears, for by correcting for foreshortening, we can overlay the design on Archimedes' slate to the orthogonals of the architecture behind the figures representing physical sciences in the "School of Athens" fresco [SEE Figure 12(a)].

Thus Raphael poetically created the context in which Plato intervenes into the Vatican against the influence of Aristotle, who flanks him under the arch in the center background of the full "School of Athens." This fresco is part of a squarish room in the papal apartments called the *Stanza della Segnatura* [SEE Figure 12(b)]. Raphael's murals on the four walls and ceiling represented the totality of human knowledge from the standpoint of Christian Platonism, which was at its apogee in 1510 in the Church, when Raphael painted these frescos. He imagined the room as if the different gatherings of great thinkers were projected onto the negatively curved inside of a sphere. Figure 12(c) shows a spherical quadrant in which a figure stands at the center of a sphere; this matches the perspective of the *Staza della Signatura*. In the vault, the concepts connecting these fields of human knowledge are depicted.

For example, between the "School of Athens," representing physical science, and the adjoining wall of "Parnassus" representing poetry and music, Raphael shows Astronomy [SEE Figure 13(a)]. Thus, the Platonic concept of the Harmony of the Spheres lies at the boundary between the domains of music and physical science.

FIGURE 11. *Leonardo da Vinci, drawings.*



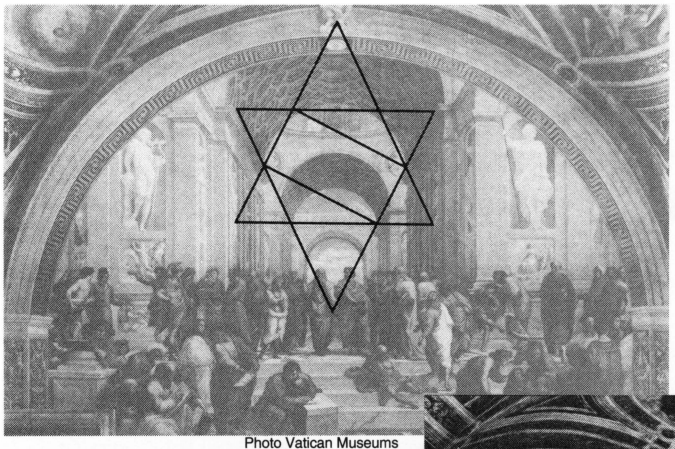


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FIGURE 12. *(a) Left: Raphael's "School of Athens" with overlay of Archimedes' slate diagram. (b) Below: View of the Stanza della Segnatura, showing Raphael's "School of Athens" and "Parnassus" frescoes, Vatican Palace. (c) Bottom Left: Diagram of perspective in the Stanza della Segnatura.*

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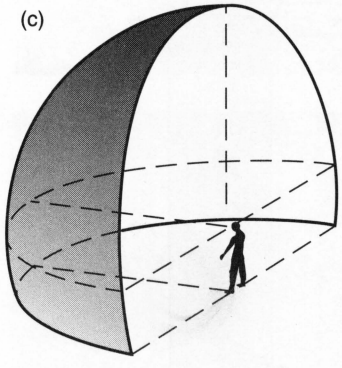

Raphael's drawing for the Astronomy fresco, shown in Figure 13(b), shows that she is spinning an armillary sphere, a scientific instrument employed for charting the motions of the heavenly bodies [SEE Figure 13(c)]. These were associated with scientific navigation in the era of discovery.

Opposite to the walls of music and science, Raphael depicted theology, and two frescos showing civil and church law which surround a window. The fresco on theology, entitled "The Triumph of the Eucharist,"[4] [SEE Figure 14(a)] celebrates the doctrine of Transubstantiation of the host as the true body of Christ. Raphael depicted three levels. On the ground are the great Christian theologians of 1,500 years. Above them, arrayed on a semicircular cloud are twelve key figures of the faith, six each from the Old and New Testaments. The third tier is the Empyrean, inhabited by angels. On the central vertical axis, these domains are joined by the Trinity, with God the Father in the highest domain and the dove of the Holy Spirit below shown in the midst of the twelve Old and New Testament saints. Between these two levels is the third member of the Trinity, Christ flanked by Mary and John the Baptist. Below on the altar, Raphael depicted the earthly presence of the Trinity in the Eucharist, which is the subject of debate and adoration among the gathered theologians.

In Figure 14(b) we have drawn lines to illustrate how the great circles of an armillary sphere correspond to the composition of Raphael's "Triumph of the Eucharist"; hence, theology is shown to be in harmony with the cosmology of the universe, as it was understood to be in Raphael's day. And in Figure 14(c), at the upper right corner in this detail, we see how Raphael depicted the angels in the Empyrean as if projected on the inner surface of a sphere and seen from the sphere's center.

Raphael's last masterpiece, where he most profoundly applied Leonardo's revolution in perspective, is the "Transfiguration," a large altarpiece painted in oils just

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FIGURE 13. *(a) Left: Raphael, "Astronomy," detail of ceiling vault, Stanza della Segnatura. (b) Below: Raphael sketch for "Astronomy."*

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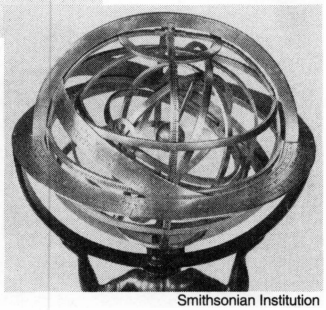
FIGURE 13(c). *Armillary sphere, Italian, sixteenth century.*



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before his death in 1520 (SEE front cover, this issue). It was painted in competition with a similar-sized altarpiece by Sebastiano del Piombo, a Venetian follower of Michelangelo. Raphael was regarded by these rivals as the artistic heir to Leonardo, who had left Rome for France where he died in 1519.

The altarpiece depicts the episode in the Gospel where Christ, transfigured with the two prophets Moses and Elijah at either side, appeared to his three closest disciples, Peter, James, and John. For the first time in history, Raphael combined this subject with the episode which follows it in the Bible. While Christ was transfigured on Mount Tabor, in Jerusalem the remaining disciples were confronted by a woman with a possessed son and asked to cast out the devil; they were helpless.

Raphael organized his picture into three domains:

- The earthly one is dominated by darkness. Here we see the bewildered apostles, unable to act in concert, and the mother of the possessed boy. However, at the same time we see a divine light which points to the later cure of the child after Christ's transfiguration
- An intermediate level is represented by the three disciples on Mount Tabor, who recoil from Christ's splendor.
- At the highest level Christ rises in an explosion of radiance, surrounded by clouds from which the voice of God the Father emanates, proclaiming that Jesus is his son.

Following the example of Leonardo, Raphael has used the differing qualities of light to unify the painting, which allows him to avoid being locked into a single perspective system which could never show the progression through these qualitatively different fields. From the standpoint of Albertian perspective the lower domain has one vanishing point, but the top of the mountain has been tilted to reveal the three startled disciples. In the sky we look upward toward the figure of Christ.

In the background at the right, dawn is breaking, and the natural light of day provides a reference against which the other light sources may be compared. Exactly as in Dante's *Divine Comedy,* which progressed from the darkness of Inferno, to the shades of Purgatory, to the pure light of Paradise, Raphael distinguishes the three levels of the drama by different kinds of light whose pro-

FIGURE 14(a). *Raphael, "The Triumph of the Eucharist," Stanza della Segnatura, Vatican Palace.*

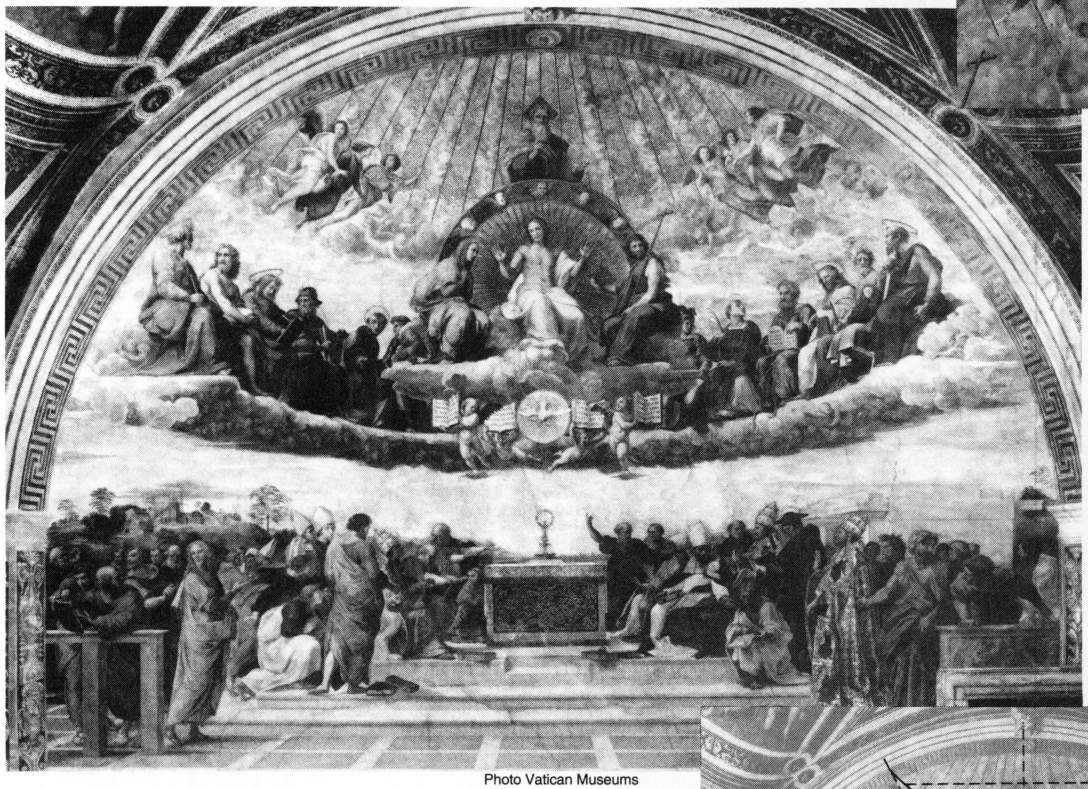

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FIGURE 14(c). *Detail, "The Triumph of the Eucharist."*

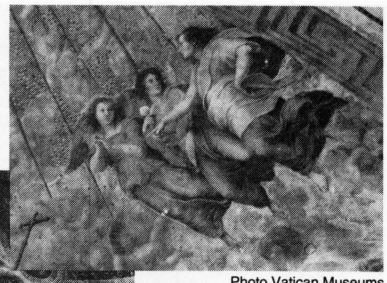

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FIGURE 14(b). *Diagram, "The Triumph of the Eucharist."*

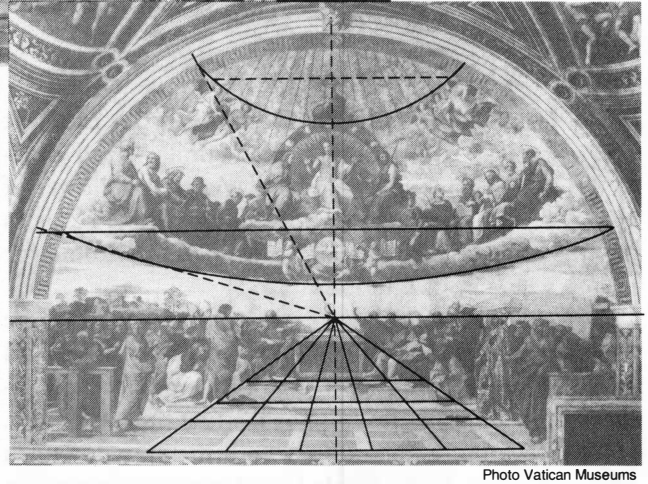


Photo Vatican Museums

gression is used to unify the composition.

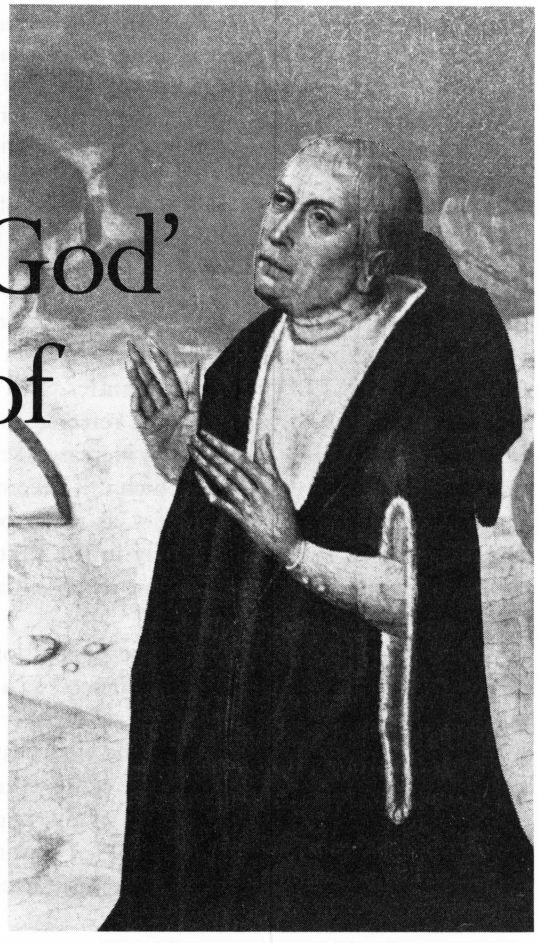
In conclusion, we can bring this back to the point stressed by Lyndon LaRouche in his "History as Science" essay: the crucial role contributed by individual ideas and by individual personalities in the shaping of history. Leonardo and Raphael were two such individuals. While they were living, they were able to guide their followers, and even such hostile rivals as Michelangelo, to a quality of work they were unable to match once these masters were gone. Even when, a century later, in Spain and Holland, the great painters Rembrandt and Velasquez were able to honorably take up where Leonardo and Raphael had left off, they did it without attempting to advance Leonardo's efforts to define the scientific practice of painting in written theoretical form. That task remains to the next generation, when the brutality of the twentieth century has been put behind us, and mankind can once more embrace Leonardo's and Raphael's ideas of beauty and perfection in art.

NOTES

1. Konrad Oberhuber, in *Raffaello: Il Cartone della Scuola di Atene* (Milan: Silvana, 1972), Fontes Ambrosianae No. 47, definitively proved that this figure is not Euclid, as traditionally believed, but Archimedes.
2. Manuscript fragment Institut de France C, 27b (1490-91), cited in J.P. Richter, *The Notebooks of Leonardo da Vinci* (New York: Dover, 1970).
3. Manuscript fragment Institut de France A, 9b (1492), cited in J.P. Richter, *ibid.*
4. This fresco has been traditionally misnamed the "Disputation on the Sacrament."

Nicolaus of Cusa's 'On the Vision of God' And the Concept of Negentropy

by William F. Wertz, Jr.



Reprinted from "Nikolaus von Kues, 1401-1464: Leben und Werk im Bild," courtesy of Dr. Helmut Gestrich

Cardinal Nicolaus of Cusa

The purpose of my presentation today is to discuss the concept of negentropy expressed by Nicolaus of Cusa in the his book "On the Vision of God," so that we might better master the ideas necessary to reverse the entropy which will otherwise engulf America by the year 2000, if not earlier.

In a recent paper entitled "The Challenge for the Human Race: A Mission Task Orientation to Develop Science Beyond Its Current Limits," Lyndon H. LaRouche, Jr. wrote:

> I suggest that we look at the famous work by Nicolaus of Cusa, his "On the Vision of God." Cusanus reaches the same definition of what I have called *negentropy* as I defined in 1952. That is, the notion, for example, in an economic process, that a viable economic process is one in which the *per capita* and *per* hectare or per square kilometer energy of the system, that is, of the economic social reproductive system, is increasing, but that at the same time, the relative free energy to energy of the system, is also increasing. That kind of system, and organizations which correspond to that kind of system, are what I term as the *phenomena* to which the term negentropy is properly applied, rejecting the definition of negentropy which is derived from the negative H-theorem, that is, from the Boltzmann conception of negative entropy.

LaRouche continues:

> So throw out negative entropy as a definition of the phenomenon to which the term negentropy is often applied, and go to the biological definition of the phenomenon of life, what we mean by the difference between *living* and *non-living* processes defines for us the difference between what we call *negentropic* and *entropic* phenomena. The term entropy and the term negentropy, should be regarded as attempts to supply terms which we would then seek to explain, for the difference between living and dying or dead processes.

LaRouche concludes:

> In "On the Vision of God," Cusanus outlines a development of species in this way, that essentially if one were to describe what Cusanus is saying in "On the Vision of God," one would say that he is defining species, or a succession of species, which are distinguished in their succession, by an increase of the energy of the system *per* individual and in respect to nature *per capita, per* square kilometer or *per* hectare while at the same time the ratio of free energy to energy of the system, is being increased. That is what the Periodic Table describes. That is essentially what all living processes describe. And that is essentially the key to the difference between living and non-living processes.

The notion that the universe is characterized by the principle of maximization of entropy based on the First and Second Laws of Thermodynamics, and that any apparent exception to this principle referred to as negative entropy ultimately results in an increase in entropy, is a pseudo-scientific conception, which if it becomes dominant in the thinking of any society, as it has become in large part today, results necessarily in the death of that society due to its inability to increase its potential relative population density.

The increase in potential relative population density which the human species has experienced as a result of the Council of Florence in 1439-40, is directly attributable to the opposing, actually scientific view that the universe is characterized by a principle of negentropy, and that man as the highest expression of the negentropic development of the universe is capable of continuing the creative development of the universe insofar as he is in the living image of God.

The neo-Malthusians view this increase in potential relative population density as negative entropy, that is, as a violation of the principle of entropy. According to their view the world's population must be reduced and industrial development curbed not in order to prevent the entropic exhaustion and death of the universe, which they regard as inevitable, but merely to postpone it. Theirs is not a culture of life, but rather a culture of death based on non-living processes.

If this cultural paradigm is to be reversed, we must ground ourselves in the opposing negentropic conception of life, which was expressed by Nicolaus of Cusa in "On the Vision of God," written in 1453, and in a number of his other works.

Today the very concept of evolution gives rise to a false debate between the Darwinian, materialist conception of evolution and so-called Creationism, as based upon a literal interpretation of the Bible. However, in his writings, Nicolaus of Cusa presented a third concept, which can only be described as a Christian concept of evolution. The idea that God's creation of the universe does not contradict the concept of evolution is not original to Cusanus. St. Augustine put forward such a conception in his commentary "On Genesis," in which he argued that all things that are generated take their origin and development, each in its proper time, from the original principles or seminal reasons of things which God placed in them. (*A,* p. 103)

In "On the Vision of God," Cusanus uses the example of a nut tree to demonstrate that if we want to know the essence of a created thing, we must ascend in our mind's eye from the visible domain to its First Cause in the invisible domain. He takes this approach based upon the Apostle Paul's statement in Romans 1:20, that "[e]ver since the creation of the world, his invisible attributes of eternal power and divinity have been able to be understood and perceived in what he has made."

Cusanus argues: If I seek the power and beginning of a nut tree which I see with the sensible eye, I must look with my mind's eye to see that the tree existed potentially in its seed. However, since the seed has power only with respect to this species of nuts, I must reflect upon the entire seminal power of all the trees of various species. If, then, I wish to see the Absolute Power of all the powers of such seeds, I must pass beyond all seminal power to the Beginning, which gives being to every power, whether seminal or non-seminal. He continues:

> This absolute and superexalted Power gives to each seminal power the power whereby it enfolds a tree potentially, together with all that is required for a sensible tree and all that follows from the being of a tree. Accordingly, this Beginning and Cause has within itself—as Cause, and in an absolute and enfolded manner—whatever it gives to the effect. In this way I see that this Power is the Face, or Exemplar, of every arboreal species and of each tree. In this Power I see this nut tree not as in its own contracted seminal potency but as in the Cause and Maker of that seminal power. And so, I see that this tree is a certain unfolding of the seed's power and that the seed is a certain unfolding of Omnipotent Power. (*DM,* p. 143)

> Moreover, I see that in the seed the tree is not a tree but is the seminal power, and the seminal power is that from which the tree is unfolded, so that in the tree there can be present only what proceeds from the seed's power. Similarly, in its own Cause, which is the Power of powers, the seminal power is not seminal power, but is Absolute Power. And so, in You my God the tree is You Yourself my God; and in You it is the Truth and Exemplar of itself. Likewise, too, in You the seed of the tree is the Truth and Exemplar of itself. Of both the tree and the seed You, O God, are the Truth and Exemplar. (*DM,* p. 145)

In this discussion of the nut tree, Cusanus puts forward the idea that all creation is enfolded eternally in God as Cause and unfolded in time as effect. God, therefore, both transcends the universe and is present in it.

Since all things were made through the Word, the Word is present in all things. Or as Cusanus writes in "On the Vision of God," "since God is the Absolute Form of all formable forms, He enfolds in Himself the forms of all things." (*DM,* p. 123) Since God is the Absolute Being of all things, He is present to each and every thing. God is not the universe, as a pantheist would argue, because He precedes the universe, which He has created. He is "all in all," therefore, in such a way that He is nothing of everything. Thus although God is not a creature and therefore cannot be seen by the sensible eye, He is nonetheless the invisible Cause and Essence of each and every creature, a concept which Cusanus locates as expressed by the Apostle Paul, who wrote that God "is before all things, and in Him all things hold together" (Col 1:17), that God is "all in all" (1 Cor 15:28), and that "God is not far from us, for we are in Him and we are moved" (Acts 17:27-28).

The creature does not exist through itself, but rather derives its specific form from the Form which exists through itself. Therefore, if we wish to know the Nature of the creature we must see the invisible in the visible, the cause in the effect, the truth and exemplar in the image.

Those who argue that the universe is entropic, do so because, like Aristotle, they deny that man is capable of elevating his mind above inductive and deductive forms of discursive rationality to the level of creative intellect. Because Aristotelian logic defines as its first principle the law of contradiction, it rejects as impossible the coincidence of opposites, such as the idea expressed by Cusanus in "On Learned Ignorance" that "every created thing is, as it were, a finite infinity or a created god," in contradistinction to God, who is Absolute infinity and uncreated. (*LI,* p. 93) But to arrive at a true understanding of the laws of the universe, and to enter Paradise, as Cusanus writes in "On the Vision of God," one must vanquish the "lofty rational spirit" (*DM,* p. 161) of Aristotelian logic, which guards the gate of the wall of Paradise.

Today we hear a lot about a concept of self-realization, according to which man divorced from God reduces himself to a bestial state. However, Cusanus argues that for man to truly realize his potential, he must rise to the level of being an adopted son of God. Since man is created in the image of God, he can only be his true self to the extent he conforms to his own Cause and Exemplar. When God says to him: "Be your own and I will be yours," (*DM,* p. 147) Cusanus understands that to mean that we are our own, i.e. our own true selves, when the senses serve reason and we are in harmony with the Word.

When we rise to the level of creative intellect, then we are capable of seeing that the universe is not entropic, but rather unfolds negentropically, precisely because it is enfolded in God, Who is eternal.

One of the major obstacles to conceptualizing how God could have created the universe out of nothing in eternity which precedes time and how at the same time it can be said that the universe evolves in time, is the tendency to view eternity from the standpoint of succession. But as Cusanus points out:

> Now, posterior to most simple eternity no thing can possibly be made. Therefore, infinite duration, which is eternity itself, encompasses all succession. Therefore, everything which appears to us in a succession is not at all posterior to Your Concept, which is eternity. For Your one Concept, which is also Your Word, enfolds each and everything. . . . [A]ll things exist because You conceive them. Now, You conceive in eternity. But in eternity succession is—without succession—eternity itself, i.e., Your Word itself, O Lord God. Any given thing that appears to us in time was not conceived by You before it existed. For in eternity, in which You conceive, all temporal succession coincides in one and the same now of eternity. Therefore, where the future and the past coincide with the present, nothing is past or future. (*DM,* p.167)

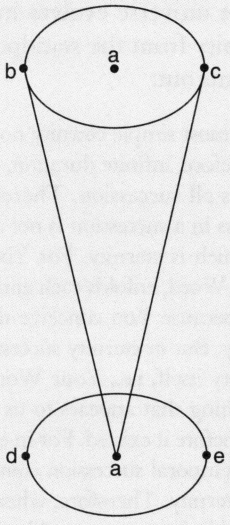
In 1715, Gottfried Wilhelm Leibniz derided the entropic concept of the universe advocated by Sir Isaac Newton and his follower Samuel Clarke by pointing out that "[a]ccording to them God has to wind up his watch from time to time. Otherwise it would cease to go. He lacked sufficient foresight to make it a perpetual motion." (*L,* p. 205)

In "On the Vision of God," Cusanus points out that in God's Clock, succession is present without there being succession in the Word, or Concept, that in this most simple Concept are enfolded all movements we experience as in succession, that whatever occurs successively is the unfolding of the Concept, so that the Concept gives being to each successive thing and that the reason each event was nothing before it occurred is that it was not conceived before it existed. Cusanus then concludes: "So let the concept of a clock be, as it were, eternity itself. Then, in the clock, movement is succession. Therefore, eternity enfolds and unfolds succession, for the Concept of a clock—a Concept which is eternity—both enfolds and unfolds all things." (*DM,* pp. 169-171)

In "On Actual-Potential," Cusanus uses the example of a boy playing with a top to show how Eternal Being is all things at once and how the whole of eternity is within the present moment (SEE Figure 1):

> Let us describe a circle, *bc,* which is being rotated about a point *a* as would the upper circle of a top; and let there be another fixed circle, *de:* Is it not true that the faster the movable circle is rotated, the less it seems to be moved? Suppose, then, that the possibility-to-be-moved is actual in it; i.e., suppose that the top is actually being moved as fast as possible. In that case, would it not be completely motionless? Since the motion would be infinite velocity, points *b* and *c* would

FIGURE 1.



be temporally present together at point *d* of the fixed circle—without its being the case that point *b* was temporally prior to point *c*. (For if *b* were temporally prior to *c*, the motion would not be maximal and infinite.) And yet, there would not be motion but would be rest, since at no time would points *b* and *c* move away from the fixed point *d*. Hence the maximal motion would at the same time also be minimal motion and no motion. In that case, just as the opposite points *b* and *c* would be always at point *d*, would they not always also be at the opposite point from *d*, namely, at *e*? Would this not likewise hold true for all the intermediate points of the circle *bc*? Therefore, the whole of the circle would at every instant be simultaneously present at point *d*. And the whole of the circle would be not only at *d* and *e* but also at every other point of the circle *de*. Let it suffice, then, that by means of this image and symbolically we are somehow able to see that (if the circle *bc* were illustrative of eternity and circle *de* were illustrative of time) the following propositions are not self-contradictory; that eternity as a whole is at once present at every point of time and that God as the beginning and the End is at once and as a whole present in all things. (*CI*, pp. 83-84)

Having developed the above concepts I would now like to quote from a number of Cusanus' other writings, in which he is more explicit in regard to his conception of creation as the unfolding of that which is enfolded in the Word.

In "On Learned Ignorance," Cusanus writes:

> We see that by the gift of God there is present in all things a natural desire to exist in the best manner in which the condition of each thing's nature permits this. (*LI*, p. 49)

> In God as in an end all natural movements find rest; and in Him as in infinite actuality all possibility is realized. (*LI*, p. 79)

> The same holds true regarding the earth, the sun, and other things: unless they had been latently present in matter—present in terms of a certain contracted possibility—there would have been no more reason why they would have been brought forth into actuality than not. (*LI*, p. 106)

> The motion of the planets is an unrolling of the first motion; and the motion of temporal and terrestrial things is the unrolling of the motion of the planets. Certain causes of coming events are latent in terrestrial things, as the produce is latent in the seed. Hence these thinkers said that the things enfolded in the world-soul as in a ball are unfolded and extended through such motion. (*LI*, p. 112)

> Matter has from its aptitude for receiving form—a certain appetite. . . . Form desires to exist actually but cannot exist absolutely, since it is not its own being and it is not God. . . . [w]hile possibility ascends towards actual existence, form descends, so that it lifts, and perfects, and terminates possibility. (*LI*, p. 112)

> The highest species of the one genus coincides with the lowest species of the immediately higher genus, so that there is one continuous and perfect universe. (*LI*, p. 126)

> Therefore, no species descends to the point that it is the minimum species of some genus, for before it reaches the minimum it is changed into another species; and a similar thing holds true of the would-be maximum species, which is changed into another species before it becomes a maximum species. When in the genus animal the human species endeavors to reach a higher gradation among perceptible things, it is caught up into a mingling with the intellectual nature; nevertheless, the lower part, in accordance with which man is called an animal, prevails. . . . Accordingly, it is evident that species are like a number series which progresses sequentially. . . . Whether we number upwards or downwards we take our beginning from Absolute Oneness (which is God)—i.e., from the Beginning of all things. Hence, species are as numbers that come together from two opposite directions . . . . (*LI*, p. 127)

In "On Conjectures," Cusanus writes:

> Each of the elements therefore can enfold in itself the three others, as in the cone of a three-sided pyramid, such that the unity of one is the actuality of the other elements, and thus a composition arises peculiar to each element. (*TNCF*, p. 102)

> Therefore, the universality of the elements ascends to the most specific as the point to the body, by means of syllables and words, as potentiality to actuality. . . . For the individual is, as it were, the end of the flux of the elements and the beginning of their reflux. (*TNCF*, p. 103)

Corporeality proceeds upwards into spirituality. Because the descent of the spirit is the ascent of the body, you must combine both . . . . (*TNCF,* p. 116)

Hence the vegetative spirit conceals in its darkness the intellectual; and certain signs of it appear in the branches as support, in the leaves and in the skin as protection of the fruit. Nevertheless, we experience more intellectual signs among animals, where the spirit is clearer; for we experience the signs of intellectual vigor more clearly and nearly in the senses, still more in the imagination and more amply in rationality. (*TNCF,* p. 117)

The corporeal nature climbs upward stepwise to the sensitive and indeed such that its ultimate ordering nearly coincides with the sensitive.' (*TNCF,* p. 125)

In "On Genesis":

Moses also expresses this elegantly, when he says: "God formed man of the dust of the earth and breathed into his face the breath of life and he became a living soul," so that he expresses in this way the earthly man, who is also called Adam, the earthly; according to the extrinsic as body, which is summoned from the dust of the earth or the nature of the elements, and according to the intrinsic as the vital power, which is from the breathing in of the divine spirit or the participation in the divine power, so that thus from this moment the living man is one true man. (*TNCF,* p. 227)

In "On the Game of Spheres":

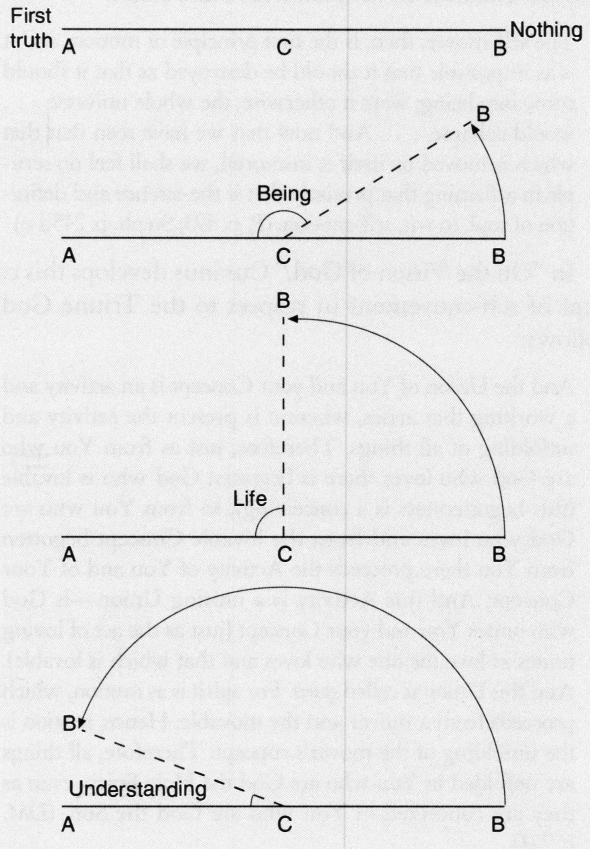
Elemental power is hidden in chaos and sensitive power is hidden in vegetative power, and in that vegetative power the imaginative power, in the imaginative power, the logical or rational, in the rational the intelligential, in the intelligential, the intellectible, and in the intellectible the Power of powers. (*GS,* p. 111)

As is clear from the above, Cusanus conceives of the unfolding of species enfolded in God's Word as a transfinite number series. Since God is both the center and the circumference of the universe, this number series can be visualized as both a descent and an ascent. In "On the Vision of God," Cusanus points out by comparison that "he who counts unfolds and enfolds, alike: he unfolds the power of oneness, and he enfolds number in oneness." (p. 171)

In "On Beryllus," Cusanus gives the following figurative representation of this process (SEE Figure 2):

Let the line *AB* be a similitude of the truth and stand between the first truth and nothing. Let *B* be the end of the similitude in respect to the nothing. *B* should be folded over *C* in an enfolding motion toward *A,* and thus represent the motion, with which God summons from non-existence into existence. The line *AB* is fixed, so long as it egresses from the origin as *AC* does, and movable, so long as it is moved enfoldingly over *C* toward the origin. In this

FIGURE 2.



motion, *CB* with *CA* causes various angles, and *CB* unfolds by means of this motion different similitudes. First it causes in a less formal similitude an obtuse angle, which is its being; then in a more formal similitude an angle, which is its life; and then in the most formal and most acute angle it causes its understanding. The acute angle participates more in the activity of the angle and in its simplicity and is more similar to the first Origin.

And it is in the other angles, namely, in that of life and of being. Likewise the angle of life is in that of being. And what intermediate differences there are between being and life and understanding and what can be unfolded, you will see likewise in the enigma. (*TNCF,* pp. 311-12)

For Cusanus, this evolutionary process in the universe which proceeds from the elemental to the vegetative to living beings culminates in Man, who is both *imago Dei* (the image of God) and a microcosm, who both mirrors and acts upon the macrocosm.

In order to understand in what way man is the image of God, we must first consider Cusanus' conception of the Triune God. Although Cusanus develops the concept of the Triune God in many ways in his writings, perhaps the most illustrative for our purposes is the concept of the

Trinity as an expression of the concept of God as self-moving, which we find in Plato's dialogues, the *Phaedrus* and the *Timaeus*. In the *Phaedrus,* Plato states:

> The self-mover, then, is the first principle of motion, and it is as impossible that it should be destroyed as that it should come into being; were it otherwise, the whole universe . . . would collapse. . . . And now that we have seen that that which is moved by itself is immortal, we shall feel no scruple in affirming that precisely that is the essence and definition of soul, to wit, self-motion. (*P,* p. 493; Steph. p. 245d-e)

In "On the Vision of God," Cusanus develops this concept of self-movement in respect to the Triune God as follows:

> And the Union of You and your Concept is an activity and a working that arises, wherein is present the activity and unfolding of all things. Therefore, just as from You who are God who loves there is begotten God who is lovable (this begottenness is a conceiving), so from You who are God who loves and from the lovable Concept begotten from You there proceeds the Activity of You and of Your Concept. And this Activity is a uniting Union—is God who unites You and your Concept (just as the act of loving unites in love the one who loves and that which is lovable). And this Union is called *spirit.* For spirit is as motion, which proceeds from a mover and the movable. Hence, motion is the unfolding of the mover's concept. Therefore, all things are unfolded in You who are God the Holy Spirit, even as they are conceived in You who are God the Son. (*DM,* p. 221)

In "On the Game of Spheres," Cusanus emphasizes that man is in the image of God, not in respect to his bodily form, but in respect to his creative intellect, which in the image of God is self-moving. In examining how the soul operates when it invents something new such as a game, Cusanus writes:

> I thought to invent a game of knowledge. I considered how it should be done. Next I decided to make it as you see. Cogitation, consideration and determination are powers of our souls . . . . (*GS,* p. 69)

> When I think, consider, and determine, what is happening except that the rational spirit, which is the thinking, considering, and determining power, is moving itself? And when I seek the definition of the soul—what the soul is—do I not think and consider? And in this I find that the soul is self-moving in a circular motion because its motion turns back upon itself. For when I think about thinking, the motion is circular and self-moving. . . . Thinking generates consideration, and determination proceeds from them. They are but one living motion moving itself perfectly. (*GS,* p. 71)

Cusanus further argues that that which is self-moving does not cease. God who is self-moving is eternal. That which he has created, which is self-moving is perpetual. Thus Cusanus writes:

> Although the motion that gives life to the animal ceases with the declining health of the body, nevertheless the intellectual motion of the human soul, which exists and functions without the body, does not cease. For this reason that motion, which intellectually moves itself, is self-subsistent and substantial. That motion which is not self-moving is an accident, but that motion which is self-moving is a substance. (*GS,* p. 65)

Therefore, what dies is not the substance of man, but rather only that which is accidental to his substance.

Cusanus further maintains that the macrocosm, i.e., the universe as a whole, is self-moving and therefore perpetual. In "On the Hunt for Wisdom," he argues that God, Who is eternal, creates the potential-to-become of all actual creatures out of nothing, and that this potential-to-become of the universe is perpetual. Thus he says: "The whole world can never cease." (*TNCF,* p. 479) In "On the Game of Spheres," he further argues that "also perhaps that substance which is called the sensitive or vegetative soul does not perish through the death of an animal or the withering of a tree although it does not operate as before." (*GS,* p. 73) The reason that he believes that this is the case is because "the world soul is the sensitive soul in sensitive things, the vegetative soul in vegetative things, and the elemental soul in elemental things." (*GS,* p. 75) Similarly, in "On the Vision of God," Cusanus writes: "O Lord, I see that Your Spirit cannot be lacking to any spirit, because it is the Spirit of spirits and the Motion of motions; and it fills the whole world. But whatever things do not have an intellectual spirit Your Spirit governs by means of the intellectual nature that moves the heavens . . . ." (*DM,* p. 263)

Thus, according to Cusanus, not only does the individual human soul not cease, but also neither does the world as a whole nor the substance of sensitive, vegetative, or elemental souls perish.

What distinguishes man from an animal, is that the latter lack the free power that is in us. In "On the Game of Spheres" Cusanus writes: "Nature can never impose necessity upon our spirit, but the spirit can impose necessity upon nature." (*GS,* p. 73) As a result of his free spirit, man can invent new modes of social reproductive behavior, whereas a beast must follow the impetus of nature. According to Cusanus: "Therefore they are impelled to do those things that they do by their nature, so that all the members of each species hunt and make nests in the same way." (*GS,* p. 71)

It is in connection with Cusanus' conception of man as having the free will necessary to invent something new that we see most clearly a reflection of LaRouche's concept of negentropy as characterized by an increase of the energy of the system and at the same time an increase in

the ratio of free energy to energy of the system. Although the unfolding of the universe occurs negentropically in that all things, as Cusanus says, "desire to exist in the best manner in which the condition of each thing's nature permits this," man, since he has free will, can increase his dominion over nature by choosing to increase his conformity to God.

As Cusanus writes in "On the Vision of God":

> I must see to it that, as best I can, I be made more and more capable of receiving You. But I know that the capability which conduces to union is only likeness. . . . Therefore, if by every possible means I make myself like unto Your goodness, then according to my degree of likeness thereto I will be capable of receiving truth. . . . My being is such that it can make itself more and more capable of receiving Your grace and goodness. And this power, which I have from You and by virtue of which I possess a living image of Your omnipotent power, is free will. Through free will I can either increase or decrease my capability for receiving Your grace. (*DM,* p. 127)

Man, therefore, is not only *imago Dei,* but *capax Dei.* He has the capacity to become increasingly Godlike or Deiform. In "On the Vision of God," Cusanus argues that man can attain union with God. In imitation of Christ, man can become an adopted son of God. To explicate this capacity in man, Cusanus compares it to the capacity for successive increase in both mineral and sensible life. He writes that "there is a single spirit of the source of gold. As a result of the influence of the sun or the heavens this spirit is more and more purified until at last it is fashioned into gold. . . ." (*DM,* p. 257) Similarly "in man the sensible spirit . . . under the influence of the heavens . . . becomes successively increased—to the point where it is posited in perfect actuality." (*DM,* p. 257) Cusanus then writes that the intellect, which is not constrained by the influence of the heavens but is altogether free, if it subjects itself by faith to the influence of the Word of God, "is perfected and grows and is made progessively more capable of receiving the Word and progressively more conformed, and similar to the Word. And this perfection, which comes in this way from the Word, from which the intellect has being, is not a corruptible perfection but is Godlike." (*DM,* p. 259)

From this standpoint, it should be clear that entropy exists in the same way that evil exists. It has no positive being, and therefore only exists to the extent that man through the misuse of his free will departs from the good. Therefore, rather than being a law of the universe, entropy is merely the evil consequence of man's own decision to decrease his capability of receiving the grace and goodness of God by refusing to bring his intellect into conformity with God's Word.

In "On the Vision of God," Cusanus concludes that Christ has taught only two things—faith and love:

> Through faith the intellect approaches unto the Word; through love it is united therewith. The closer the intellect approaches, the more it is increased in power; and the more it loves the Word, the more it is fashioned in the Word's light. But the Word of God is within the intellect, which need not search outside itself. For it will find the Word within, and it will be able to approach the Word by faith. And through prayer the intellect will be able to obtain the capability of approaching more closely. For the Word will increase the intellect's faith by imparting its own light. (*DM,* p. 261)

These are the ideas which gave rise to a Golden Renaissance in the arts and sciences in the fifteenth century and which resulted in the most significant rate of increase in man's power over nature in human history. These are the ideas of God, man, and nature which the prevailing culture of death in our society today is determined to expunge. And these are the ideas which we must master once again if we are to achieve the reverse paradigm shift necessary to prevent the continued rapid disintegration of civilization.

The task before each and every one of us, as LaRouche writes in "History as Science," is to become "wittingly *imago Dei.*" or as Cusanus writes in "On the Vision of God," to find the Word of God within our own intellects, to become self-moving in the image of God and thus to increase our *capax Dei,* so as to become more intelligent and loving instruments of the continued unfolding of God's negentropic purpose. As Cusanus writes in "On Learned Ignorance," since God as the life of all rational spirits is their center, "it is not the case that, with respect to location, He is seated on the circumference rather than at the center. And, therefore, He who is the 'Fount of life' for souls, as well as their goal, affirms that the Kingdom of Heaven is also within men. [Luke 17:21]." (*LI,* p. 145)

NOTES

1. Jasper Hopkins, *A Concise Introduction to the Philosophy of Nicholas of Cusa" (Minneapolis: University of Minnesota Press, 1978). (CI)* This book contains a translation of "On Actualized-Possibility," referred to in the text as "On Actual-Potential."
2. Jasper Hopkins, *Nicholas of Cusa on Learned Ignorance* (Minneapolis: The Arthur J. Banning Press, 1981). (*LI*)
3. Jasper Hopkins, *Nicholas of Cusa's Dialectical Mysticism* (Minneapolis: The Arthur J. Banning Press, 1985). (*DM*) This volume contains a translation of "On the Vision of God."
4. Pauline Moffitt Watts, *On the Game of Spheres* (New York: Abaris Books, 1986). (*GS*)
5. William F. Wertz, Jr., *Toward a New Council of Florence* (Washington, D.C.: Schiller Institute, Inc. 1993). (*TNCF*)
6. *Leibniz Philosophical Writings,* ed. by G. H. R. Parkinson (London: J. M. Dent and Sons Ltd., 1973). (*L*)
7. *The Essential Augustine,* selected by Vernon J. Bourke (Indianapolis: Hackett Publishing Company, 1985). (*A*)
8. *The Complete Dialogues of Plato,* ed. by Edith Hamilton and Huntington Cairns (Princeton: Princeton University Press, 1980). (*P*)

The Classical War Against Multiculturalism: Brahms' Compositional Method

by Dennis Speed

It is the purpose of my presentation, to identify what constitutes *universal* culture, as distinct from any "centrist" conceptions of culture, Eurocentric, Afrocentric, Sinocentric, or egocentric. Centrism is a noise word for what we previously called racism. The centrist theory entertains the idea that everyone in the human race should have his or her own theme park, or his or her own designer cage in a human zoo. And, this human zoo should be ruled, according to population control experts, like Gen. William Draper, by a force that will become "the Park Ranger for the human race"[!].

Many people are completely confused about the idea of universal culture and universal history. For example, a college student asked me: "Who would write this universal history, since everyone comes from a particular background?" My response was, "That depends on whose universe you think it is."

If there be universal laws, then they exist in each section of the universe in the same way. Their manifestations may be different, but the law is the same. If these laws can be known to be true, and demonstrated to be true, they are science. It is the communication, transmission, and improvement of these laws which is universal history.

For example, there are many languages, but the whole human race uses something called language, for the purpose of discovering universal law. Wilhelm von Humboldt states that

> [t]he bringing forth of language is an inner need of man, not merely an external necessity for maintaining communal intercourse, but a thing lying in its own nature, indispensable for the development of his mental powers and the attainment of a world view, to which man can attain only by bringing his thinking to clarity and precision through communal thinking with others. . . . The mental power that intrudes from its inner depth . . . into the course of world events, is the truly creative principle in the hidden and . . . secret evolution of mankind . . . in contrast to the overt sequence obviously linked by cause and effect.

Lyndon LaRouche has pointed to the exponential growth in population which followed the Council of Flo-

Anton Dvořák *(facing page, right) was trained to be a butcher, but showed greater promise as a musician. He was a street violinist for a while, but got some training at the organ between the ages of sixteen and eighteen. After that, he studied on his own.* **Johannes Brahms** *(facing page, left), born in Hamburg, came out of what we would call the ghetto in America today. His father was an above-average musician. His mother, who had made her living as a seamstress, was able to quote large sections of Schiller's poetry by heart. Brahms supplemented the family income by playing the piano in bars when he was thirteen. He was significantly self-taught. Obviously, neither Brahms nor Dvořák were from the elite of German or Czech society.* Prints and Photographs Division, Library of Congress

rence and the Renaissance. It is important to identify the fact, that the people of the Italian Renaissance spoke a language that did not exist two hundred years earlier, but was invented by the poet Dante Alighieri. Dante, who lived from A.D. 1250 to the early 1300's, struggled to invent a language that could resurrect the most profound ideas of human thought even if his own era should ultimately commit suicide. This suicide, in fact, did occur through the banking collapse caused by the Bardi and Peruzzi families.

Without Dante's gift of the Italian language, which was shaped by him from over a thousand local dialects, there could not have occurred the Renaissance. Dante's *Divine Comedy* refined the *canto* form of sung poetry. His follower, Francesco Petrarca, sought to advance the language further with the invention of the *soneto* or sonnet. But, Petrarca's friend Boccaccio was assigned by Petrarca to a different project, called the *Decameron*. The *Decameron* was written in order to prevent the whole of Italian society from sinking into cultural pessimism and dying out during the Black Death of the 1340's and later. It consists of satirical stories, many quite bawdy and risqué, which recount the tragedy of Europe's suicide in a way designed to make people laugh at themselves and repeat the stories, and hopefully not the behavior which had destroyed them. Thus, they would learn Dante's Italian.

Geoffrey Chaucer attended a lecture by Boccaccio on Dante in 1375, and got the idea to do the same thing as Boccaccio had done, in English. Thus was born *The Canterbury Tales,* which recount the often-bawdy and hilarious tales told on a religious pilgrimage to the church of Canterbury. The English, being every bit as licentious as the Italians, also repeated the stories and thus learned how to speak English. Later, Shakespeare imported the sonnet of Petrarca into English. Your literate English is in large measure Italian, a sort of grandson of Dante's Italian. Later, the Christian humanist figure Erasmus of Rotterdam inspired his student, François Rabelais, to do for France what was done by Boccaccio for Italy and Chaucer for England. Thus was born the astounding character Gargantua, and with it, the French language. Gargantua explains to the French population, for example, thirty or forty ways in which the posterior may be wiped, finally settling on the warm neck of a goose, as the best means. You can bet that this story got repeated all over Paris. And in Spanish, we have the great example of Don Quixote, the Knight of the Sad Countenance, and his sidekick, Sancho Panza, a peasant and proud of it, who later on gives up being Governor of an Island in order to get a good meal.

In this way, languages, created by poets, lifted up the populations that had been dominated by ignorance and thereby ruled over. In fact, the nations were created by the languages, not the other way around.

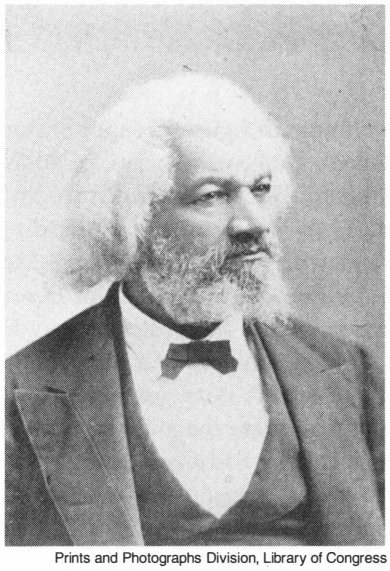
The same project was carried out in the field of music.

Musicians hear, not a particular language, but the music of language itself, its prosody. Brahms and Dvořák, among others, were able to hear in this way. The idea that such a universal experience of hearing language is possible, was attacked in a recent piece that appeared in the The New York Times written by Richard Taruskin. According to Taruskin,

> As quoted by the critic Henry Krehbil, Dvořák urged that his pupils submit the indigenous musics of America, namely Indian melodies and Negro spirituals, "to beautiful treatment in the higher forms of art." . . . But as usual, what is most significant about this prescription is what it allowed to go unsaid. The "higher forms of art" that would justify and canonize the national were themselves considered not national but universal—or, to put it as a modern linguist would, "unmarked." Yet they were national all along. They were German. Mrs. Thurber's Conservatory, like all nineteenth century conservatories outside the German-speaking lands, was an agency of musical colonialism. Dvořák was brought in to direct it not as a Bohemian or a nationalist, but as a master of the unmarked mother tongue.

For those who might not know, this is completely opposite to the way that Dvořák is usually described—which is, in fact, as a "multiculturalist." What causes this writer's concern is, that there is a body buried which he hopes we don't discover. It is the still-living—faintly breathing, but living—presence of the transmission of Classical culture to the shores of America.

Actually, there is nothing controversial in Dvořák's advice. Bach used folk themes and popular songs in his



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Like Brahms and Dvořák, **Frederick Douglass** *(left) certainly did not come from the elite of society. His story is well known; what is not well known, is that he was an accomplished amateur violinist who learned to play while still a slave. Douglass' sons* **Lewis Henry Douglass** *and* **Charles Redmond Douglass** *(right), like their father, fought for the freedom of their country in the War of the Rebellion.*

Moorland-Springarn Research Center, Howard University

Moorland-Springarn Research Center, Howard University

Douglass' grandson **Joseph Douglass** *(left) was an accomplished concert violinist. He and his father often performed pieces by Mozart, Haydn, and Schubert together for recreation. He was trained at the New England Conservatory of Music, and then went to Europe. In 1893, when twenty-four years of age, he played at the White House for President Grover Cleveland. Joseph Douglass performed with his friend Will Marion Cook at the 1892 Chicago Exposition, appearing together with his grandfather, who made a speech against the multicultural bias of the Exposition and its "Colored People's Day," "Bohemian Day," "Indian Day," etc. Will Marion Cook was trained by Joseph Joachim, the virtuoso violinist who was Brahms' closest associate in Vienna.*

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music all the time. "Jesu, Meine Freude," for example, is taken from a bar song, "Leise, Meine Freude." Haydn and Mozart both wrote several such compositions. Beethoven wrote over two hundred songs set to Irish, Scottish, and Welsh texts, as well as piano and flute variations set to Russian, Tyrolean, Scottish, and other themes.

Franz Schubert made great music accessible to every household with a piano by perfecting the art song, or *lied,* which had been invented by Mozart (Bach and Haydn had written precursors to it). Schubert wrote over six hundred such songs, and was followed by Schumann and Brahms.

Brahms extensively utilized folk songs and themes as, for example, in his *Hungarian Dances.* Dvořák did the same with his *Slovenian Dances.* There was never a break, in short, between Classical composition and the transformation of popular music through its laws, because these musicians were engaged in the same language project that the poet Dante had involved himself in. They studied poetry and wrote music to elevate us, to improve us, because that is the nature of the artist: He is us at our best.

It was simply this that Dvořák recognized in his discussion and collaboration in America with the singer

Harry Burleigh, who performed scores of spirituals for Dvořák, saturating him in this music. Let us now explore how the Classical compositional method was transmitted to America.

Brahms' Compositional Method

Let us begin with Brahms' "Wiegenlied" ("Lullaby") (SEE Figure 1). This piece was written before Brahms had gone to Vienna. He had met a singer from there by the name of Bertha Porubszky, who performed many of the songs of the countryside for Brahms, and composed the song in honor of her marriage to Arthur Faber. He set this song to utilize a particular rhythmic motif that was used in this music. This is heard in the piano accompaniment, in which the gentle off-beat motion in the voices played by the pianist's right hand, is contrasted to the steady motion in the left-hand voice.

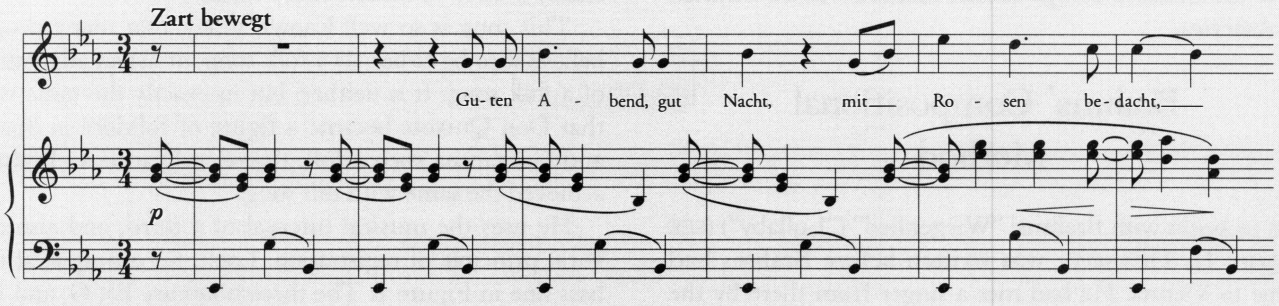
This song is so well known today, that many people believe it to be either (1) a folk song, or (2) an adaptation of a folk song. It is neither; but in exactly the same way that Don Quixote became a figure of folklore in Spain, and Gargantua such a folk figure in France, so Brahms achieved the same with this song.

He uses the musical interval of a third, and also the vocal principle of registration. Look, for example, at the bass line in Figure 1. The three notes are E♭, G, and B♭. Rather than having these notes played in the same vocal register, Brahms places the E♭ in a low "basso profondo" register, after which the G moves to the very top of the bass' regular "chest" register. The singer, too, opens with a third between "*Guten*" and the first syllable of "*Abend.*"

Jeanette Thurber, *head of the National Conservatory of Music in New York, successfully had legislation passed in the U.S. Congress in 1891 to commit the nation to a program of Classical culture which was to be led by Dvořák as the director of a national school of music. The school was to be located in Washington, but was never built. (Reprinted with permission from "Dvořák in America, 1892-1895," edited by John C. Tibbetts. Photograph courtesy of the Onteora Club Library. ©1993 Amadeus Press.)*

Harry Burleigh *(left) taught spirituals to Dvořák, who saturated himself in the music and then wrote his own themes based on them. Burleigh's grandfather,* **Hamilton Waters** *(above), who had been born a slave in Maryland, became a captain on the Underground Railroad. No doubt, Burleigh conveyed to Dvořák more than a simple musical sense of the content of the spirituals. (Reprinted with permission from "Dvořák in America, 1892-1895," edited by John C. Tibbetts. Photograph courtesy of Harry T. Burleigh, II. ©1993 Amadeus Press.)*

FIGURE 1. *From Johannes Brahms, "Wiegenlied."*



The first note of the interval is repeated twice, but is rhythmically different from the piano accompaniment.

When the song is sung in English, this difference is often obliterated. In this case, the notes sung are usually G-A♭-B, as in Figure 2, which actually never appear in the piece. Also, in such arrangements the singer usually enters before the first note of the piano is played, thus giving us a clearly different voice entry. Contrast this to Brahms's original setting in Figure 1, where we have three distinct voices: the bass line, the treble line, and the singer, all of whom sing the interval of a third.

The text of the song is taken from a collection of poetry known as *Des Knaben Wunderhorn.* This was a popular album of poetry based on folktales of the time.

We see a second example of the use of folk music in the first intermezzo Op. 117 in E♭ (SEE Figure 3), which is in the same key as the "Wiegenlied." Here, a text appears at the top of the score, marked: "From Herder's Scottish Folk Songs":

> Sleep softly, my child, sleep softly and beautifully;
> It pains me much to see you cry,

so that the melody would be sung as in Figure 4. Here we see the way in which a poetic text can be used as a "model" or *motiv,* to stimulate the musician. It also demonstrates the vocal root of so-called instrumental music, and we should hear a "song without words." This

FIGURE 2. *English version of Brahms' "Wiegenlied."*

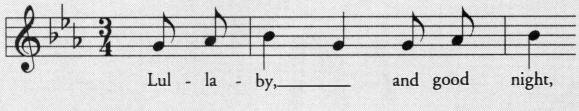


FIGURE 3. *From Johannes Brahms, first intermezzo, Op. 117 in E♭.*

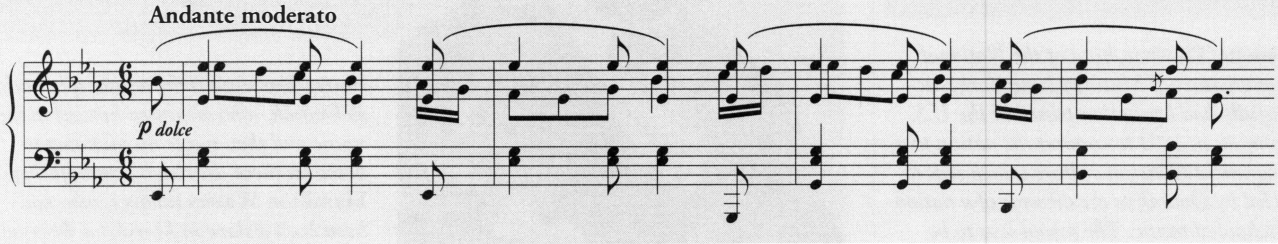
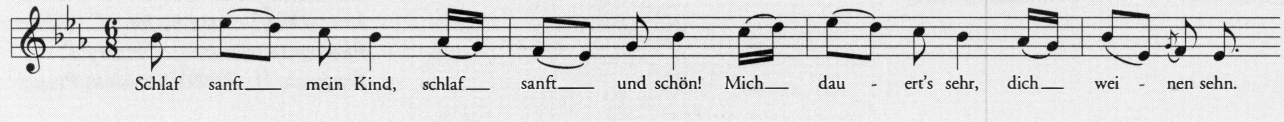


FIGURE 4. *Melody from Brahms' first intermezzo, Op. 117 in E♭, set as a song.*



idea of "song without words," points to that place where language originates before it is spoken, to the thought-object of language. Edgar Allen Poe referred to this as "unthought-like thoughts which are the souls of thought."

Our third example is the song "Nachklang" ("Echo") written by Brahms, and the beginning of a song that immediately precedes it, called "Regenlied" ("Rain Song"). What we wish to here show is the way in which the composer uses intervals to accelerate the rate of development in a composition. Let us look at the text in Figure 5. The piece begins with a repeated C♯. This C♯ is a pivot around which the poetic action is initially shaped. Look at how far our line rises and falls. It rises to an F♯, a fourth above the C♯, on the word "*aus*" ("out") and falls to a G♯, a fourth below C♯, on the second syllable of "*fallen*" ("fall"). Even where it falls lower, to F♯, Brahms repeats the G♯ twice on "*grüne Gras,*" the first time a note is repeated other than the C♯. He does this to emphasize the interval.

Other intervals are contained within this interval. But there is a higher order to this, which I want to show by looking at the two lines of poetry:

Regentropfen aus den Bäumen
Fallen in das grüne Gras

Raindrops, out of the trees,
Fall onto the green grass.

The first word of each line is set with a repeated tone: the word "*Regentropfen*" has a C♯, and the word "*Tränen*" has a D. They are a half-step apart. Now look at the cadence in the piano (SEE Figure 6). There we have a C♯ in the voice played by the left hand, and then the right hand plays D immediately on top of the C♯. This pulls the message of the two lines of poetry into a single instant. It creates a singularity using the half-step, the smallest possible interval, to do so.

This has the effect of a shock wave, into which we are accelerated in measures 12-15 in Figure 5. There, on the words "*machen mir,*" we have the tones D-D-C♯, which bring to mind both the words "*Regentropfen*" and "*Tränen.*" This is also a half step. Then, we have the fourth, the interval, combined with the half-step interval, in the tones C♯-F♯-A-G♯ on the words "*die Wange naß.*"

Yet, this is only a negative representation of what is occurring. These are, perhaps the footprints—and, I hope, not the muddy footprints—of the musician's attempt to capture the spirit of the poet.

Brahms uses this theme in the third movement of the Sonata in G Major, Op. 78 (SEE Figure 7).

Our next example is from the first movement of the same piece (SEE Figure 8). This theme appears in the beginning of the "Regenlied," the song that immediately precedes "Nachklang" (SEE Figure 9), where the same interval-sequence, C♯-B-A-F♯-C♯ is repeated, first in the "mezzosoprano" voice in the piano's right hand, and then in the lowest "bass" voice played by the left hand.

FIGURE 5. *From Johannes Brahms, "Nachklang."*

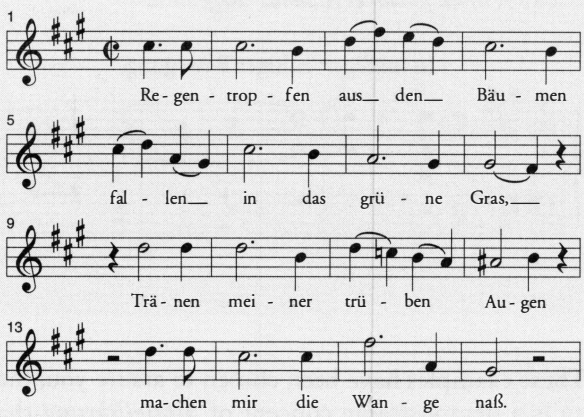


FIGURE 6. *From Johannes Brahnms, "Nachklang."*

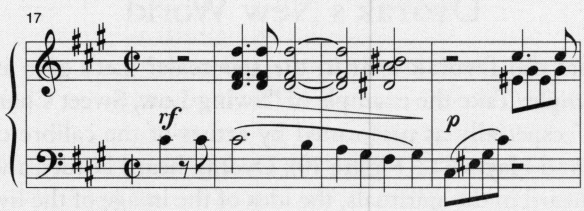


FIGURE 7. *From Johannes Brahms, Sonata in G Major, Op. 78, third movement.*

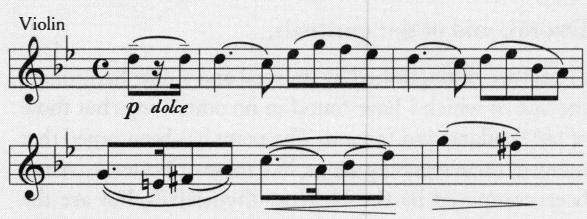


FIGURE 8. *From Johannes Brahms, Sonata in G Major, Op. 78, first movement.*

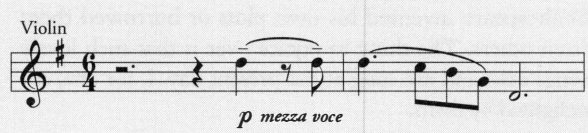
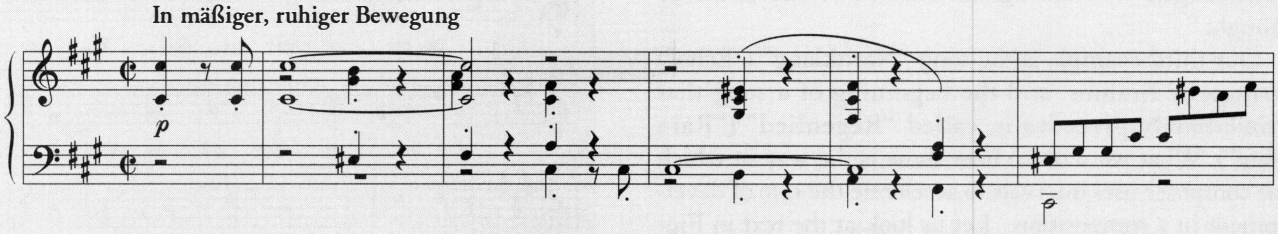


FIGURE 9. *From Johannes Brahms, "Regenlied."*



These examples have been chosen to assure you, that there is a demonstrable concept of *Motivführung* that runs through this work. Readers should work out the second movement for themselves; it's there, too.

Dvořák's New World

What did Dvořák hear in the spirituals? Let's give an example. Take the example of "Swing Low, Sweet Chariot," especially as performed by artists of the calibre of Roland Hayes (SEE Figure 10). Dvořak heard beauty, and he heard in the spirituals, the idea of the image of the living God. For that is the content of the spirituals. They can be sung properly only if that is in fact what they convey. Compare this with the opening of the Ninth Symphony of Dvořák ("From the New World") (SEE Figure 11).

Dvořák said of the spirituals,

> [They] are distinguished by unusual and subtle harmonies, the like of which I have found in no other songs but those of old Scotland and Ireland. The point has been urged that many of these touching songs, like those of Foster, have not been composed by the Negroes themselves, but are the work of white men, while others did not originate on the plantations, but were imported from Africa. It seems to me that this matters but little. . . . Whether the original songs which must have inspired the composers came from Africa or originated on the plantations matters as little as whether Shakespeare invented his own plots or borrowed them from others. The thing to rejoice over is that such lovely songs exist and are sung at the present day. I, for one, am delighted by them.

It was the singer and instrumentalist Harry Burleigh, Dvořák's friend, who sang the spirituals for him. According to Burleigh, Dvořák "literally saturated himself with Negro song. . . . I sang our Negro songs for him very often, and before he wrote his own themes, he filled himself with the spirit of the old Spirituals."

This is clearly established by listening to the theme shown in Figure 11. We may hear in the theme, "Swing Low, Sweet Chariot," or we may hear something a bit different, for example Schubert's Fifth Symphony (SEE Figure 12). We are hearing either, or both, or neither—because it is the intervals and the use of them, powered

FIGURE 10. *From "Swing Low, Sweet Chariot," arrangement by Harry Burleigh.*

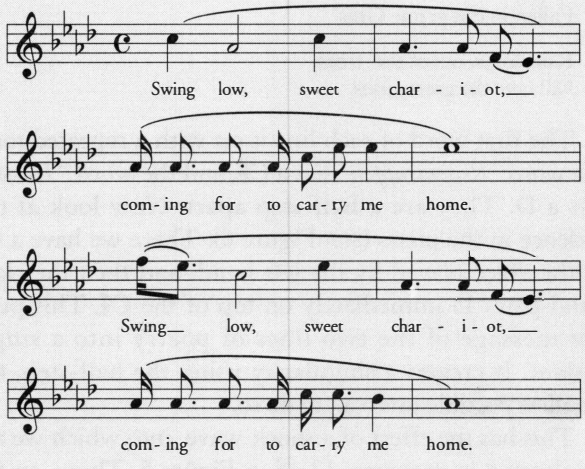
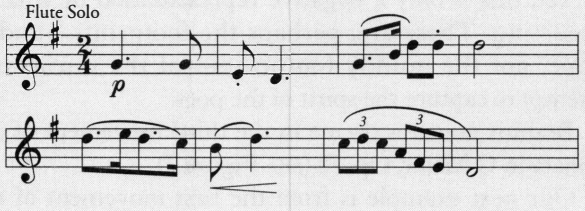


FIGURE 11. *From Anton Dvorák, Symphony No. 9 ("From the New World"), first movement.*



by a singular poetic idea, that is distinctive.

We cannot investigate this thoroughly at this point, except by way of another example, from the second movement of the "From the New World" symphony (SEE Figure 13). Here, Dvořák achieves what Brahms achieved with the "Wiegenlied" and Rabelais and Cervantes achieved in their works. He writes a theme that, to this day, many think to be taken from the spiritual called "Goin' Home." In fact, *the words were written after Dvořák's music,* not the other way around.

By the way, the translation into Czech of "New World" is Novy Svet, which in Dvořák's time was the popular name of a village-like area at the outskirts of Prague, where people came to listen and dance to folk music. This may explain why Dvořák despite the fact that many in America and Europe who were music critics couldn't seem to understand why he called the symphony "From the New World," nevertheless any local Czech villager would have had no problem understanding it.

Whatever his limitations as a composer, Dvořák had an understanding of the Classical method of composition and conveyed that to his students as practiced by Brahms, and conveyed via Brahms from Bach through Beethoven and Schubert.

One notices, in reading most Classical musical scores, that the entire language of music is Italian. That is a tribute to the earlier language project successfully carried out by Dante and his followers, which created a society and civilization that sang as none before it had sung.

Dvořák had said,

> It is to the poor that I turn for musical greatness. The poor work hard: they study seriously. Rich people are apt to apply themselves lightly to music, and to abandon the painful toil to which every strong musician must submit without complaint and without rest. Poverty is no barrier to one endowed by nature with musical talent. It is a spur. It keeps the mind loyal to the end. It stimulates the student to great effort.

Thus it was natural for him to seek to convey the best of himself and of universal culture to those whom he met who best represented, in their struggle for freedom and the inalienable rights of man, that universal culture.

FIGURE 12. *From Franz Schubert, Symphony No. 5, first movement.*

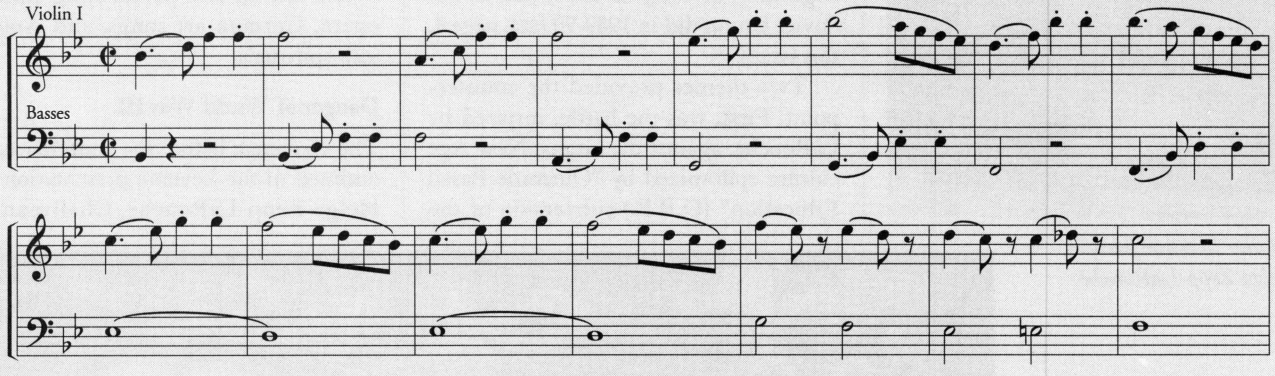
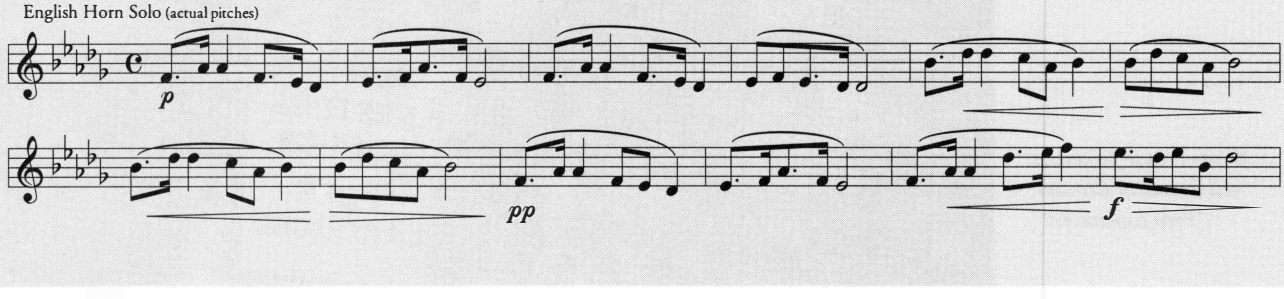
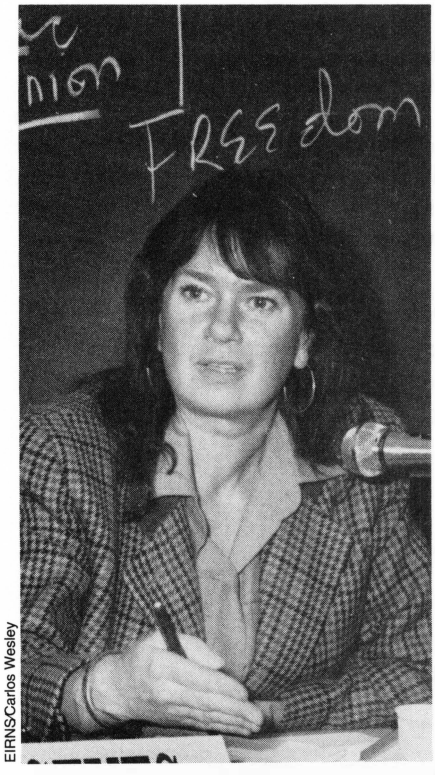


FIGURE 13. *From Anton Dvořák, Symphony No. 9 ("From the New World."), second movement.*



Schiller Institute Conference

'History as Science'— Get the Devil Out of Davenport!



EIRNS/Carlos Wesley

Schiller Institute founder Helga Zepp-LaRouche.

Assembled under a banner reading "History as Science—Get the Devil Out of Davenport!" the Schiller Institute and the International Caucus of Labor Committees—the philosophical association founded by Lyndon H. LaRouche, Jr.—met in northern Virginia on Sept. 4-6 for their annual Labor Day conference.

The primary subject was LaRouche's latest book-length essay, "History as Science: America 2000" (published in the Fall 1993 issue of *Fidelio*), in which the jailed American statesman warns, as he reiterated in keynote remarks delivered to the conference by audiotape, that the United States could disintegrate beginning as early as 1996, just as the Soviet Union did in 1989-90 [SEE page 4, this issue].

Two themes provided the counterpoint. First, was the battle, inspired by LaRouche, against the satanic New Age culture epitomized by "Outcome-Based Education" (O.B.E.) subversion of the schools, and the suicidal decision of the citizens of Davenport, Iowa against building levees to contain potential Mississippi river flooding—because such levees threatened the riverboat casino-gambling business.

Second, was the urgent necessity to free LaRouche from prison, where he has been held as a political prisoner since January 1989. A candlelight vigil demanding LaRouche's freedom was held at the White House during the conference. The vigil was followed by a lovely concert of Classical music at the Bible Way Temple in Washington, D.C., with Metropolitan Opera baritone Robert McFerrin and pianist Sylvia Olden Lee performing Italian opera, German art songs, and American spirituals.

Danger of World War III

The challenge before the conference, as outlined in the keynote presentation by Helga Zepp-LaRouche, Chairman of

White House protesters tell President Clinton: "Free LaRouche!"

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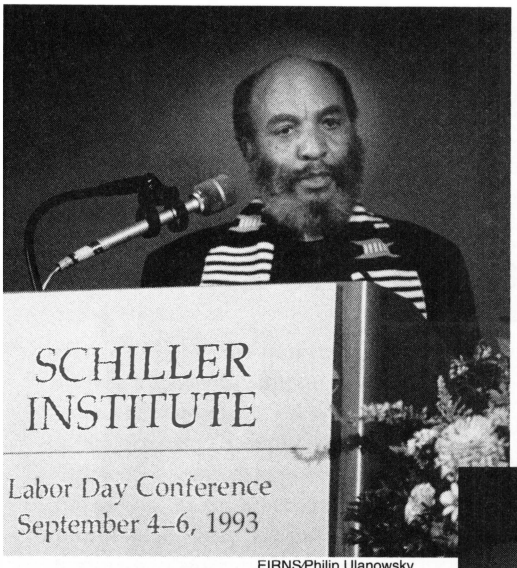

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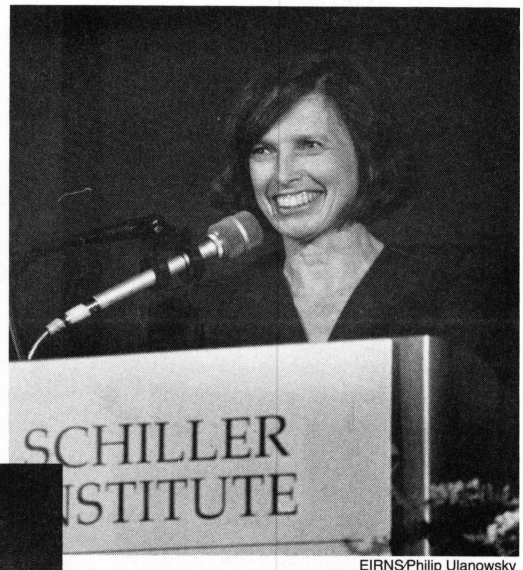

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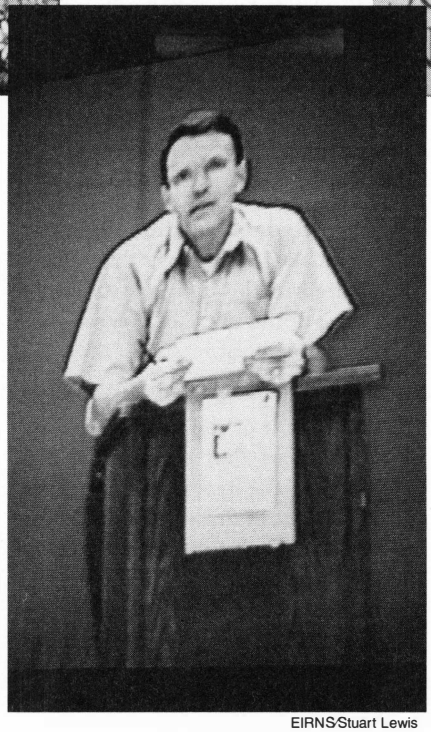
Virginia gubernatorial candidate Nancy Spannaus (right) and Rev. James Bevel (left) call for action against Outcome Based Education (O.B.E.). Below: Political prisoner Michael Billington lectures by video tape.



EIRNS/Stuart Lewis

the Schiller Institute and LaRouche's wife, was to "establish an exact understanding of what the nature of the strategic and historic crisis is, what the absolutely crucial role of this organization is, in this historic moment, and what the possible pathways are in order to avoid the now-visible disaster."

Mrs. LaRouche called for her husband's freedom in the month of September, as the "signal of a change in U.S. policy" that is required to prevent World War III.

"We have warned during the last months," she said, "that the non-action of the West in the face of the Serbian aggression and the genocide against the Bosnian people would lead to the potential danger of World War III; that is exactly what we are on the verge of right now." What we are facing, for instance in the growing conflict between Russia and Ukraine, she said, is "several years of the horrible, bloody Nemesis of destruction, of a global Thirty Years' War of which Bosnia would only have given us a foretaste."

But in the horrible fate of Bosnia-Hercegovina, she said, we have "the straw which will break the camel's back." "I believe that this genocide was—and is—so horrible and such absolute proof of the failure of the political system which governs this entire century, that it will lead to the revelation of the truth; and that the ugly face of geopolitics, of British colonialism, of oligarchism, of the balance-of-power crisis management and the idea of running the world through 'splendid little wars' on the back of innocent people; the rotten image of man that goes with oligarchism; the ugly face of British liberalism—all this will become public knowledge, and it must become public knowledge!"

To thus "blow apart the myth of the twentieth century"—to tell the truth about the underlying causes of World War I, and hence World War II, in the oligarchy's pursuit of the geopolitical strategies of the British Empire—is, she said, the "absolute precondition for mankind to survive."

Conference Highlights

• A message to the conference from Dr. Nedzib Sacirbey, Personal Representative in the United States of the President of the Republic of Bosnia and Hercegovina, urged Americans to act now to stop the genocide ongoing in Bosnia-Hercegovina.

• Two tape-recorded messages from Lyndon LaRouche's fellow political prisoners, Michael Billington and Rochelle Ascher, provided the emotional highpoint of the conference.

Billington, who is serving an outrageous seventy-seven year sentence in prison in the Commonwealth of Virginia, participated in a conference panel with an hour-long videotaped speech on "Confucianism and *Imago Viva Dei,*" in which he summarized material on Chinese history and philosophy originally developed in his ground-breaking essay published in the Summer 1993 issue of *Fidelio.*

Rochelle Ascher, also confined in a Virginia prison, sent an audio tape, in which she quoted St. Augustine: "If through fear of persecution you lose the Kingdom of Heaven, how then will there be any men through whom your wavering may be removed?" She, too, called for LaRouche's freedom, "to save the world before it is too late."

• Opposition to Outcome-Based

Continued on page 64

RESOLUTION
In Support of a Christian-Judaic-Islamic Ecumenical Policy for the Middle East

The following resolution was unanimously approved at the September 4-6 international conference of the Schiller Institute.

WHEREAS, we take note of the fact that there are those in the Northern Hemisphere, in the Anglo-American powers, spilling into continental Europe, and also including Russia, among whom there is a tendency to say, "We need an adversary. Let's define Islam as the adversary, and let's all get together and have a good shooting match against Islam"; and

WHEREAS, these same forces are proposing to drive the Islamic populations crazy, by oppressions and atrocities, such as those the British have perpetrated, with some French and other assistance, in the Balkans, in support of the Serbians, and by that, are creating the adversarial rage on the side of Islamic populations, which will make for a British-style "merry old war" which can escalate into World War III; and

WHEREAS, this cannot be prevented by trying to resolve the theological differences between Islam and Christianity, but rather, by proceeding as did Nicolaus of Cusa in his "On the Peace of Faith" ("*De Pace Fidei*"), to declare as the point of principle of departure, a peace of God, an ecumenical peace between Christianity as Christianity, and Islam as Islam, which would also include, specifically, Mosaic Judaism and Judaism as such; and

WHEREAS, we identify the recent agreement between Israeli Foreign Minister Shimon Peres and Palestine Liberation Organization Chairman Yasser Arafat, which we presume will be supported by persons of good will from nominally Christian nations and others at this time, as exemplifying that principle, and deplore all efforts to create a Christian-Judaic-Islamic military confrontation; and

WHEREAS, the nations of the world must base their politics, rather, on several principles, which should be the basis of a dialogue, to wit:

- the sacredness of the individual personality on the basis that man is created in the image of God, by virtue of the spark of potential for development of reason in the individual person;
- on account of the need for development of that individual, the family as the institution for primary nurture of that individual is also protected, obviously, by natural law, from willful incursions by the state or other agencies, just as the life of an individual person cannot be eliminated for the convenience of a state;
- the state itself, the sovereign nation-state—through which the reason of the individual participates in the affairs of mankind, through which a rational deliberation of a people together, over their own affairs, occurs—is also a sacred institution;
- thus peace is uniquely based on recognition of the sacredness, the divinity or sacredness of the individual; the implicit sacredness of the so-called nuclear family as the institution, as the unit of nurture; the responsibility or sacredness of the sovereign nation-state, admittedly a new institution, but one which has proven essential to society; and the responsibility of the state to protect the individual, to provide for an education appropriate to the cognitive principles of reason, and to protect the nuclear family as an institution from all attempts to disrupt it; and

WHEREAS, all these states, and people forming such states, must come into an ecumenical agreement, on the basis of these common principles: to cooperate with each other for the defense of a society, of a planet, characterized by these institutions; to defend these institutions, and such cooperation, against all forces which are hostile to the sacredness of individual life, to the sacredness of the nuclear family, to the essential necessity for the sovereign nation-state and its sovereignty; and for the cooperation among such sovereign nation-states which share these principles; and

WHEREAS, we take note of the fact that His Holiness, Pope John Paul II, as exemplified in such instances as his visit to Sudan, and in his expressed concern for the well-being of the Muslim population, and specifically the victims of Serbian aggression in Bosnia-Hercegovina, has taken steps, together with other elements of the Christian Church, toward such a dialogue;

THEREFORE, be it resolved by this conference, assembled near Washington, D.C. on September 6, 1993, to spark the kind of secular ecumenical cooperation which is so needed to avert worse horrors than already exist on this planet today.

LaRouche Hails PLO-Israeli Accord: Development Needed To Stop Bloodshed

The economic development proposals contained within the draft agreement worked out by the Palestinian Liberation Organization and the Israeli government, contain the seed for "overcoming the bitter harvest of bloodshed, anger, and rage which has been built up over the decades so far," in the Middle East, said Lyndon LaRouche in comments on the Yasser Arafat-Shimon Peres agreement to the Labor Day Weekend Schiller Institute Conference. LaRouche insisted on the importance of these accords, precisely because they contain the *economic* basis necessary to overcome decades of war. This approach, which LaRouche himself pioneered during the 1970's in correspondence with Israeli and Palestinian political layers, has become known as the "Oasis Plan" for Middle East development.

According to LaRouche, "Without an economic development agreement as the foundation of negotiations between Palestinians and Israelis, there is no possibility of a worthwhile agreement of any sort." He characterized as "stubborn folly" the attitude adopted by many on both sides of the conflict that a *political* settlement had to be reached *before* any talk about economics was possible, because "unless you establish a fundamental common interest between Israelis and Palestinians, a recognition of a common interest among two distinct, sovereign nations, you can have no durable basis for overcoming the bitter harvest of bloodshed, anger, and rage which has been built up over the decades so far. Only that kind of economic development which transforms the entire region and brings such strength of joy that it overwhelms the accumulated bitterness, can succeed."

"Besides," LaRouche added, "if you keep the Palestinians in poverty, and if you do not provide optimism among Israelis for the benefits to cooperation, you will not have the spirit needed to maintain any kind of peace agreement."

LaRouche also warned that there would be forces opposing the accords. Former British foreign minister Lord Carrington, Henry Kissinger, and also "on the Russian side, those in the former KGB and related services, who were too close to the British intelligence services, will be very dangerous factors in trying to disrupt this. . . ." He also warned that terrorist "friends of the Anti-Defamation League (ADL)" would attempt to spark bloodshed also.

LaRouche's Plan

LaRouche's advocacy of economic development as the only basis for peace in the Middle East region goes back to the 1970's. In August 1977, he published an article in the Paris newsletter *Israel & Palestine* under the headline "A Future For the Middle East," in which he stated: "The objective basis for a Middle East settlement is the economic-development package we have indicated. Any other approach will fail, will be quickly degraded into farce—and probable war. However, it is not mere material advantage in itself which provides the basis for peace. It is the fact that a commitment of the governments to realize high rates of scientific and technological progress fosters humanist outlooks."

That article was one of a score of published writings, confidential policy papers, and detailed programs that LaRouche and his associates produced beginning 1975. In the 1986 period, when then-Israeli Prime Minister Shimon Peres was promoting a new Marshall Plan for the region, LaRouche provided a series of detailed blueprints, which included many of the substantive economic programs now in the process of being forged between Israel and the P.L.O.

During his 1990 campaign for Virginia's 10th Congressional District seat, LaRouche issued a white paper entitled, "A Peace Plan in the True Interests of Arabs and Israelis," detailing his proposals, in particular for regional infrastructure (water, energy, and transportation) development projects, linking these to his call for a Paris-Berlin-Vienna "Triangle" of European economic expansion launched as a locomotive for world economic recovery.

Since the mid-1970's, Lyndon LaRouche has campaigned for Mideast peace based upon economic development of the region.

EIRNS/Philip Ulanowsky

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Above, left: Institute vice-president Amelia Boynton Robinson. Above, right: Baritone Robert McFerrin.

Constitution Hall Concert Honors Civil Rights Movement

The celebration of the thirtieth anniversary of the historic 1963 March on Washington might well have been history repeated as farce, were it not for the beautiful "Musical Celebration" sponsored by the Schiller Institute—the "opening shot" of the weekend's events—which filled Constitution Hall with close to 3,000 people on Friday evening, Aug. 27.

Institute vice-chairman Amelia Boynton Robinson, a seminal figure in the Civil Rights movement who opened the concert, had proposed such an event—celebrating both the anniversary of the March on Washington and the late Marian Anderson's struggle to open Classical music to African-Americans—as a necessary corrective to the "official" commemoration, which was directed out of the National Education Association building and featured "gay rights equals Civil Rights" as a central theme.

The concert was performed throughout at the so-called Verdi pitch of middle C = 256 Hz. It featured the works of Antonin Dvořák, who worked in the United States from 1892 to 1895, and Dvořák's mentor Johannes Brahms. Dvořák taught black American composers such as Harry Burleigh to apply to spirituals the compositional method which Brahms used to transform the folk songs of Germany into art songs.

Baritone Robert McFerrin, who with his debut at the Metropolitan Opera in 1955, broke the color barrier to the performance of Classical music along with Marian Anderson, was the featured soloist, performing works of Schubert and Verdi, and spirituals first arranged for McFerrin by the great Hall Johnson.

In addition to McFerrin, sopranos Regina McConnell and Elizabeth Lyra Ross, and mezzosoprano Hilda Harris, sang on the program, as did four young black singers—tenor Gregory Hopkins, baritone Reginald Pindell, and sopranos Detra Battle and Melinda Young.

Accompanying the singers were pianist and vocal coach Sylvia Olden Lee, and concert pianist and scholar Dr. Raymond Jackson.

Much More Than a Concert

The three-hour program was billed as a "Musical Celebration of the Struggle to Secure the Inalienable Rights of Man," and was much more than a concert. District of Columbia Mayor Sharon Pratt Kelly sent greetings to the Celebration, identifying the unique importance of the event: "In these times of crisis, this showcase of leading artists performing the traditional repertoire of Ms. Anderson, as well as Roland Hayes and others, will provide inspirational role models for us all and especially our young people."

That the event was a gathering-place for the real leadership of the 1963

March on Washington was witnessed by the greetings presented, both in person and in the concert program, from those who led the 1963 effort.

The concert was opened with a surprise appearance by comedian and Civil Rights veteran Dick Gregory, who was in Washington for the Thirtieth Anniversary events. Speaking for nearly fifteen minutes, Gregory had the audience laughing at the banality of the "gay rights" commemoration theme, and at the grotesque state of race relations in America today.

Following Gregory, the Rev. James Bevel greeted the audience. Bevel was the initiator of the 1963 March on Washington, as Direct Action Coordinator for Dr. Martin Luther King, Jr.

Amelia Boynton Robinson, who just celebrated her 82nd birthday and has spent at least fifty of her eighty-two years in the Civil Rights struggle, spoke to enthusiastic applause about the necessity to continue that struggle: "The battle is still engaged," she said.

The commemorative concert program contained greetings as well from Wyatt Tee Walker, former Chief of Staff to Dr. Martin Luther King, Jr.; from Hosea Williams, former Field General of the Southern Christian Leadership Conference (SCLC); and from D.C. Senator Florence Pendleton. Greetings from leading musicians included sopranos Leontyne Price and Shirley Verrett, baritones Sherrill Milnes and William Warfield, and Dr. Willis C. Patterson, President of the National Association of Negro Musicians.

The concert opened with the audience singing two verses of the "Star-Spangled Banner," played by the Reed Elementary School Band, followed by "Lift Every Voice and Sing," known as the Negro National Anthem. These opening pieces, as well as an arrangement of Beethoven's setting of Friedrich Schiller's "Ode to Joy," "Va Pensiero" from Verdi's opera *Nabucco,* and Mozart's "Ave Verum," were sung by a 100-person chorus, including children, under the baton of John Sigerson. The large chorus combined the Schiller Institute chorus with the Nevilla Ottley Singers from Tacoma Park, Md., and volunteer singers from neighborhoods and churches all over the area, who are being trained weekly by Institute personnel in the *bel canto* singing method.

Remembering Marian Anderson

In 1939, Marian Anderson was denied performance use of Constitution Hall, which is owned by the Daughters of the American Revolution, because she was an African-American. In response, First Lady Eleanor Roosevelt arranged for Anderson to sing an open-air concert on Easter Sunday, April 9, 1939 on the steps of the Lincoln Memorial. The concert, attended by more than 75,000 Americans, became an historic tribute to the courage and moral strength of Miss Anderson, who passed away on April 8 of this year at the age of ninety-six.

The Schiller Institute's concert was meant not only to commemorate her great career, by performing some of the most memorable opera arias, German *lieder,* and spirituals of her repertoire, but to encourage youth to emulate her today. As Institute chairman Helga Zepp-LaRouche stated in her greeting to the event: "How sorely we need Marian Anderson's great example today, along with the greatest possible number of artists to tread in her footsteps! Indeed, many former associates of Dr. King, who lived through those days, assure us that the state of Civil Rights today is much worse than it was in the 1960's."

Lower Pitch Brings Out Beauty

An important feature of the concert was that it was performed at the "Verdi" pitch of C = 256 Hz. The Schiller Institute has been fighting since 1988 to establish C = 256 (A = 432) Hz as the standard international pitch, in which fight it has been joined by thousands of leading musicians worldwide. The resonant quality and richness of sound at the lower pitch were evident throughout the concert, particularly in the operatic selections.

The event, because it succeeded on so many levels in setting a metric for what is needed in these times of crisis—to make today, as Helga Zepp-LaRouche said in her greeting, a "true Renaissance"—has, by all accounts, created a leading place for the Schiller Institute in the cultural world of Washington, D.C. today.

EIRNS/Philip Ulanowsky

The performers receive a rousing, curtain call "thank-you."

LaRouche Elected to Russian Academy

On Oct. 14, Lyndon H. LaRouche, Jr. was elected a corresponding member of the International Ecological Academy of Russia, at a meeting chaired by Academy President Wolter Manusadjan, who is also a member of the All-Union Medical Engineering Research Institute. LaRouche was proposed for membership by Professor Taras Vasilievich Muranivsky of the Moscow State University for the Humanities, and strongly supported by Professor Bencion Fleischmann, who is a professor of mathematics in Moscow.

Muranivsky told the members of the Academy that LaRouche's work in physical economy represents a "new trend in world thought." Fleischmann said that after reading LaRouche's monograph, *So You Wish To Learn All About Economics?* in Russian translation, he had concluded that "this is the work of a real genius, a work full of original ideas—and originality is after all the most important positive influence on the work of the Academy."

Fleischmann added that even though many axioms asserted by LaRouche seem hard to accept, "we would like very much to discuss this with him directly." "LaRouche can be thought of as the father of a new direction in the natural sciences. . . . [He] is a figure of vast scale."

'Academy of 100'

The meeting was held at the Economic Academy of the Ministry of Economics of the Russian Federation in downtown Moscow. Members of the Schiller Institute from Germany, the U.S., and Russia attended as guests.

The International Ecological Academy was the first non-governmental scholarly society to be founded in the former U.S.S.R.—in Tallinn, Estonia, in 1989. It is also known as the "Academy of 100," because its by-laws limit membership to one hundred living persons, once this initial number have been elected.

As an organization, the Academy is devoted to the protection of the biosphere through the application of modern science and technology; several members have been associated with the Soviet and Russian space program. Members represent the fields of information science, mathematics, radiology, medicine, technical sciences, economics, philology, and psychology.

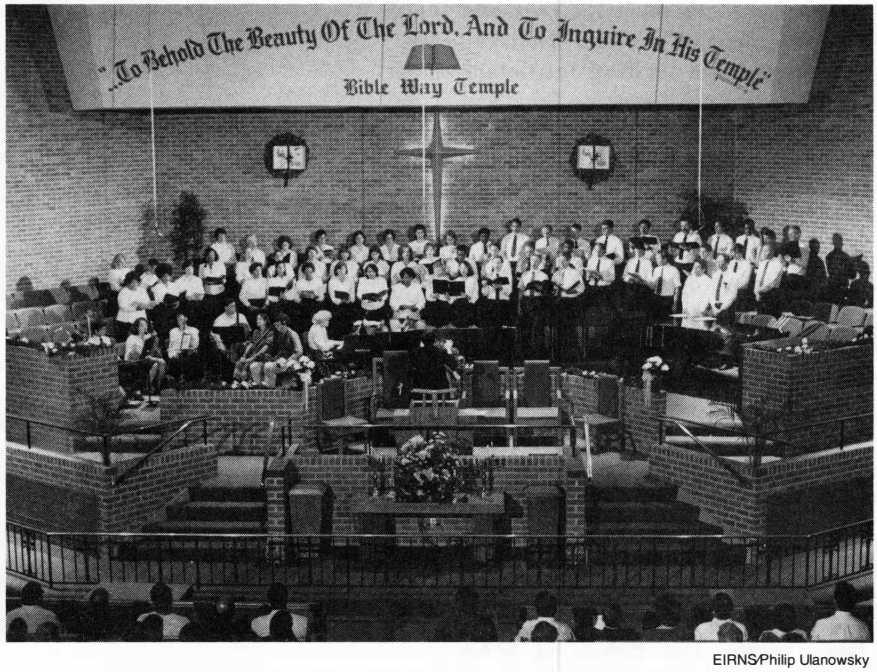
New members elected at the Oct. 14 meeting, along with LaRouche, include Andrei V. Orlov, currently Vice-Rector of the Economic Academy of the Russian Economics Ministry; also, an ophthalmologist who is an expert in the biophysics of human vision; a senior professor who has carried out research in semiconductors; a petroleum engineer from Siberia; and a professor of international relations who is Vice-President of the Academy of Diplomacy.

Conference

Continued from page 59

Education (O.B.E.) was expressed both in the speech of Virginia independent gubernatorial candidate Nancy Spannaus, who called it the "fulfillment of the Aquarian Conspiracy," the New Age rock-drug-sex counterculture; and also in the call by Civil Rights veteran the Rev. James L. Bevel, who urged the attendees to devote themselves full-time to ensuring that Outcome Based Education is defeated and LaRouche is freed.

• Conference panels elaborated the scientific, philosophical, historical, and artistic theses developed by LaRouche in "History as Science." A selection of these presentations appears in this issue of *Fidelio.*

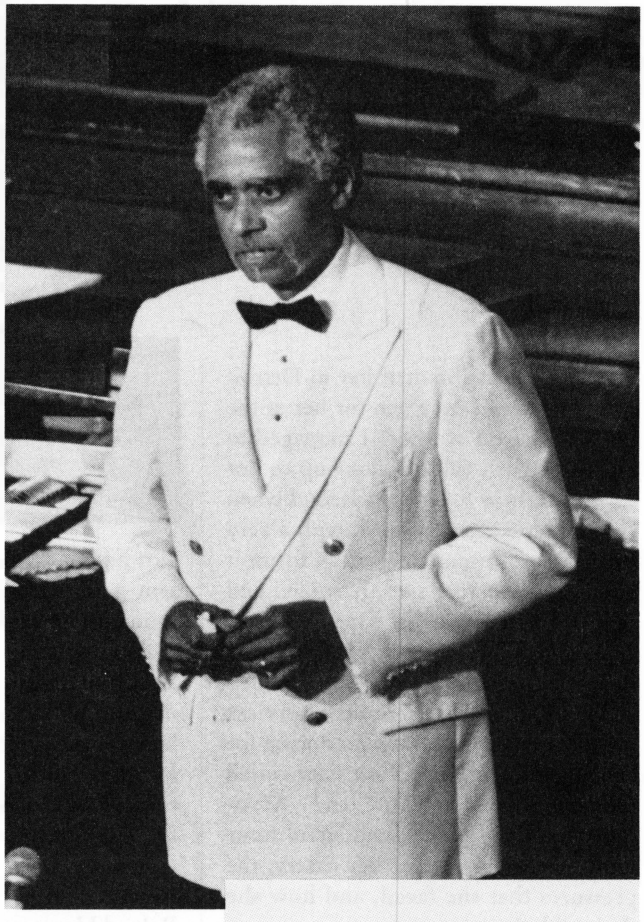


EIRNS/Philip Ulanowsky

Schiller Institute chorus, acompanied by Sylvia Olden Lee, opens the conference concert.

Tenor George Shirley

'You have to *translate* the composer and the poet'



George Shirley studied with Cornelius Reid in New York and debuted at the New York Metropolitan Opera in 1961, singing 189 performances there in twenty-seven roles over two decades. He debuted in 1966 at Glyndebourne, in 1967 at Covent Garden in London, and at La Scala in Milan. His many recordings include Mozart's "Cosi Fan Tutti" and "Requiem." Formerly Professor of Voice at the University of Maryland in College Park, he now teaches at the University of Michigan in Ann Arbor and performs nationally. The following interview was conducted by Dennis Speed on May 29, 1993, after Shirley performed in a concert in tribute to Marian Anderson sponsored by the Schiller Institute at the Ebenezer United Methodist Church in Washington, D.C.

Fidelio: I'd like you to give us your view of the significance of Marian Anderson and of the singers who broke into this area of Classical singing in the United States.

Shirley: I think it always has great impact when individuals achieve success in an area of function in which they are not expected to achieve it, for whatever reason. So the significance of people like Marian Anderson, Paul Robeson, Roland Hayes, Sissieretta Jones, Elizabeth Taylor Greenfield, is just that they proved that they were more than capable of doing something that they were not expected to be able to do.

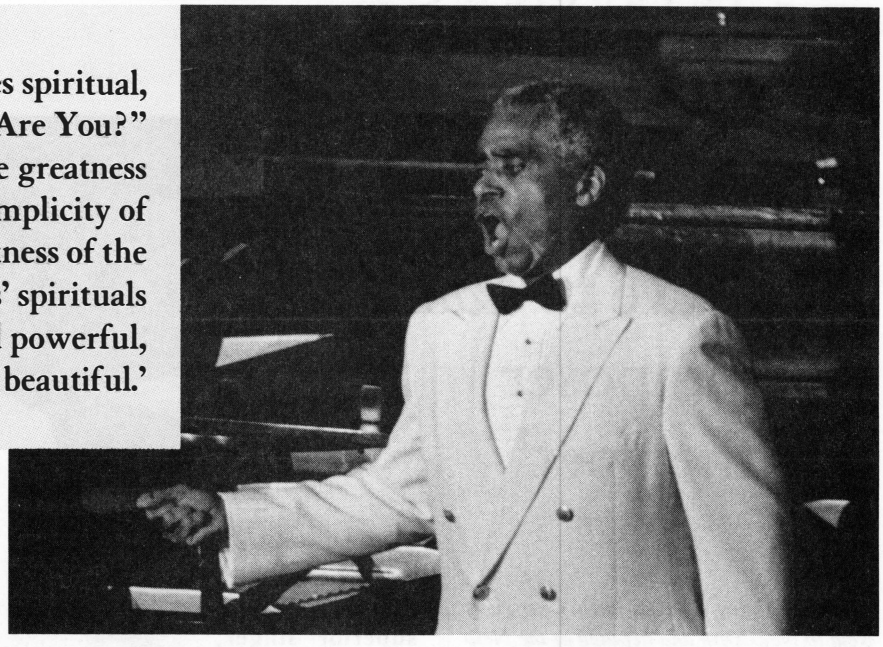
Marian Anderson not only showed herself to be a superior singer, superior interpreter of the works of European composers; she not only showed herself to be possessor of one of the greatest vocal gifts of probably all time; she also went beyond that: Her significance extended to the area of the spirit. She, like Roland Hayes, was one of the most spiritual people I've ever had the opportunity of meeting. There was a dignity about everything she did: the way she carried herself, the way she spoke, the way she sang, the way she was, that spoke much more loudly in a sense than her artistry.

When you were in her presence, you had the feeling that you were in the presence of something that went beyond just humanity. And for all who heard her, for all of us who were privileged to have met her, this was an influence that altered the way we existed, the way we responded to situations and people.

The first time I met her, I was in college, possibly still in high school, I can't remember, and I worked as a page for the Detroit Public Library. A women's

'If we present with dignity, so that what is communicated is truly uplifting—then we continue the legacy of Marian Anderson. To do that, we have to know who we are, because she knew who she was. She knew she was a child of God, and she carried herself in a manner that was true to who she was.'

'I sing the Roland Hayes spiritual, "Little Boy, How Old Are You?" because it mirrors exactly the greatness of a Schubert lied. The simplicity of construction, the directness of the message—no artifice. Hayes' spirituals in particular are lean and powerful, beautiful.'



organization had invited her to Detroit and there was a tea given for her at the branch where I worked. I managed to push my truck full of books up to her side. And there was a split second when she was alone and I leaped, with a very small piece of paper, and sort of thrust it at her and she very sweetly smiled and signed it. I still have that paper.

My next meeting with her came some twenty years later, when I invited her to come so that I could interview her for a series that I was producing for WQXR-FM in New York City called "Classical Music and the Afro-American." I spent a wonderful hour with her talking about her career, the pressures that she faced, and how she dealt with those pressures.

This woman, this great person, this great American exuded an aura that could not help but be respected. The whole area of dignity is one that we are sorely out of touch with today. We rarely see public figures reacting and acting in what can be termed, I think, a dignified manner. For African-Americans in particular, I think that genuine dignity and spirituality are fundamentals that must be reconstituted in the African-American community, in America in general, but especially in the African-American community. Because, historically, we are a people whose every move, every action is driven by something that is spiritually connected.

If we re-establish contact with who we are and use what we've been given through the arts, through music, through drama, through whatever, to aim high, and to present what we present with dignity, so that what is communicated is truly worth listening to, is truly uplifting—then we continue the legacy of Marian Anderson. In order to do that, we have to know who we are, because she knew who she was. She knew she was a child of God, and she carried herself in a manner that was true to *who she was.*

Fidelio: I believe that Marian Anderson, Roland Hayes, and other singers that we haven't mentioned, represented the finest expressions in the United States of what is generally referred to as Classical European culture. I just wanted to get your comments on what you think needs to be done to further break open the treasure chest, if you will, and to allow these people and to allow this kind of music to really be heard the way it should be heard.

Shirley: That's a very tall order in this society—the ability to identify quality. We have not done very much in terms of developing understanding in the American people of what constitutes quality. So it's sort of hard for young people to know what quality is.

It's very hard to go into the public schools today and present something, unless the children have been well-prepared to receive it. Last year I went to a career day at a public elementary school in Detroit, and I talked about my career. One of the questions that was asked by one of the youngsters was, "Do you sing rap?" Well, not *per se,* but I suppose one might think of recitative as being a kind of rap.

The ground, unfortunately, at that level is not being prepared, because of the fact that the arts are still seen by the public as of less than tertiary importance, when it comes to preparing the ground, preparing children. Children learn a tremendous amount of knowledge before they go to school through play, through music, through creating their own dramas, what have you. And then, when they get to school, they're told that they have to "get serious" and forget about all of that. The parents get up-tight because the children are not able to communicate, to compute. So they see that the only way to do that is to sit them down in a dry kind of atmosphere, and pound it into them.

Fidelio: It's called drill and grill.

Shirley: So, this whole thing of being able to identify quality gets lost, gets squeezed out. We don't know anymore what quality is. How to attack that problem? I wish I had an answer, because I think in attacking it you have to re-weave the warp and woof of this society.

Fidelio: Do you see spirituals as you've performed them today as being essentially correspondent to the Classical lied?

Shirley: Great lieder are honest. They're forthright. And the musical construct in which they live is one that highlights, supports, and never interferes with that honesty, that directness of communication of the message of the poetry. The spiritual is honest.

One of the reasons I chose to sing the Hayes spiritual, "Little Boy, How Old Are You?," is because of the fact that it mirrors exactly the greatness of a Schubert lied. The simplicity of construction, the directness of the message, no artifice. Hayes' spirituals in particular are lean and powerful, beautiful.

The connection is natural. That's the reason why the spiritual was included in the song recital. No flamboyance, to the point, great economy of means—all of those things that we appreciate and worship in great composers are embodied in the spiritual.

It's interesting, I sang once at a high school in California for a gymnasium full of kids and I did a wide variety of things. But the things that held them the most were those very simple, quiet presentations. One of the teachers said, "How do you do that?" I don't do it. If you have something to tell people, then they'll listen. It's so much better, so much more powerful, I feel, if that listening, if that message, is surrounded by what I consider to be the basic language of humankind, and that's music.

Music is a tremendously powerful force that is, I think, not well understood to be such by many in today's society. Because if they did, then the messages that that music is utilized to give would be different. Messages given through music stay in the consciousness. They are alternatives to thought. And that, I don't think, is as deeply appreciated as it should be.

I don't doubt that if the messages given through music were different, that society would be different, and that the consciousness of the listener would be higher. It's a hard message to get through to people. I think that some of the people who do understand it, and use it in what I consider to be negative ways, are very aware of what's going on, very, very aware of the effect, but they won't tell you that.

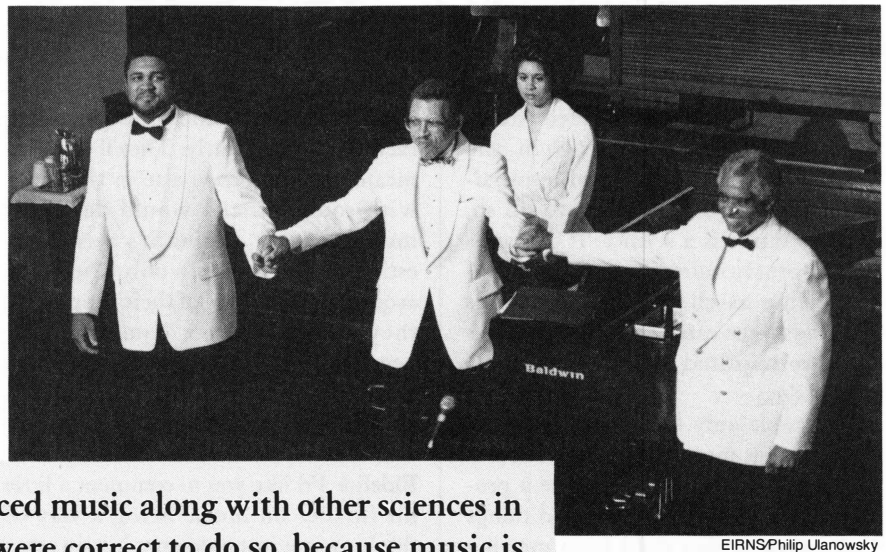
I'm not talking about subliminal messages. I'm talking about messages that hit you right between the eyes. I'm talking about rhythms that are warrior rhythms. I'm talking about sonorities that reflect the imbalance that exists to a frightening degree in the thinking of many of us in today's society.

Sometimes when I'm driving down the street and my car begins to bounce a few feet off the ground as someone approaches with a booming bass, I wonder, what would happen if that were indeed something that was very quiet and soothing and calm. I know how I react to music and I don't think I'm that different from others. In those situations where the bass is booming and the energy level is about 400 miles high, I know how I would feel if somebody bumped into my car, if somebody challenged me. Whereas, if it were something that I would identify as more soothing, I think that would effect the way I might respond in a situation like that.

What we're seeing today is a lot of response that can only be termed violent, senseless. I think a lot of it has to do with what people surround themselves with, the aura of sound and rhythm with which they surround themselves. Again, I think there are people who know the effects, who profit by it, and will attempt to continue to do so as long as they can.

Fidelio: What does it take to make a great artist?

Shirley: I was speaking with a young woman a little earlier, who is a piano major at Oberlin. We were talking about the fact that music is a tough taskmaster or mistress. We accept the fact that to be a great athlete you have to practice and it's interesting to see as we drive down the city streets, young men



EIRNS/Philip Ulanowsky

With his student Gordon Hawkins (left) and accompaniest Dr. Raymond Jackson, concluding the May 29 concert.

'The medieval university placed music along with other sciences in the Quadrivium. And they were correct to do so, because music is a science. It demands of the practitioner the same kind of discipline as chemistry or physics demands—the care. These qualities are required in anything that a person does.'

practicing all the time. They don't know they're practicing, but they're out there shooting hoops till the sun goes down and they're actually practicing, but they're *enjoying* it. They're having fun.

The same kind of practice goes into being a professional musician. And it's hard, but a musician enjoys it. There are times when you would like to be somewhere else, maybe shooting hoops, but you know that you have a concert coming up, so you have to shoot your hoops at the keyboard or with your voice or the horn. But it's exhilarating, hard work that prepares you, fills you, enables you to go out and do what you enjoy doing.

So the discipline of person that's required is something that one carries with oneself into other areas of endeavor as well. We were talking about the fact that medievalists placed music along with other sciences in the Quadrivium in the medieval university. And they were correct to do so, because music is a science. It demands of the practitioner the same kind of discipline as chemistry or physics demands—the care. These are qualities that are required in anything that a person does.

If people only understood that if a child studies music and works hard at it, that child may never become a professional musician, but the good things that accrue to that child from meeting the demands of the discipline are going to redound in positive ways in whatever else that child does with his or her life.

Music serves the purpose of uniting people in its performance. People in an orchestra, in a choir, have to be on the same spiritual, emotional wavelength, in order to make a performance happen. And if one can learn from this to establish those kind of contacts in other areas of being, where people need to work together, then one has acquired more than just what's required for musical performance. It's a way of thinking, it's a way of relating to other human beings.

Music feeds the spirit. Again, as I said before: To give a good musical performance, there's very little like it. It's a shame that in schools children are denied that possibility. I said before that I believe very strongly that music is the basic language of humankind.

'You have to translate the composer and the poet. You put the result in your own language, so that when you sing this lied that's been handed out two hundred years ago, you're not an empty shell reflecting what you've been given. You become the voice of the composer, the voice of the poet, and your own voice.'

You take two infants born of different races, from different parts of the world. Before they acquire the imposition of language, you put them in a room and they'll communicate with each other very clearly. They'll communicate with everyone else in the room with sounds that I would define as musical sounds. I think it's very interesting to note that it's only after they acquire the language of their people that they can no longer communicate, because they stop singing from the heart, they stop making sounds from the center of their being.

Fidelio: I'd like you to comment a little bit further on music being a way of thinking, not just notes, not just an art.
Shirley: Well, it is. It's a way of expressing your thoughts. For a composer, it's her or his unique way of saying something that is important to him or her to say. It is a language. For the performer, the exercise of acquiring that language, that's given you through the printed page, and of making it your own, is a very healthy exercise, a melding, if you will, of thoughts.

You have the composer, you have the poet, you have yourself. And, in the first two instances, you have to interpret, you have to translate the composer. You have to translate the poet. And put the result in your own language, so that you sing this lied that's been handed out two hundred years ago. You're not an empty shell reflecting what you've been given. You become the voice of the composer, the voice of the poet, and your own voice.

It's sort of like, in a certain sense, the "Erlkönig." You have to meld different personalities in your attempt to communicate the truth of this piece as you understand it. Because the piece has no life outside of your giving it life as a performer.

So it is a way of thinking. This must also be understood by parents, who wish to take music away from children.

Fidelio: I'd like to ask if you might have any comment on the recent concert by Minister Louis Farrakhan.
Shirley: I've known that he's a very fine violinist. I'm a person who would love to see something happen that will not happen because it's impractical: I'd love to see every politician in the world take up an instrument. And I'd like to see Congress make music. I'd like to see people go back to communicating with each other the way they did when they were first slapped on the behind and communicate through music and stop hiding behind words. I think that would be a lovely world to live in.

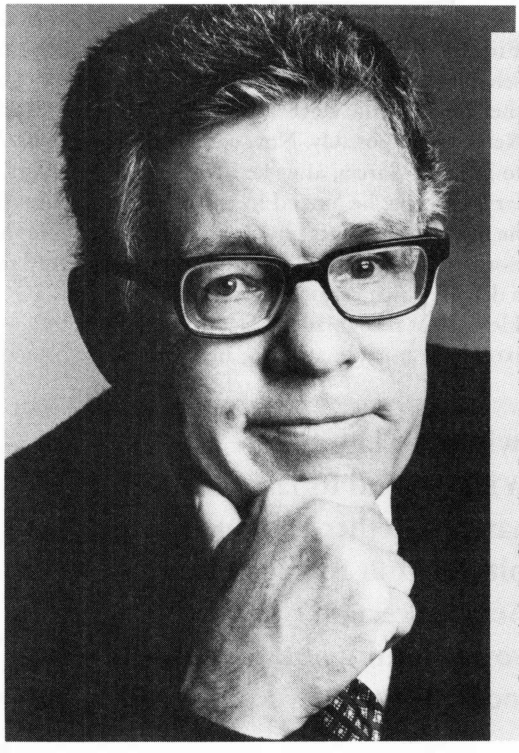
In the case of Farrakhan, I think it was right on target. I think if he would play his violin more, that he would probably make his points in a much more telling fashion than he ever could with words.

If anybody sang when he spoke, it was Martin Luther King, Jr. He sang, and he had a message. But that's the reason why his message had so powerful an impact. He sang. And if you don't believe me, listen to one of his speeches.

Professor of Voice Cornelius Reid

'The singer must *orchestrate* to create a dialogue'

Cornelius Reid has been teaching voice since 1934. He is the author of five books including "Bel Canto: Principles and Practices," "The Free Voice," the encyclopedic "Dictionary of Vocal Terminology," and most recently, "Essays on the Nature of Singing." He has lectured and presented master classes on voice in the United States, in Germany, and in England. He has been on the faculty of Marymount College, General Theological Seminary, and most recently, Teachers College, Columbia University in Manhattan. Mr. Reid has made a lifelong investigation of the old Italian teaching methods which first created bel canto, to try to resurrect it today. This interview was conducted by Kathy Wolfe on March 13, 1993 in New York City.



'When you sing a musical composition, even a simple song, you orchestrate it with your voice. And you can only do that if you understand how to utilize the different registers. If we vary the pitch from the original, the human singing registers will shift in different places from that which the composer intended, and we undermine the entire principle according to which the composer created the composition in the first place.'

Fidelio: Singers are familiar with your books, Bel Canto and The Free Voice, but would it be possible to summarize your basic precepts for the interested layman?

Reid: They're simple. I got into this because I was disenchanted as a voice student with poor instruction years ago, so I started reading books, and read back into the bel canto era, and discovered there were common principles believed by the teachers of the time, rather than today, when teachers "do their own thing."

Fidelio: You discovered what appeared to be a universal principle?

Reid: Oh, absolutely. In my new Dictionary of Vocal Terminology I describe how the basic Italian method went to Germany, to France, England, and all over the world, and that those principles were intact until Manual Garcia invented the laryngoscope in 1854, when for the first time people could see the larynx.

Unlike today, the concept of vocal registers, registration, was the basic philosophy and understanding upon which the old Italian teachers operated and built their entire system, throughout the era of high bel canto in the eighteenth and early nineteenth centuries. In fact the only dispute prior to Garcia's invention, was whether there were two registers, or three.

The whole idea of the term register is the same as they had in the old organs, which we still have in the organ today, in which you change the register. This is done by pulling out the stop, pulling a lever which triggers a mechanical action, as a result of which, air is sent through a different set of pipes. There is a physical mechanism in the instrument which, when called upon, activates a different set of pipes, which produce a different tone quality, the product of the different shaping of pipes, and their size and dimensions.

Fidelio: So it's very clear on the organ just what a new register is? And this concept of register, and shift from one register to a distinct register, has been clear for hundreds of years?

Reid: Yes, I pull out the stop and mechanical processes go on which put air into different pipes, and the character of the pipes, their shape and dimension produces a particular tone quality.

So a register is really a mechanical action. And therefore, what is commonly believed today is incorrect, that is, that tone quality, pitch range, sensation, are causal or occur by themselves. None of those things are causative, just as the sounds which come out of the organ are not caused by those things.

The causative factor obviously is the mechanical process according to which I've pulled out a stop and activated a particular pipe. So, therefore, instead of considering the registers to be sensations, vibrations in the head, for example, or pitch ranges, higher or lower in

the tone compass, a register is actually a muscle system.

There are only two such muscle systems in the larynx: the cricothyroids, and the arytenoids. They are both supplied with sensory and motor nerve impulses, as is much of the respiratory system, by the Vagus nerve. The function of the cricothyroids is exclusively confined to regulating pitch, and they are innervated by the superior branch of the Vagus nerve. But the Vagus nerve splits off, and its second lower branch, which is the longer branch, goes down under the aorta and up to the larynx, supplying the remaining muscles including the arytenoids.

From that we can extrapolate two things: the two registers are the two muscle systems, each of which is supplied with neurological impulses by two different branches of a nerve.

Second, although the cricothyroids and arytenoids are both intrinsic muscles of the larynx—that is, these muscles which control the vocal folds [vocal cords] are involuntary muscles—because, however, the Vagus nerve branches off into two, we have the ability, to isolate the crycothyroids from the arytenoids, to access the one or the other muscle system. We also have the option of putting them together and teaching them how to work together, even though they are absolutely, totally involuntary, and two totally separate muscle systems.

Now: if there are only two branches of the Vagus nerve, which supply only two muscles systems, how do we account for all the masters who heard three registers?

That is very simple. Once you put them together, in the middle portion where the register shifts or breaks, the two combine their textural and qualitative properties, and they create a third quality, to the ear.

Fidelio: Perhaps that's why the old school often called the middle register the "center of the voice"?

Reid: Quite possibly. Now coming back to Manual Garcia, after he invented the laryngoscope, he looked in and thought he saw three distinct physical conformations of the vocal folds, and that started a debate which became a source of error. He did not recognize the fact that a register is a muscle system, because he could not see and therefore did not know at that time that the actual muscle systems were only two.

Fidelio: How does the rising modern pitch affect the registers? Does it cause a problem?

Reid: As with all natural laws, you can go a little bit this way and a little bit that way without damaging the fundamental functioning. But the question which I couldn't answer before was: to what extent? And certainly you are right, that if you have music that's written, for example, if Verdi wrote it, in a certain context, and a certain pitch range, then . . .

Fidelio: You can't just change it arbitrarily?

Reid: Well you can, but ought you? Talk about vocal textures. We could do this arbitrarily. I could pull out stops with my pupils and I can make them make all sorts of sounds without telling them how. But should we?

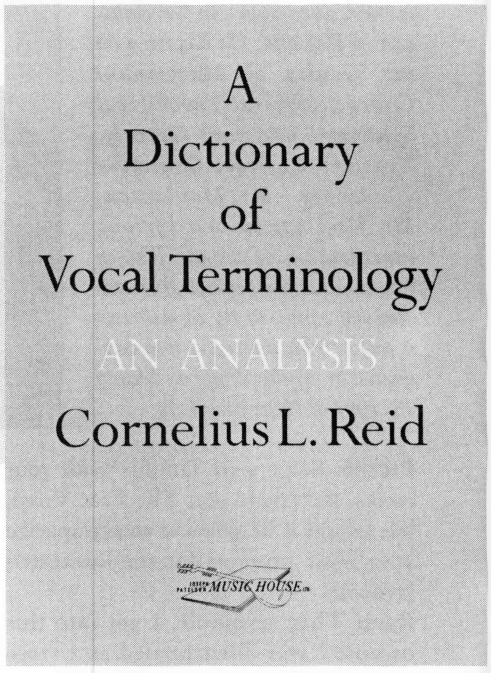
The voice functions either within its law, nature's law, or beyond its law. And when it's beyond its law, then you pay the penalty. It doesn't matter whether it's your living habits, or your singing habits, or your reasoning habits.

This thing we sing with is an organic system. And an organic system does what? It reacts to environmental pressures. As I wrote in the essay, to me a beautiful tone is no different in principle than a beautiful rose that blooms on my rose bushes when I am at my place in the country. It is the product of careful cultivation and that which is organically correct relative to the environment to which it has been exposed.

So then you say, what is the vocal environment? Everybody knows it; everybody knows that this piece is vocal and this piece is unvocal and therefore difficult. But there is a certain arrangement, in certain compositions, of pitch, intensity, and vowel combinations, which is congenial to the vocal ease of the vocal organs.

Fidelio: And has this overall vocal environment been affected by the big problem we have today of rising pitch?

'The voice functions either within its law, nature's law, or beyond its law. And when it's beyond its law, then you pay the penalty. It doesn't matter whether it's your living habits, or your singing habits, or your reasoning habits. There is a certain arrangement, in certain compositions, of pitch, intensity, and vowel combinations, which is congenial to the vocal ease of the vocal organs.'



Reid: Frankly, I just recently became consciously aware of it as an issue when I read the Schiller Institute's Manual on Tuning and Registration. My concern was reinforced, because I had a pupil who sang the Kaiserin in Austria at the Salzburg Music Festival last summer. That goes from low G to C♯ and then a sustained D—all in the space of about five minutes of singing. Now George Solti was the conductor, and Solti took the orchestra up to 448 Hz. She said it was just too difficult to sing.

This happened to her just after I had gotten the book from you. That made me aware of it. And I was doubly interested because she got friendly with one of the oboists in the orchestra, and said that the oboist, too was complaining about having a terrible time getting through the performance. The oboist's embouchure, her lips, were so disturbed by having to put that excessive tension into the playing, that she said she simply could not both play a full rehearsal in the afternoon and then play the performance at night.

So that's what put it in my mind; I quite agree. If the texture that the composer had in his mind was the texture when the tuning pitch was thus and so—and then you raise the pitch four or eight hertz or more, you get to the point where the texture that he had in mind is destroyed, because the voice produces another texture at the higher pitch.

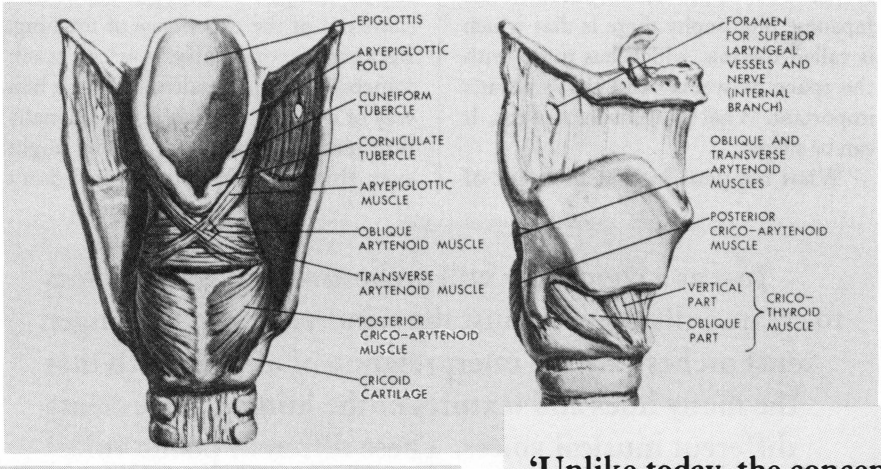
The works of a great composer cannot be transposed, and therefore they should be sung and played at the original pitch.

One of the things I relate to my pupils is the fact that when you sing a musical composition, be it a simple song, you orchestrate it with your voice. And you can only do that if you understand how to utilize the different registers.

If we vary the pitch from the original, the human singing registers will shift in different places from that which the composer had intended. We thus undermine this entire principle, according to which the composer has created the composition in the first place.

In great classical compositions, each musical line, each individual pitch has a specific emotional quality in the human voice, which is distinct from every other sung note. Each pitch has a specific emotional impact on the listener. The human voice when it sings a B♭ has a textual quality, an emotional quality, which is distinct from that of a B♮. Thus, of course, if the composer writes something at a certain pitch, and we move the pitch around, either up—or down—we destroy the composer's intentions. And therefore as Verdi said, we cannot have a situation where the note which is called A in Paris, should become a B♭ in Rome.

This is integral to the poetic singing of a text. One of the most important principles for the singing student to learn is that, just as a conductor will orchestrate the string voices distinctly, to create a dialogue as heard against the



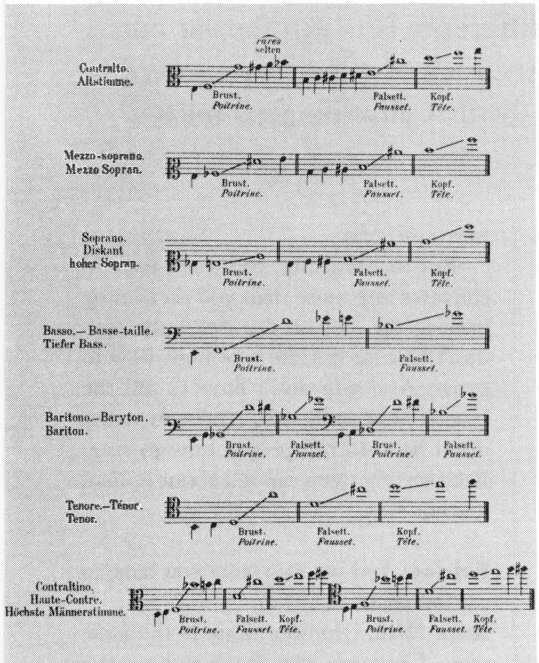


Figure 11. Demonstrating the relative positions of the chest, falsetto and head voice in the tonal range, reported by most early writers as being applicable to all voice types, male and female. (From Garcia, Garcia's Schule, oder Die Kunst des Gesanges.)

Illustrations from "A Dictionary of Vocal Terminology."

'Unlike today, the concept of vocal registers, registration, was the basic philosophy and understanding upon which the old Italian teachers built their entire system throughout the era of high bel canto. The idea is the same as in the organ: you change the register by pulling out the stop, pulling a lever which triggers a mechanical action. There is a physical mechanism in the instrument which produces a different tone quality.'

wind voices and so on, so the singer must orchestrate the interpretation of an aria, such that the many hues and textures of the human voice create different musical voices. These different poetic voices are based on the difference between the various vocal registers, each of which are produced by distinct physiological means.

If you do that and the voice is free enough to do it, then you end up with the texture and the quality that the composer had in mind, and also through that you have basically a sense of the feeling that he had at the same time. So instead of this modern "brighter" feeling, he wanted something different, for example, a warmer feeling. That's the way the music was supposed to sound.

It's just texturally wrong, to forget what the composer wants. The composers that wrote for the voice and wrote well knew that, for example, on a certain pitch and a certain vowel, at a certain level of intensity, within the framework of the phrase, that vowel, that pitch and that intensity and that tonal texture were exactly right for conveying the emotion that was contained within the phrase.

Now, since, just as when you raise the tuning pitch of the piano or the violin, you make the tone brighter, so when you raise the tuning pitch for the voice singing that same composition, the higher tuning takes away and diminishes those textural properties. So, forgetting the fact that it was not what the composer intended, the real point of importance is that the emotional content that's present in the tonal texture as the composer heard it, the listener is deprived of the emotional experience that comes out of identifying with that content.

Fidelio: What's the effect on the composer's intention that certain poetic statements be heard?

Reid: In great music the poetry is enhanced because the verbal text has a given meaning. But the verbal text—this goes against what everybody believes today, but this is true, take my word for it—the verbal text is illuminated because, when the voice sounds right, has the right textural properties for the given pitch ranges, and the composer has written music that brings out those properties, and demands for its expression those particular textural properties, those are the properties that elevate the meaning of the composition far above the literal meaning of the words themselves.

Fidelio: As Keats said, "heard melodies are sweet, but those unheard are sweeter." Also sometimes described as "singing in between the notes."

Reid: Yes. This is important. In Japanese philosophy there is that which is called the ma, which has to do with the space between. And that's what's important. What happens in between. It can be silent.

What happens in that moment of silence has more to say than the music itself. Because even beyond music, it is the unspoken word that has so many dimensions that it can't even be measured or put down in terms of music.

Recently I heard an interview on the radio about this nonsense: It's all in the words. Well, that simply means that anybody can sing a beautiful song recital because a lot of people can stand up and recite the words quite beautifully. But it's done in such a way that there's a supposition that Schubert never wrote music that was really worthwhile to stand by itself, that there's no such thing as musical form, there's no such thing as sensitivity for phrasing, there's no such thing as an artistic commitment to the making of sound and the awareness of sound as textures which have their own emotional quality.

And this is one of the reasons why you don't get many people who can sing a song and really move you.

Fidelio: When you teach, do you talk about this with students?

Reid: Sometimes I do. If they're interesting or if a point comes up and I feel it appropriate.

But almost everything I've ever learned or written about comes out of my experience at the piano, teaching. It's all things I've thought about that came out of the experience of teaching. Because, theoretically, you can teach somebody to sing, which is not the best way of doing it, because it's emotionally threatening to the pupil, and he might even think you're an idiot and don't have any ideas.

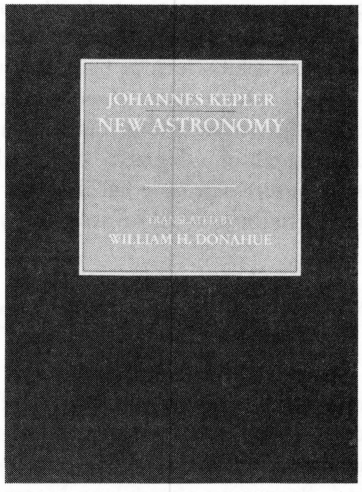
But theoretically, you don't have to converse any more than you do coming back to the rose on the rose bush. You don't have to tell the rose bush how to grow. And you don't have to tell the bloom how to bloom. And you really don't have to tell people how to sing. Because what you can tell about it, that, it is not.

Fidelio: And yet somehow you have to communicate it.

Reid: Well, I communicate in the same way. I put my rose bush not on the north side of my house up in the country, where the winds are brutal and attempt to kill it. I put it on the south side, where it's protected.

'Just as a conductor will orchestrate the string voices to create a dialogue against the wind voices, so the singer must orchestrate the interpretation of an aria, such that the many hues and textures of the human voice create different musical voices. These different poetic voices are based on the difference between the various vocal registers, each of which is produced by distinct physiological means.'

A Science of Causality and Hypothesis



Johannes Kepler:
New Astronomy
translated by William Donohoe
Cambridge University Press,
Cambridge, 1992.
665 pages, hardbound, $140.00

The appearance of the first English translation of this ground-breaking work by the father of modern astronomy is cause for rejoicing. As Kepler says, "the occasions by which people come to understand celestial things seem to me not much less marvellous than the nature of the celestial things itself."

The *New Astronomy,* or, as it was actually titled, *On the Motions of the Star Mars,* is the work, published in 1609, in which Kepler announced his discovery that the orbits of the planets are ellipses, rather than various compoundings of circular motions, and that the rate at which a given planet travels is inversely proportional to its distance from the sun (a law which later became, because of the approximation used by Kepler for calculation, the law of equal areas).

The entire work asserts that astronomy has to be considered as *Celestial Physics.* Kepler described his new astronomy as "*aitiologetos*" or "based upon causes," and this book is a triumphant vindication of the theoretical method expressed by Kepler in his first work, that the causes of created things, especially in astronomy, must be searched for in the Creator's wont for producing the most beautiful creation.

Kepler is here engaged in a polemic with the professional astronomers of his day, using the incomparable accuracy which his new insights allowed, to force them to acknowledge his radical method and conclusions as inescapable. The requirements of this task, however, mean that the book is not easy reading for those unfamiliar with the terms and operations of observational astronomy.

One is struck by Kepler's working through of the observations in terms of three geometrical images, the earth-centered or Ptolemaic, that of Tycho Brahe, with the earth stationary and the sun revolving around it, while the other planets move around the sun, and the Copernican. Kepler was using the treasure-house of data which Brahe had amassed, and was involved in battles with his heirs, so he had no choice but to refer to the Brahean hypothesis. However, the necessity of this was turned by Kepler into a crucial part of his pedagogy. He uses the equivalence of the results to show the scientists of his day that merely fitting data to a model cannot prove that the model is correct, but instead the causes which are implicit in the model must be assessed.

Throughout the first sections of the work, he accustoms the reader to compare the possible physical processes by which each of the geometrical models could be expressed, at the same time that he disproves the charges of rash innovation by painstakingly working-through each possibility, and testing each against the data which Brahe had spent his life amassing. The image which is created is that of the investigator at the mercy of the data, but this is merely the image. In his wonderfully playful dedication, Kepler makes clear that it is *he* who has conquered Mars, and not the reverse.

The Platonic Impulse

This is only the second complete English translation of any of Kepler's book-length writings, none of which are available in other languages except German and the original Latin. The translator and the publisher are therefore to be thanked for making this complete version of a major work available. However, the reader must be wary of the attempts, embedded in this edition, to explain Kepler's achievements as the result of his abandonment of his previous commitment to the outlook of Christian Platonism in favor of an Aristotelian adherence to data and the reduction of the *reasons* for things to the mere physical causes by which they occur.

In fact, the publication of this monumental work may have been in part prompted by the idea that here, Kepler could be portrayed as he is described in the Foreword, as having "passed through the refiner's fire," with the "youthful speculations of his *Mysterium Cosmographicum* . . . behind him." It is true that, because of the task he has set himself, Kepler does not specify as much as elsewhere the hypothetical foundations of his analysis. However, the misunderstanding indicated by describing this work as "a foundation for the development of classical (i.e., Newtonian) physics" is refuted by Kepler's own words throughout. For example, Kepler places an attack on the proto-Newtonian Ramus, and his demand for "an astronomy constructed without hypotheses" directly after the title page, which the translator references as an endorsement in his Introduction. Throughout the book, footnotes detail the errors which Kepler made in computation, and often reflect the translator's amazed incomprehension that Kepler could nevertheless arrive at accurate conclusions despite them.

A better sense of Kepler's own approach is given by the complete version of his renowned statement when the circular orbit which he had calculated turned out to differ from Brahe's data by eight minutes (one minute of arc is one-sixtieth of a degree): "these eight minutes alone will have led the way to the reformation of all of astronomy." The first sentence of the same paragraph, conveniently ignored by the Aristotelians, reads "Since the divine benevolence has vouchsafed us Tycho Brahe, a most diligent observer, from whose observations the 8′ error in this Ptolemaic computation is shown, it is fitting that we with thankful mind both acknowledge and honor this benefit of God." Here, and throughout his life's work, Kepler understood that the key to science is the understanding that "it neither was nor is right" (as he quotes from Plato's *Timaeus* at the start of his youthful *Mysterium Cosmographicum*) "that he who is the best should make anything except the most beautiful."

—*Sylvia Brewda*

Plato's Method Versus Neoplatonism

John M. Dillon is to be commended for completing this first-ever English translation of Proclus' *Commentary on Plato's Parmenides* after Glenn Morrow, who had translated nearly half of it, died in 1973. The only previous translation of this work into any modern language was published in 1900 in German. Therefore, this translation is extremely valuable; not because Proclus (A.D. 410-485) provides us with a valid interpretation of Plato's dialogue—which he does not—but rather for two other reasons.

First, it has historical value, particularly in light of the fact that Plato's *Parmenides* dialogue, like most of Plato's writings with the exception of the *Timaeus,* was not itself available in the Latin West even during the lifetime of Cardinal Nicolaus of Cusa (1401-64). Therefore, Proclus' work, which was probably translated into Latin in the 1280's, was the sole means by which this critical dialogue by Plato was available to the Renaissance thinkers, including Cusanus.

Second, even though the "neo-Platonic" method employed by Proclus leads him to a erroneous interpretation of Plato's dialogue as a whole, it nonetheless serves a useful negative function. Proclus' attempt to derive a positive philosophical system from the *Parmenides* is clearly not the intent of Plato's dialogue nor does it reflect Plato's own method, and Proclus' commentary is therefore a useful contrast from a methodological standpoint to the approach taken to Plato's *Parmenides* in the recent period by Lyndon LaRouche in such locations as his *In Defense of Common Sense* and *Project A.*

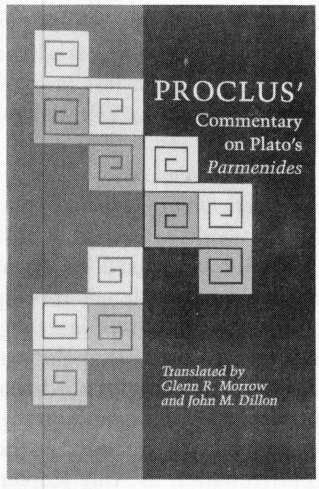
The immediate thing that one notices about Proclus' commentary is, that despite its length it extends only to the end of the dialogue's first hypothesis, or less than half the extent of the whole. From this first hypothesis Proclus constructs a Neoplatonic metaphysical system.

The first hypothesis of the *Parmenides* is "if there is a *one,* the one will not be many." From this hypothesis Proclus derives the idea of a transcendent God, who is beyond being and therefore prior to anything created. Although he does not comment at length on the second hypothesis, he does make reference to it. The second hypothesis is "if a one *is,* it cannot be and yet not *have* being." The "one which is" is therefore both a one and a many.

While not endorsing Proclus' method nor his interpretation of the *Parmenides per se,* to which he had no direct access, Nicolaus of Cusa, referring explicitly to Proclus' commentary in such locations as *On the Origin* (1459) and *On the Not-Other* (1462), argued on behalf of a notion of God, the Absolute One, as Not-other, i.e., as not many, in contradistinction to the universe it transcends, which, being created (having being) *is* both one—in likeness of the Absolute One—and also other or many.

There is a fascinating passage in Proclus' *Commentary* which is coherent with Cusanus' notion that the Not-other or God is "the other of the other," i.e., is not only transcendent but also immanent in His creation. Citing Plato's letters, Proclus writes: " . . . a divine light is kindled in us through which there comes about—in such a way as is possible to us—a glimpse of it, which makes us participate in it in respect of that part of ourselves that is most divine. But the most divine thing in us is the One in us, which Socrates called the illumination of the soul, just as he called the truth itself light. This illumination is our individual light, and so, if it is not impious to say this, here also like is apprehensible by like: as the sensible is by sensation, the opinable by opinion, the knowable by science, so by the One in ourselves do we apprehend the One, which by the brightness of its light is the cause of all beings, by which all participate in the One."

On the other hand, Cusanus criticized Proclus for his attempt to construct a rational defense of the existence of a multitude of pagan gods through his doctrine of *henads.* Cusanus' concept



Proclus' Commentary on Plato's *Parmenides*
translated by Glenn R. Morrow and John M. Dillon
Princeton University Press, Princeton, 1987
616 pages, paperbound, $24.95

of the Absolute One as triune and creative, is totally in conflict with Proclus' notion that the Absolute One is not the intelligible father who causes all things; for, according to Proclus, the primal God is the generator of the plurality of gods, only some of whom are fathers.

Lyndon LaRouche, who has been able to study the *Parmenides* directly, arrives at the same conclusions concerning the dialogue which Cusanus was able to distill from Proclus' methodolgically erroneous *Commentary*. Whereas Proclus interprets the *Parmenides* as the allegorical expression of a positive philosophical system, LaRouche correctly sees the dialogue as a polemic against the Eleatic school of philosophy represented by both Parmenides and Zeno. For LaRouche, what Plato does in the *Parmenides* is to demonstrate the absurd and self-contradictory conclusions to which one is led by deductive succession from the axiomatic assumptions of the philosophy of Parmenides, in which the One is conceived as static or linear.

LaRouche argues in effect that what Plato proves in the *Parmenides* dialogue is precisely the same thing that Cusanus proves in "On Squaring the Circle." In the latter, Cusanus shows that the perimeter of a polygon can never be made co-extensive with that of a circle by the method of exhaustion; in fact, the more sides the polygon has, the more points it has at which it is distant from the circle. Similarly, as long as Parmenides assumes that unity is incapable of qualitative change, and is rather measurable by simple linear extension, his attempts to define the relationship of the many to the One will necessarily fail.

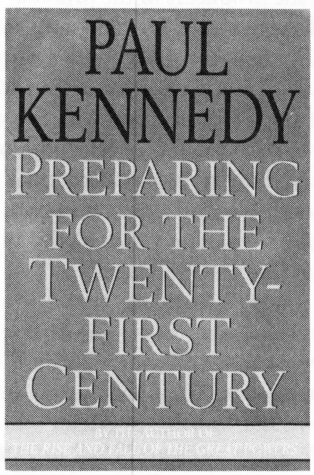
Although Proclus was unable to remove the real Plato entirely from his *Commentary,* it is this concept of the Absolute One as Creator, of the universe as capable of qualitative change, and of man as capable of effecting qualitative change through his use of reason—all implicit in Plato's devastating polemic against Parmenides' linearity—which eluded him, and which LaRouche, using the method of Cusanus and Plato, has found.

—William F. Wertz, Jr.

Yearning for the Malthusian Millennium

Admittedly, British-born, Yale University historian Paul Kennedy has compiled an impressive array of data and has taken up some provocative and challenging themes. But, for the most part, his work is a mixture of monumental incompetence combined with disinformation and fraud.

Kennedy is arguing for a new geopolitical cult rooted primarily in an updated version of the worldview of Parson Thomas Malthus. The driving force, and central threat, in Kennedy's world, as in the late eighteenth century of Malthus, is demographic growth. Rapid demographic growth is a determining factor in causing wars and political instability, with the added twist today that it also damages the "global environment." Combatting the threat of "overpopulation," in Kennedy's view, justifies, or necessitates, an imperial world order ruled by rentier-financier interests.



Preparing for the Twenty-First Century
by Paul Kennedy
Random House, New York, 1993
428 pages, hardbound, $25.00

'Winners and Losers'

Technology, such as it exists in Paul Kennedy's future universe, will predominantly help those who are at present better off—primarily the Japanese and several European nations—and hurt the worst-off, the Africans being at the bottom of the heap. The only two frontier technological developments that he grants real significance to are biotechnology and robotics. Biotechnology will certainly increase food production, but it will be dominated by powerful multinational corporations and will be effectively denied to the developing sector. Robotics, meanwhile, will mainly work to the benefit of Japan and a handful of other countries, but will progressively undermine manufacturing labor, thereby further hurting countries with large populations, which require "labor-intensive" approaches.

What this combination of demographically determined history and selectively developed technology adds up to, in Kennedy's view, is that the world inevitably has "winners and losers," as in a sports match: "History is, once again, producing its lists of winners and losers. Economic change and technological development, like wars or sporting tournaments, are usually not beneficial to all."

Consistent with this, is Kennedy's view that "Malthus' England" is an example of a "winner" in history. "Malthus' England," of course, is a term synonymous with "the British Empire," which "won" only because it conquered and devastated other peoples. Kennedy is less than frank, employing British diplomatic euphemism instead, as when he attempts to contrast how "the British escaped their Malthusian trap" with the case of India, which is "much closer to Malthus' model." India's population, he writes, "also doubled and redoubled in the nineteenth century, but on a much less productive base. Furthermore, because the Indian states had been unable to resist Britain's East India Company militarily, their subjects could

do little when British machine-made textiles—not only cheaper but of better quality than native cloth—poured into the country, driving out traditional domestic producers in the process."

His convoluted formulation, "unable to resist Britain's East India Company militarily" is a typical semantic trick, to cover up for the fact that British colonialists reduced the Indian population by about half in the first decades of colonial rule. He also never mentions that Malthus was the paid scribe of the British East India Company.

Kennedy is obviously nostalgic for an imperial system now, one that could wage war against "overpopulated" nonwhite nations. What this means for the victims, the "losers," in Africa and elsewhere today, is clear: "Civil or external wars—with their heavy casualties—were, like famine and disease, among the malthusian antidotes to a population explosion, and perhaps the most effective of all because they killed people in the prime of life."

Who Will Inherit the Earth?

Kennedy is a committed backer of the "global financial system," and his twenty-first century options are all defined by the preservation of that system. For him, the International Monetary Fund is the hero of the international trading and financial system. If Africa and Ibero-America are being strangled by debt, it's essentially their own fault. Those who don't master the ways of "the market" will be "losers": "The reality nowadays is that any government which offends international finance's demand for unrestricted gain . . . will find its capital has fled and its currency weakened. . . . The message is clear: if you do not follow the rules of the market, your economy will suffer."

Options for Africa's salvation are excluded for the simple reason that Africa "cannot pay." "Poorer countries simply can't pay for large irrigation schemes," he writes. Were China and India to really develop, he insists, this would have "appalling consequences for their environments" and would "also threaten the earth's overall atmosphere."

Ultimately, Kennedy's is the pagan world of the usurer. From the standpoint of Christianity—and the other great faiths—Paul Kennedy, and those who think like him, might do well to ponder what Jesus Christ meant, in the Sermon on the Mount, when He said, "The meek shall inherit the earth." If the human race survives this extremely grave period, surely the "winners" will not be those who think like the author of *Preparing for the Twenty-First Century.*

—Mark Burdman

An Ugly Geopolitical Soul

Anyone wishing to know how and why the United States has come to such a sorry pass over the last decades, would do well to read George Kennan's *Around the Cragged Hill.*

As the avowed personal and political philosophy of this old Soviet hand and longstanding member of the U.S. policy elite, Kennan's book provides ample evidence that geopolitics as a world outlook must inevitably result in explicitly anti-human policies.

As one of the leading theorists and practitioners of geopolitics in the U.S. elite, Kennan developed the policy of "containment" of post-war Soviet power.

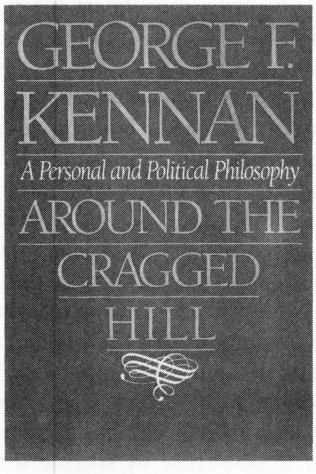
That this policy was firmly rooted in balance-of-power politics is evident from his attitude toward the Yalta agreements. His main objection was not that they sold out Eastern Europe to Moscow, but that they did not define spheres of influence firmly enough.

In a February 1945 letter to his friend and fellow Foreign Service officer, Chip Bohlen, Kennan complained: "Why could we not make a decent and definitive compromise with it—divide Europe frankly into spheres of influence—keep ourselves out of the Russian sphere and keep the Russians out of ours?"

This same cynical outlook pervades *Around the Cragged Hill,* which Kennan in part devotes to a new geopolitical scheme he's concocted, one predicated on dismembering the largest "monster" nations, such as the U.S., China, India, and Brazil.

"New modalities and institutions for collaboration," he writes, "will have to be devised to absorb burdens of authority that the emerging nations are unable to bear, and to accept other burdens that some of the older nations are unwilling to continue to bear alone," such as environmental problems and "overpopulation."

To solve these alleged problems he advocates breaking up the U.S. into "a dozen constituent republics," which would absorb "not only the powers of the existing states but a considerable part of those of the present Federal establishment."



Around the Cragged Hill: A Personal and Political Philosophy
by George Kennan
W.W. Norton & Company
New York/London, 1993
272 pages, hardbound, $22.95

Kennan has an apparently limitless contempt for humanity. In discussing population growth, he quotes his former boss, William Bullitt, that mankind is "a skin disease of the earth," a view with which Kennan wholeheartedly concurs.

"There is an optimal balance," he

insists, "between the density of human population and the tolerances of nature. This balance, in the case of the United States, would seem to me to have been surpassed when the American population reached . . . two hundred million people, and perhaps a good deal less."

Kennan hews to the belief that the great mass of people exist to be *de facto* slaves, ruled over by a small elite.

Early in the book, he muses on the heredity versus environment debate. "One of the most common features of the American outlook is the traditional belief that heredity has very little importance," he laments, and then goes on to insist that, "On the contrary, a great deal of what the newborn child was destined to be was plainly written into it before its birth."

That particular statement goes hand-in-hand with Kennan's long-held belief that the U.S. should be ruled by a non-elected elite.

In a book he began in 1938, but never finished, Kennan urged the U.S. to move "along the road which leads through constitutional change to the authoritarian state," adopting such measures as "very extensive restriction of suffrage" for women, Blacks, and immigrants.

Around the Cragged Hill revives these prescriptions, albeit packaged in a less extreme form. For example, Kennan carries on about the need for a servant class:

"Of particular importance . . . is the preservation . . . of domestic service as an institution. . . . There are people for whom service in or around the home pretty well exhausts their capabilities for contributing to the successful functioning of a society. There are others who have different and rarer capabilities; and it is simply not a rational use of their abilities that they should spend an inordinate amount of time and energy doing things that certain others could no doubt do better, and particularly where these are just about the only things the latter are capable of."

As a stepping-stone to his wished-for "authoritarian state," Kennan suggests the creation of a Council of State that would develop long-term policy for the U.S. Kennan's proposed Council of State would be composed of individuals drawn from the business, government and corporate elite, appointed solely by the President.

"The establishment of such a panel would admittedly be a novel undertaking, outside the American tradition," Kennan freely acknowledges, but is nevertheless necessary because traditional methods of governance do not work.

Geopolitical Theology

Kennan has developed a theology to match this sordid and despairing view of the world. In a bizarre reworking of the Gnostic belief structure, Kennan posits the existence of two gods.

The "Primary Cause," created the universe, and is "almighty . . . so far as the physical universe is concerned." However, the Primary Cause is not only not "benevolent," but is an impersonal force, without interest in the fate of humanity.

The second god is the god of mercy, who is "filled with understanding and compassion for the agonies inflicted on man." But this god is impotent. This "Spirit" "bears . . . no responsibility for the natural order of things in which the human individual is compelled to live," and its role is simply to give succor to man in his struggle with his "semi-animalistic" nature.

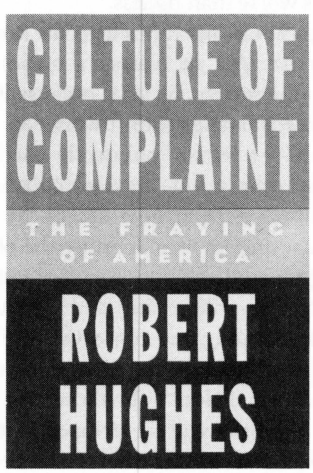
There is no unity between these two gods, and it is this chasm between power and mercy (or morality), which lies at the rotten core of the geopolitical mind.

—Kathleen Klenetsky

An Immoral Moralist Confronts 'P.C.'

The Liberal Establishment is getting scared of "Political Correctness." The last eighteen months have seen the publication of a dozen books, and a few-score magazine and journal articles, by prominent liberal intellectuals who have finally decided that the "P.C." mania in our culture has become too dangerous to be dealt with by the the dry academicism of scholars like the late Allan Bloom, nor by the simple-minded scandal-mongering of neo-conservatives like Dinesh D'Souza.

The most polemical, and most humorous, of this lot is *Culture of Complaint,* by Robert Hughes, the Australian-born author and chief art critic of *Time* magazine. Hughes' phenomenology is angry and precise: America has become a "culture which has replaced gladitorial games, as a means to pacify the mob, with hi-tech wars on television that cause immense slaughter. . . . Meanwhile, artists vacillate between a largely self-indulgent expressiveness and a mainly impotent politicization, and the contest between education and TV—between argument and conviction by spectacle—has been won by television, a medium now more debased in America than ever before."



Culture of Complaint:
The Fraying of America
by Robert Hughes
Oxford University Press,
New York and Oxford, 1993
224 pages, paperbound, $19.95

The nation's universities, says Hughes, have lost all sense of reality: "When the old New Left students of '60's academe re-entered the university as teachers, they saw the exhilarated hopes of their youth deflate after 1968, collapse under the backlash of the '70's, and become mere archaeology by

1980. . . . Their response to this trauma was to shift away from classical Marxism . . . and embrace the more diffuse and paranoia-driven theories of the Frankfurt School. . . . The writer who drops in on this world is bound to feel like Gulliver visiting the Royal Academy of Lagoda, with its solemn 'projectors' laboring to extract sunbeams from cucumbers."

There are similar *bons mots* on almost every page, usually delivered with the wicked, almost catty, sharpness which is convention among today's professional critics. Hughes skewers, among other things, Afrocentrism, postmodern architecture, and attacks on Christopher Columbus by erstwhile "Aztec nationalists"—many of the same subjects which have been critically surveyed in this magazine over the years. On the symptoms of the disease, Hughes is an entertainment; but on its causes, he is effectively silent. And, his prescription for a cure is worse than useless.

Hughes limits himself to his area of expertise. Art in America no longer serves the society, he says, because it has become a battleground between two "P.C.'s"—a leftist "politically correct," and a right-wing "patriotically correct"—with each new attack by one side, causing an escalation by the other. The proposed solution is to cool out the fight by de-politicizing our museums, and by stopping neo-conservatives from using the National Endowment for the Arts as a political hobbyhorse. In this way, artworks will be stripped of their political cover, and will be forced to stand on their own merits.

I think that every reader would agree that the judgment of a work of art cannot be based on the artist's allegiance to a political mafia. However, saying what good art *isn't,* doesn't tell you much about what good art *is,* and as Hughes pursues this aspect, he undoes everything useful in his previous polemic.

Is Art Scientific?

Hughes is a militant modernist; in fact, his 1981 book, *The Shock of the New,* was a very effective attempt to break down the last popular resistance to modernism in American culture. For two decades, Hughes has been celebrating modernism's canonical belief that art's purpose is not universal, but is primarily the exposition of the internal state of the artist, no matter how ugly, alienated, or lawless that internal state might be. "The appreciation of art and literature," he notes in *Complaint,* "has no scientific basis whatever; one is dealing with the unquantifiable coin of feeling . . . ." This means that there can be political works of art, but Art (capital A) is not political.

"We know, in our heart of hearts," Hughes adds, "that the idea that people are morally ennobled by contact with works of art is a pious fraud." To prove that point, Hughes cites the case of Renaissance lord Sigismondo da Malatesta, who had the "excellent taste" to have Alberti, Duccio, and Piero della Francesca decorate his home, but yet remained a murderer and Satanist despite the brilliant art surrounding him.

Hughes' point here is clearly pragmatic garbage! Certainly, Plato tutored the tyrant Dionysius; Leonardo painted for Cesare Borgia; and Beethoven played before the delegates of the Congress of Vienna—and by the simplistic test of pragmatism, they all failed miserably. Yet we do not call them failures, because their accomplished intention was to expose to *all* humanity an advanced understanding of how mankind partakes in God's continuing plan of creation. Their art remains great exactly because it was universal, morally ennobling, scientific, and political.

The modernists' radical re-definition of art to include ugliness, and even psychosis—a revision pioneered by the Frankfurt School theorists [see my articles in Winter 1992 and Summer 1993 *Fidelio's*] whom Hughes elsewhere condemns—is the entire basis of the postmodernist lunacies which Hughes says he opposes. Thus, all Hughes contributes to the battle against Political Correctness are some witty descriptions. On the other hand, anyone serious about stopping this destruction of our culture, will admit that beauty—in opposition to modernist ugliness—is one of the few effective weapons we have to do it.

—*Michael Minnicino*

Multiculturalism: Prescription For Genocide

One of the mandatory textbooks on the reading list for "Politically Correct" U.S. colleges today is the autobiography of the Guatemalan "Indian activist" Rigoberta Menchú. The book is a fraud almost as great as Menchú's being granted a Nobel Prize in 1992 as a *peace* activist! *I, Rigoberta* is not an honest story told to defend oppressed Indians, but a tract scripted by slave-masters, to perpetuate slavery.

The stories told by Menchú of her childhood describe conditions intolerable for any human being to have to suffer. But what does *I, Rigoberta* identify as the causes of Guatemala's backwardness, despite its potential? What are the solutions proposed by Menchú and her promoters as the path to freedom?

Most striking is what is *not* mentioned. No history is offered, nor any basic facts of economics. There is no discussion of the foreign debt, collapsing terms of trade, or the International

I, Rigoberta Menchú, An Indian Woman in Guatamala
edited by Elisebeth Burgos-Debray
translated by Ann Wright
Verso, New York, 1984

Monetary Fund. Nor is any reference made to the soaring drug trade which began in Guatemala in the late 1970's, as the country became transformed into a major cocaine transshipment center, and a producer of heroin and marijuana.

Instead, Menchú's book offers only the imbecilic slogans concocted to justify "people's revolutionary war" as the causes of all Guatemala's problems: The "rich," the Army, and Spanish colonizers of 500 years ago are the Enemy, simply because they are rich, in the Army, and not-Indian. As for solutions, *I, Rigoberta* is a call to arms against any and all attempts to *alter* the backwardness in which the majority of Guatemalans live, because this is "their" culture.

It is not incidental to this program of action that *I, Rigoberta* was put together by Burgos-Debray, the wife of that French theoretician of Ibero-American guerrilla warfare, Régis Debray, who in the 1960's left his base in Havana to accompany Cuba's Che Guevara in the mountains of Bolivia.

When Menchú was awarded the Nobel Peace Prize in October 1992, the Guatemalan government and military were attacked by the international media for "lying" that Menchú, her family, and the "popular organizations" she was involved with, had anything to do with the avowedly Marxist terrorists in Guatemala. But in 1982, Menchú spoke freely about how she and her entire family worked with the guerrillas:

"The people have four politico-military armed organizations," she explains in *I, Rigoberta.* "The Guerrilla Army of the Poor (EGP), the Organization of the People in Arms (ORPA), the Fuerzas Armadas Rebeldes (FAR), and the Guatemalan Workers Party (PCT). This is the nucleus of the national leadership. Our idea is to put into practice the methods initiated by the masses when they evolved their 'people's weapons': to be able to make Molotov cocktails to fight their army. . . . We wanted to weaken the government economically, politically, and militarily."

During her participation with the guerrillas, Menchú assumed the task of training villages in "self-defense" against the Army. Methods included using stones, traps, lime, and Molotov cocktails. "We've often used lime. Lime is very fine and you have to aim it in a certain way for it to go into someone's eyes. . . . You can blind a policeman by throwing lime in his face. . . . We'd invented a sort of Molotov cocktail . . . this cocktail could burn two or three soldiers," the future Peace Prize activist expounded.

A 'Culture of Rage'

Her cause "wasn't born out of something good, it was born out of wretchedness and bitterness," Rigoberta Menchú twice tells Burgos-Debray. Repeatedly, throughout the book, Menchú speaks of the "hatred" which drives her sought-for "revolution."

The central role played by rage and hatred provides a key to how this induced "indigenous struggle" has been organized, and points to its purpose: To ensure that rebellion against miserable conditions and inhuman treatment is turned *against* the nation-state and national institutions, and not into a movement for the development of all Guatemalans.

The message delivered in *I, Rigoberta* is that Indian "culture" rejects schools, modern agricultural methods, medicines, "all things modern." The guerrillas *compañeros* who came to the mountains were trusted, because they "adapted to the conditions we live in. We can only love a person who eats what we eat," Rigoberta proclaims; the *mestizos* "want to destroy us with medicines and other things," such as food "made from machines."

A Contrasting View

Students forced to read *I, Rigoberta* would do well to contrast it with *Bridge Across Jordan,* the autobiography of another woman, U.S. Civil Rights leader Amelia Boynton Robinson. In contrast to Menchú, Robinson dedicated her energies to trying to better those abandoned in poverty, to enable them to have access to the most advanced means possible, so that they, too, could make contributions to the development of the human race as a whole. Her efforts, like those of Dr. Martin Luther King, Jr., with whom she worked, were founded on the simple doctrine of "Love thy neighbor." Her constant theme is that the hater, by hating, destroys himself. In contrast to Menchú, Robinson is often heard to say that the only race which she is proud to represent, is the human race.

—Gretchen Small

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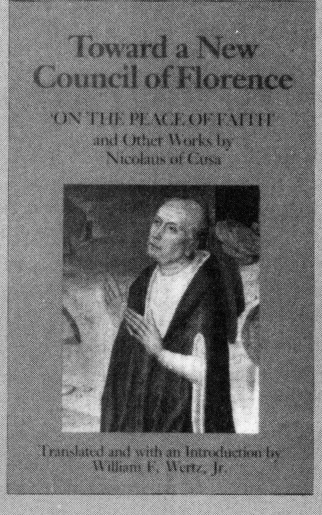

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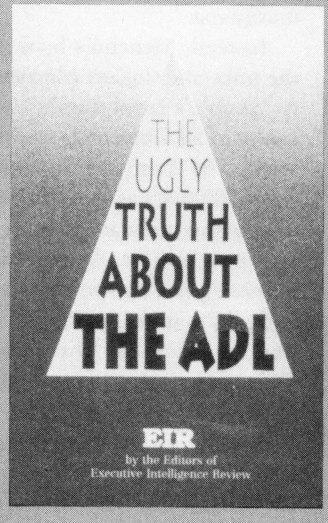

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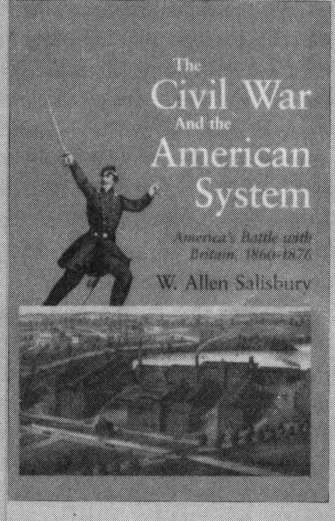

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Raphael's 'Transfiguration'

Raphael's painting of the "Transfiguration," shown on the front cover, was commissioned in 1517 by Cardinal Giulio de' Medici. According to Vasari, when Raphael died on Good Friday in 1520, the painting, still unfinished, was placed "at the head of the dead man, in the room where he worked." The painting was completed by Giulio Romano.

This painting by Raphael is a reflection of the ideas developed by Nicolaus of Cusa in many of his writings, including *On the Vision of God, On Conjectures,* and *On the Filiation of God.* As Nora Hamerman points out in this issue, three levels of human consciousness are depicted in the painting by the three sections into which the composition is divided vertically. By using light and shadow, Raphael is able to convey the succession of events depicted in the three sections, as if they existed simultaneously in one eternal moment.

The lowest section shows an agitated scene: a child, possessed by the devil, has been brought by his mother and family to be cured, but the nine Apostles are helpless to cure him. The Apostles are shown covered in darkness, unable to cure the child because they lack faith in Christ as the Word or *logos* incarnate. At the same time, a Divine light emanates from the figure of Christ in the topmost section, a light which, as it illuminates the scene below, prefigures both Christ's ability to cure the child when he descends from the mount, and also the future capacities of the Apostles themselves. This capacity is shared, potentially, by the viewer, whose attention is directed to Christ as the solution by the pointing of two of the Apostles, as well as of the child and another, who extend their hands towards Him. Thus, Raphael shows how evil, which has no positive existence, is overcome through faith in the power of reason and love.

In the middle section, the three Apostles on top of Mount Tabor are blinded by the light, drawing back in fear of the implications of Christ's transfiguration and His identification as the Son of God. Their later actions will, however, demonstrate that they too, like all of us, can become *adopted sons of God* by bringing their minds into harmony with God's Word.

Christ himself is shown transfigured in a radiant cloud, elevated to suggest his later resurrection and ascension. The presence of this Divine light confirms that Christ is the Word or *logos,* while Moses and Elijah appear on either side of Him to suggest that Christ is the *Messiah,* who has come to fulfill the Law with love.

Through this extraordinary composition, Raphael challenges the viewer that to see God, one must rise above the realms of mere sense perception and deductive logic, in order to enter into Cusanus' "Third Heaven" of creative reason. This is what it means to be an *adopted son of God.*

Raphael's painting has special significance for us today, as we mobilize to oust the satanic school reforms packaged under the rubric of "Outcome Based Education." Can we protect our children from the molestation of the *spirit* which is the intent of these education programs—that is, can we cure these children of the devil's contemporary attempt to possess their souls? The answer lies in our own transfiguration "in the imitation of Christ"—so that we ourselves are able to ascend and participate in the "Third Heaven" of creative reason which we call *capax Dei.*.

—William F. Wertz, Jr.

Photo Vatican Museums

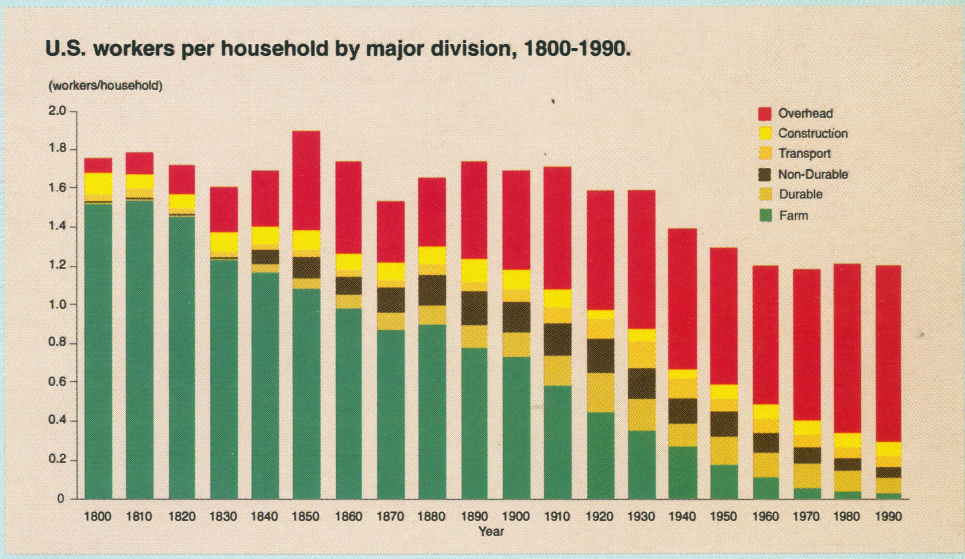
Raphael's 'Archimedes'

Only twelve paintings by Leonardo da Vinci have come down to us, and it was largely left to Raphael Sanzio, an artist of the next generation, to apply Leonardo's discoveries. Raphael portrayed the Greek mathematical physicist Archimedes in his fresco "The School of Athens" in the Vatican, which was a Christian view of the contributions of Classical Greek science, and an assertion of the primacy of Plato, rather than Aristotle, for Christian thought. (SEE **Leonardo da Vinci and the Scientific Revolution of Renaissance Visual Arts**)

In This Issue

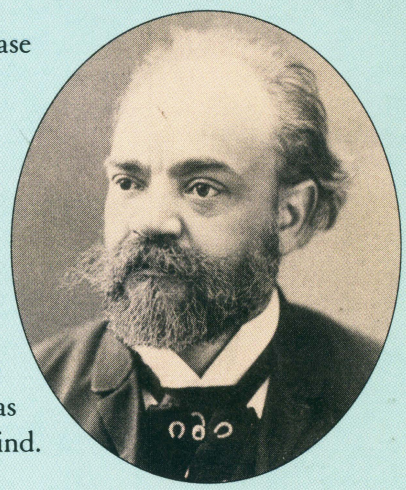
Symposium: 'History As Science' by Lyndon H. LaRouche, Jr.

Human Development Demands Population Growth

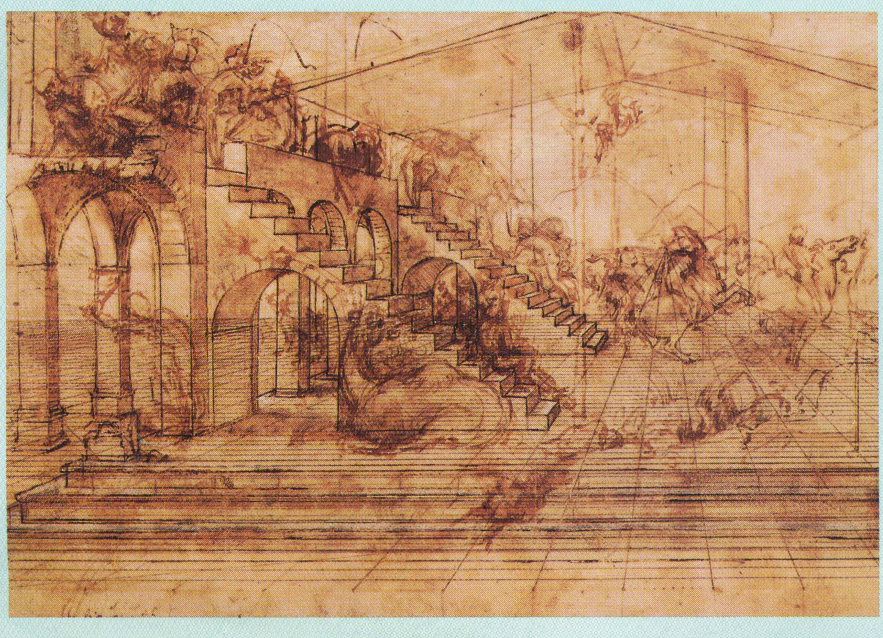


Paul Gallagher and Christopher White demonstrate that civilization has progressed through Renaissances which, by producing increases in man's potential relative population density, have created the human potential for scientific and technological development. For humanity to survive today's global crisis, we must reject the ideology of zero-growth and return to the proven ideas of the Golden Renaissance, which launched the greatest increase in human population the world has ever seen.

The Classical Music War Against Multiculturalism



Was composer Anton Dvořák a multiculturalist, or a musical colonialist? Neither. For according to Dennis Speed, Dvořák, in the tradition of Johannes Brahms, transmitted the universal method of Classical composition to the New World. What Dvořák heard in the African-American spirituals, was the sublimity of the human spirit fighting for the inalienable rights of all mankind.



Scala/Art Resource, NY

Leonardo and the Scientific Revolution of Renaissance Art

Nora Hamerman shows how the ideas of Nicolaus of Cusa led to a revolution in the science of perspective, culminating in the works of Leonardo da Vinci and Raphael. Leonardo, who realized that perspective was the science of vision, strove to lead the viewer from the visible world to the invisible, and to thus achieve a mental vision of God.