

FIDELIO

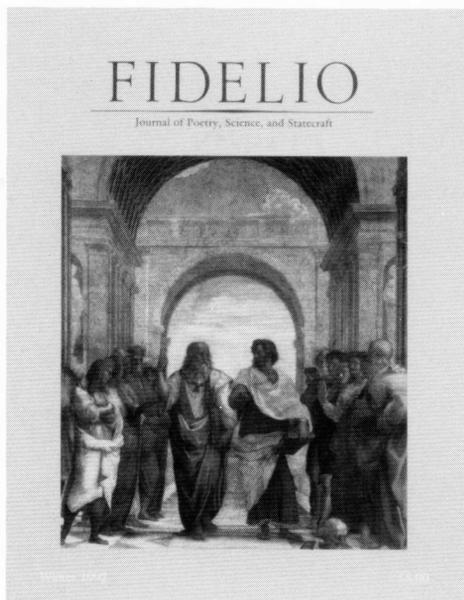
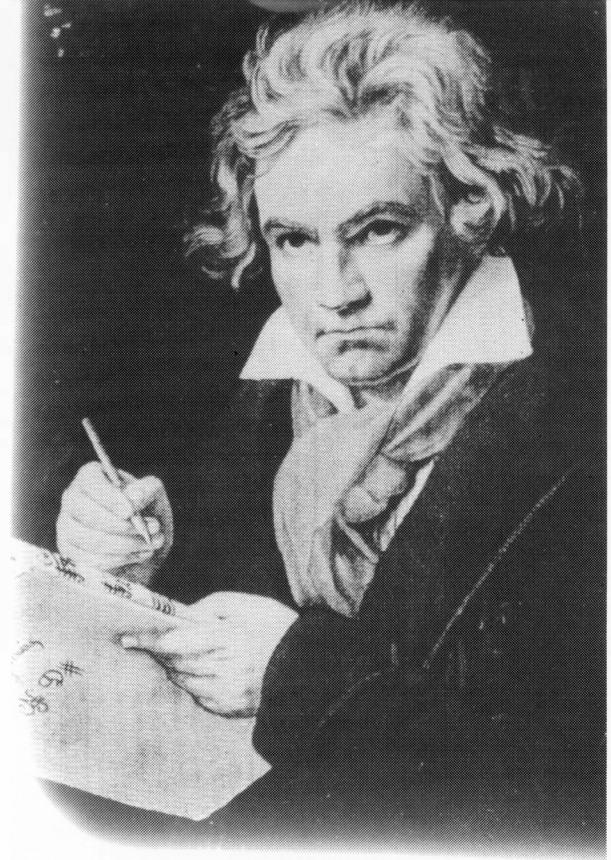
Journal of Poetry, Science, and Statecraft



Fall 1992

\$5.00

Think Like Beethoven!



You can subscribe directly to *Fidelio*, or you can JOIN THE SCHILLER INSTITUTE and receive *Fidelio* as part of the membership: Read our magazine, and help make a new Golden Renaissance a reality!

----- ✂ CLIP AND SEND -----

Sign me up as a member of the Schiller Institute

- \$1,000 Lifetime Membership
 \$ 500 Sustaining Membership
 \$ 100 Regular Annual Membership

All the above memberships include 4 issues of *Fidelio* (\$20 value) and 100 issues of *New Federalist* (\$35 value).

OR

I wish only to subscribe to *Fidelio*

- \$ 20 for four issues

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

TEL. NO. _____

Occupation/Affiliation _____

Clip and send together with check or money order to:

Schiller Institute, Inc.

P.O. Box 66082, Washington, D.C. 20035-6082

FIDELIO

"It is through beauty that one proceeds to freedom."

—Friedrich Schiller

Vol. 1, No. 3 Fall 1992

EDITOR-IN-CHIEF
William F. Wertz, Jr.

ASSOCIATE EDITOR
Kenneth Kronberg

ART DIRECTOR
Alan Yue

EDITORIAL ASSISTANT
Denise Henderson

BOOKS
Katherine Notley

Fidelio (ISSN 1059-9126)
is published by the Schiller
Institute, Inc., P.O. Box 66082,
Washington, D.C. 20035-6082.
Editorial services are provided
by KMW Publishing Company,
Inc. © Schiller Institute, Inc.

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.

Subscriptions by mail are
\$20.00 for 4 issues in the U.S.
and Canada. Airmail
subscriptions to other countries
are \$40.00 for 4 issues.
Payment must be made in U.S.
currency. Make check or
money order payable to
Schiller Institute, Inc.

On the Cover
Rembrandt van Rijn, *Self-
Portrait as the Apostle Paul*,
1661. SEE inside back cover for
analysis. (Photos courtesy of
the Rijksmuseum-Stichting,
Amsterdam.)

4

Why We Need
An International Coalition
For Peace and Development
Helga Zepp-LaRouche

17

On the Subject of
METAPHOR

Lyndon H. LaRouche, Jr.

51

'An Angelo for Claudio,
Death for Death?'

Paul B. Gallagher

Editorial	2	The <i>Punctum Saliens</i> of Our Time
Translation	54	Gottfried Leibniz: Society and Economy
Music	56	Two Settings of Schiller's <i>Maiden's Lament</i>
News	61	Judge Denies LaRouche New Trial
	62	Launch Ibero-American Movement
	64	Rio Earth Summit Meets Opposition
	65	European Parliament Denounces U.S. Executions
	65	LaRouche Thanks North Dakota Voters
	66	Warsaw Conference: Development vs. IMF
Interviews	67	Iraq's Patriarch Raphael I Bidawid
Exhibits	72	Special Exhibits Brought to U.S.
Recordings	74	Bach's St. Matthew Passion
Books	75	Schiller: Drama, Thought, and Politics
	76	Chutzpah
	77	The Holes in the Ozone Scare
	79	Memoirs of Count Witte

The *Punctum Saliens* of Our Time

On May 15 of this year, despite overwhelming new evidence that the U.S. government suppressed exculpatory evidence in order to illegally obtain the politically motivated conviction and imprisonment of Lyndon H. LaRouche, Jr., Federal Judge Albert V. Bryan denied the motion for a new trial filed by LaRouche and two of his co-defendants. Although this decision will be appealed, it is becoming clearer and clearer that the U.S. judicial system believes that it can trample upon the rule of law with impunity. The lawless decision in the LaRouche case is of the same fabric as recent U.S. Supreme Court decisions condoning the kidnapping of foreigners and expediting the execution of the death penalty even in cases where the victim is probably innocent, a practice recently denounced by the European Parliament.

Fortunately, resistance to these moves towards barbarism is growing even in the United States. On June 9, political prisoner Lyndon LaRouche, running for the Democratic Party nomination for President of the United States from his prison cell, received twenty-one percent of the vote in the North Dakota Democratic Party primary.

Outside the U.S., the same battle can be seen to be occurring. On the one hand, the Anglo-American effort to salvage the bankrupt Versailles System by imposing a New World Order, based on the precept that “might makes right,” is driving the world towards the abyss. In Eastern Europe, the communist dictatorship has been overthrown—only to be replaced by the dictatorship of the International Monetary Fund. In Ibero-America and the rest of the underdeveloped world, as evidenced by the thrust of the U.N.C.E.D. Earth Summit, extreme-environmentalist tyranny has become the new name of neo-colonialism.

On the other hand, in opposition to this drive for a New World Order, the Schiller Institute has escalated its offensive for a just, New World Economic Order based on the notion that every human being is *in the living image of God*. In her discussion document “Why We Need an International Coalition for Peace and Development,” Helga Zepp-LaRouche proposes that the peaceful revolution of Eastern Europe must now enter a second phase. Now, we must replace what

Pope John Paul II has referred to as “the structures of sin,” with a world order of peace based on development. Only then will the hope which

the successful overthrow of communism in Eastern Europe inspired in the whole world, not be in vain.

In a recent address, Lyndon LaRouche said that, in his essay “On the Subject of Metaphor,” he had hoped to transmit that method of thinking based on “Platonic principles consistent with Augustinian Christianity” necessary “to set into motion social processes, which will lend to the establishment of new kinds of institutions which must arise out of the collapse of the oligarchical order now centered in rapidly decaying Anglo-American power.”

In the section of this essay entitled “Metaphor as Classical Tragedy,” LaRouche discusses the necessary metaphorical components of a truly classical tragedy according to the principles elaborated by Friedrich Schiller. “*Given* a society whose prevailing custom in science is the ‘post-modernist’ version of the *entropic Type*, but a society in which a few potential heroes know that the crucial elements of the society’s scientific-economic practice might be ordered according to the *negentropic Type*, as readily as to the presently hegemonic entropic choice. *Define* a situation in which the failure of the potential hero to act with pungency and force upon that latter option, means a devastating

EDITORIAL

military or other kind of great suffering for his or her nation. Let this unhappy consequence occur, ostensibly because the potential hero fails to seize his last available opportunity, at the *punctum saliens*, to bring about the required shift of emphasis in the society's policy practice. This failure of the potential hero defines the tragedy."

LaRouche continues that, in true classical tragedy, the spirits of the spectators must ultimately be uplifted by the negentropic alternative. By seeing the consequences of the potential hero's failure to act effectively at the *punctum saliens* and yet at the same time his capacity to do so, the spectator of a classical tragedy is inspired in his own real-life situation not to repeat the impotence of the hero, but rather to realize both the capacity and responsibility he has to act in the living image of God.

As LaRouche concludes: "The tragedy addresses so, implicitly, the central feature of all individual creative-mental activity; that central feature is the act of efficient *participation in humanity as an historical entirety*. Nicolaus of Cusa's elaboration of the principle of *capax Dei* references this impulse in its highest form of expression."

How many of our fellow citizens today, like Hamlet, fail, as LaRouche writes, to "confront directly the entropic faction," fearing that they will perhaps lose their academic security, or pension, or worse?

In his description of the moral cowardice afflicting many in the West who refuse to act against George Bush's New World Order, His Beatitude Raphael I Bidawid, Patriarch of the Chaldean Catholic Church in Iraq, cites the proverb: "You can't tell the lion that his breath smells." Why? "Because he would devour you."

One man today has dared to tell the truth to the lion. That man is Lyndon LaRouche, who, as one of his campaign posters states, is "the only opponent George Bush feared enough to put in prison." And yet, for the reasons developed in "On the Subject

Hope

All people discuss it and dream on end
Of better days that are coming,
After a golden and prosperous end
They are seen chasing and running;
The world grows old and grows young in turn,
Yet does man for betterment hope eterne.

'Tis hope delivers him into life,
Round the frolicsome boy does it flutter,
The youth is lured by its magic rife,
It won't be interred with the elder;
Though he ends in the coffin his weary lope,
Yet upon that coffin he plants—his hope.

It is no empty, fawning deceit,
Begot in the brain of a jester,
Proclaimed aloud in the heart is it:
We are born for that which is better!
And what the innermost voice conveys,
The hoping spirit ne'er that betrays.

—Friedrich Schiller

of Metaphor," the lion will never devour LaRouche's spirit!

Because he represents the negentropic alternative to the oligarchy's continued entropic rule in today's world, Lyndon LaRouche's early release from unjust imprisonment may very well be the *punctum saliens* of the tragedy currently unfolding before our very eyes.

As Friedrich Schiller proclaims in the poem *Hope*, each of us is "born for that which is better"; the hope of a better world is not an "empty, fawning deceit." This hope is as if written on the fleshy tables of our heart; it will not betray us, so long as we do not fail to act in harmony with that divine image of love within us.

Why We Need An International Coalition For Peace and Development

by Helga Zepp-LaRouche

We are currently living through the stormy upheaval phase of a new epoch. The era of the Versailles System, which until now has shaped the entire twentieth century, is coming to its end. The collapse of the Soviet empire is as symptomatic of this as is the deep economic depression in the Anglo-American language sector. One epoch is at an end, but whether worldwide chaos and a new Thirty Years War will arise from this breakdown, or whether we will experience the beginning of a new, more hopeful time and the emergence of a new, just world economic order, is an open question.

We find ourselves confronted by developments in which instability and dissolution seem to be the rule, and small islands of relative stability, the exception. Economic decline and dramatically eroded conditions of existence determine reality virtually everywhere in the world. On the other hand, in times like these, no one can dispute that the human will to freedom is a force capable of

Helga Zepp-LaRouche, pictured above celebrating German re-unification, is the founder of the Schiller Institute. She submitted this platform for discussion in March 1992. Correspondence to Mrs. LaRouche may be sent to the Schiller Institute, Inc., P.O. Box 66082, Washington, D.C. 20035-6082.



Time and again in the history of Europe there have been great thinkers, who have taken as their program the vision of a plan for world peace. All the philosophers in the tradition of Christian humanism represent the cultural-optimistic conception that human beings will one day overcome the childhood disease of their species in the form of the oligarchical structure, and organize their states and the relations among their states according to the principles of natural law.

shaping history.

When the Chinese students in the Square of Heavenly Peace chose the “Ode to Joy” as their hymn of freedom, they inspired the whole world. Their struggle has indeed suffered a tragic, but only temporary setback as a result of the massacre on June 4, 1989. It was the courage of human beings in Eastern Europe to go into the streets for ideas long believed in the West to belong to the past—that is, for freedom, self-determination, and the inalienable rights of man—that was able to overthrow the power of dictatorship.

And yet, moods have changed rapidly, and the peaceful revolutions of 1989 seem almost to have already withdrawn into the distance. Was the hope that filled the people who went into the streets and chanted, “We are the people!” merely an illusion? Is it a dream that can only be imagined behind the

walls of communist prisons and that must shatter on the hard realities of the so-called “free market economy”?

Not necessarily, for the same spirit that filled the freedom movements of Eastern Europe, has seized many people in the developing countries, who—as in the current revolution against the dictatorship of the International Monetary Fund in Venezuela and similar tendencies in all of Ibero-America—have again drawn the hope of being able to take their fate into their own hands from

the example of the successful overthrow of dictatorship.

No, the great idea of human freedom that was concealed behind the words, "We are the people," was no chimera. But the peaceful revolution is not yet over; it must continue, and not merely in *one* country. It must unite together the peaceful forces of all nations of this earth, and continue until the unjust structures that are presently strangling humanity are eliminated and replaced by ones worthy of human beings.

Precisely in stormy times, when the rapidity of daily politics seems to capture all attention, it is advisable to take a step back from everyday concerns, and recall the more fundamental questions.

Shall it really be the destiny of human beings to remain in such a miserable condition as that in which the greater part of our species suffers today? Is it necessary that only one-third of mankind be sufficiently nourished, one-third more poorly than well fed, and one-third suffer from permanent hunger, even though it would be so simple to produce sufficient food for all human beings presently alive with the existing technology?

Isn't it rather absurd, that epidemics are again spreading today and threaten hundreds of millions, against which there have been effective cures for a long time? And is it not shameful, that the greater part of mankind in the Southern Hemisphere and in the East must live

in such oppressive poverty, that they are robbed of their fundamental human rights?

Pope John Paul II made a statement well worth considering in his recent Christmas message: The manifold suffering in this world is the result of the "structures of sin." One need not be a Catholic to see this connection and understand that the world has come to a point, where these structures, which serve only the supposed advantage of a relatively small power elite, must be overcome. What we need instead is a perspective of development of all peoples on this planet.

The 'Productive Triangle'

The American economist Lyndon LaRouche warned in November 1989 that Europe would be able to exploit the historical chance presented by the opening up of the borders, only if it drew the consequences from the then already apparent fact that not only communism, and thereby the economic theory of Karl Marx, was bankrupt, but that the Anglo-American sector was also in a depression and, thereby, Adam Smith's theory of liberal capitalism was discredited.

LaRouche referred to the fact that Western Europe could prevent itself from being pulled into the economic depression along with the these two collaborating systems, only if it took the initiative itself in Eastern Europe

and applied the economic theory that has previously always been the foundation of successful industrial revolutions: the tradition of Gottfried Wilhelm Leibniz, Alexander Hamilton, Friedrich List, and Russia's Count Sergei Witte.

Western European governments did not heed this advice, and, probably out of a mixture of pragmatism and opportunism, left it to the Anglo-Americans to determine the structural economic conditions in the East. The result is devastating: Financial sharks from the West and managers, more interested in exploiting a market than creating one, have produced extensive chaos. "Shock therapy" has ruined the Polish economy, price liberalization in the Commonwealth of Independent States (C.I.S.) has plunged the population into despair and, rather than creating a market, has promoted mafia intrigues. The greatest danger does not stem from

Pro-democracy rally,
Chemnitz, East
Germany, January
1990.



EIRNS/Angelika Raimondi

the possibility that C.I.S. nuclear weapons might be used in the not-too-distant future, but rather from hunger in Russia and the other republics, which could become the essential basis for a civil war.

In the new federal states of Germany, which are now, of course, supposed to be part of Germany, rage and hopelessness are spreading. Investments are not being made to nearly the extent that one might have expected. Industrial capacities are being dismantled by bureaucratic decisions, without being replaced by more modern ones; and in many places the impression predominates that hardly anything has improved, while much has grown worse.

If the Bonn government had not acted on the shortsighted argument that it is more profitable to close companies in the East, in order to enlarge the market for Western firms, but rather had oriented toward the total product of the German economy and to *per-capita* and per-kilometer productivity, we would not be facing this catastrophe today.

If this greedy policy continues, there is no end to the decline in sight. The most recent figure of 1.9 billion marks in public debt to be expected by 1995 dramatically underlines the fact that Germany, which is apparently in so good a position, relatively speaking, will also be drawn into the general depression of the world economy.

It is therefore now high time to introduce the second phase of the peaceful revolution. As obvious as it was that in the first phase people should concentrate on shaking off the communist yoke, it is now evident that the second phase must turn toward solving the existential problems, with which we are now confronted in Europe.

The program of the "Productive Triangle of Paris-Berlin-Vienna" was proposed over two years ago as the essential part of an overall Eurasian infrastructure program, and there are important political forces in all the nations of Western and Eastern Europe and the Commonwealth of Independent States that see in this development program the urgently necessary alternative to the chaos of "wild capitalism." At the Berlin Conference of the Schiller Institute in November 1991, a world coalition was founded for the realization of this program. It was joined by leading individuals from over thirty nations and has since gained in strength in many parts of the world.

The "Productive Triangle Program" is based on the assessment that this region, because of the capacities of industry and labor power existing there, is currently the only one in the world, from which a "locomotive effect" for the world economy can emanate. From here, an integrated infrastructural network (including a high-speed "maglev" [magnetic levitation] train system for all of Eurasia, waterways and highways, as well as produc-

tion and distribution of energy and the build-up of communications) must be realized, that can join together the existing industrial centers of the Eurasian continent and create the foundation for the development of new, modern industrial regions.

There is not a single economic reason why similar infrastructural projects cannot be begun simultaneously as a precondition for the productive development of agriculture and industry in Ibero-America, Southeast Asia, and the Middle and Near East, as well as Africa. Such projects could then immediately profit from the capital goods and technology transfer from the "Productive Triangle." It is exclusively a question of political will to so reorganize the world monetary system, that it discourages the presently dominant speculative activities, and instead of these favors long-term productive investments.

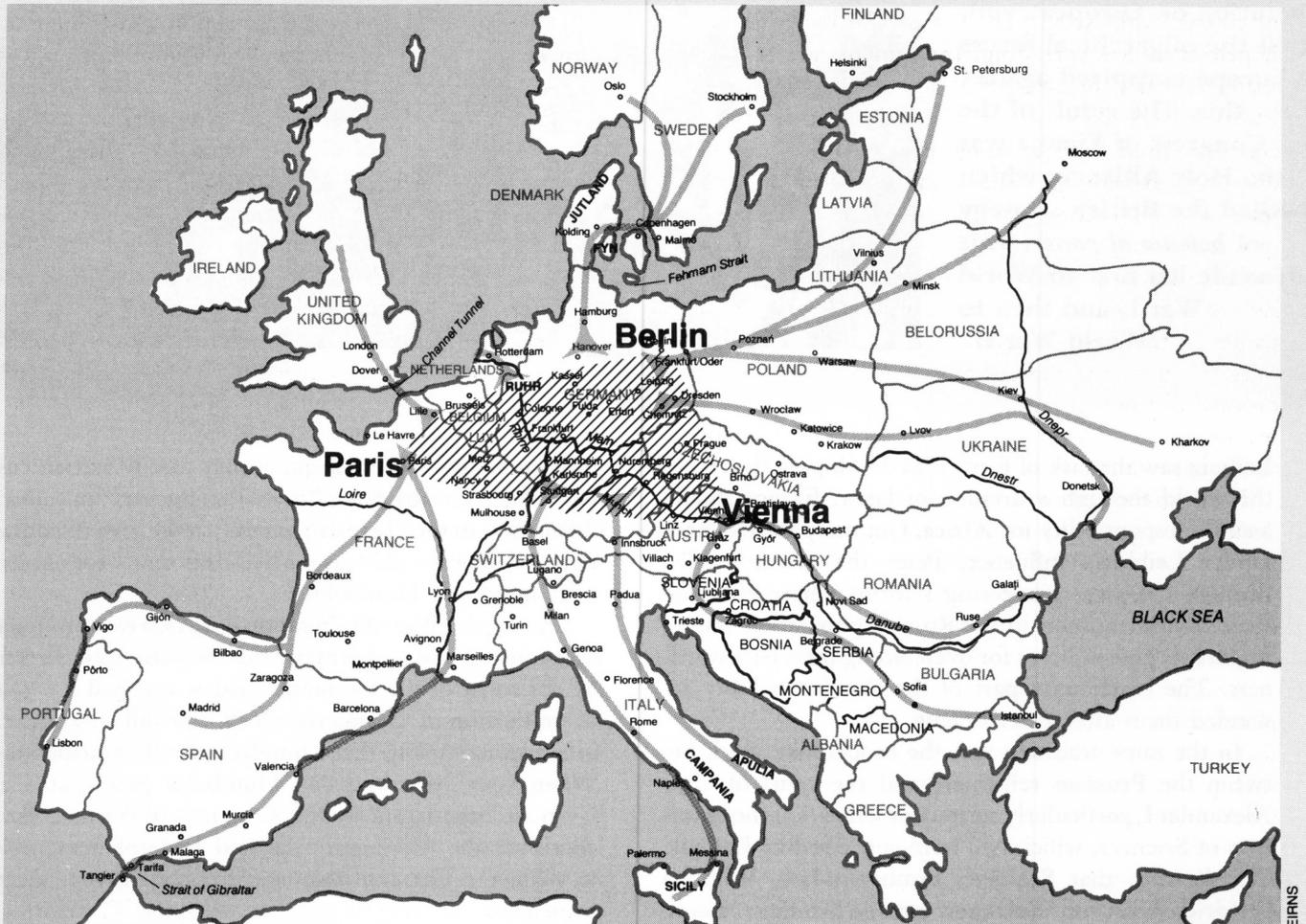
But, whether a "locomotive effect" will emanate from an economically cooperating Eurasian continent for, above all else, the industrialization of the Southern Hemisphere?—that is *the* question of the twentieth century. For there are forces that want to prevent this at any price. These are the same powers that bear responsibility for World War I. In order to effectively prevent a continental European economic alliance, they subsequently established the Versailles System. World War II was merely the continuation of these unresolved conflicts, and the supposed new world order at the end of the war, represented by the Yalta Agreement and the Bretton Woods System, was merely the re-establishment of the Versailles System.

Today, the world has arrived at a point of crisis. This question will either be positively answered or the inability to do so will occasion a collapse of civilization to an extent that few people today imagine. The depression in the Anglo-American sector and Eastern Europe, the collapse in the C.I.S. states, but also the spread of hunger, epidemics, and the potentially species-threatening epidemic of AIDS, are merely aspects of the impending catastrophe. We have arrived at the crossroads, and the world will only survive if it becomes possible for all the nations on this planet to develop themselves and to respect the human rights of their citizens.

The Principles of Natural Law

Time and again in the history of Europe there have been great thinkers, who have taken as their program the vision of a plan for world peace. All the philosophers in the tradition of Christian humanism represent the cultural-optimistic conception that human beings will one day overcome the childhood disease of their species in the form of the oligarchical structure, and organize their states and the relations among their states according

'The *Productive Triangle Program* is based on the assessment that this region is currently the only one in the world, from which a *locomotive effect* for the world economy can emanate. From here, an integrated infrastructural network must be realized, that can join together the existing industrial centers of the Eurasian continent.'



Paris-Berlin-Vienna "Productive Triangle" (shaded), with corridors of infrastructure/transportation development.

to the principles of natural law.

For example, the Spanish philosopher and poet Raymond Lull had this outlook. In the thirteenth century, he presented a plan for world peace in which international cooperation was arranged by an organization that met regularly and was designed to contribute to the inner transformation of human beings for the realization of a peaceful world.

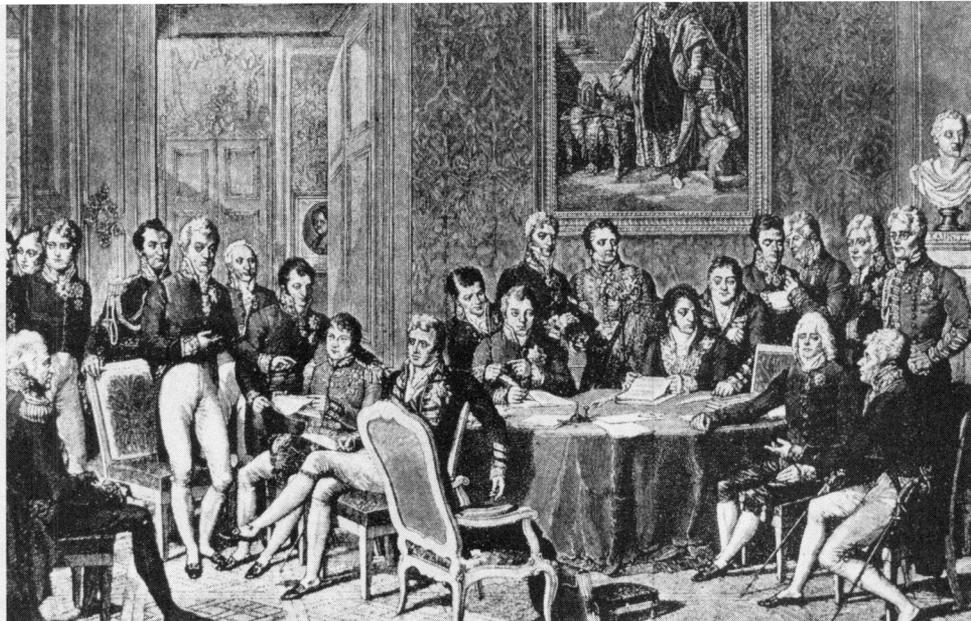
Nicolaus of Cusa, the founder of modern science, developed a concept of states living together that anticipated the modern idea of a community of nations. World peace—*concordantia*—is possible only if all nations develop themselves in the best possible way, and so organize their relations to one another, that they are oriented toward maximum mutual development. If each nation sees its own interest in assisting the development of all

others, there can be no conflict.

Nicolaus, who saw the human soul as the origin of all scientific discoveries, regarded every single step forward in human knowledge as so important that he proposed that every discovery be immediately recorded in an international depot to which each nation had access, so that development might not be unnecessarily obstructed in any nation! This total opposite of the barbarian concept of "technological apartheid," which is supported today by the advocates of the New World Order, was proposed by Nicolaus in the first half of the fifteenth century.

Approximately two hundred years later, Gottfried Wilhelm Leibniz began for the first time to translate the idea of world development into reality, at least as a start, through his cooperative work with Czar Peter the Great.

‘German-Russian’ cooperation based on republican principles could have led to a repetition of the American Revolution on European soil, but all the oligarchical forces of Europe conspired against this. The result of the Congress of Vienna was the Holy Alliance, which embodied the British strategy of *balance of power*. This dynamic led first to World War I, and then to World War II.’



The 1815 Congress of Vienna.

Leibniz saw the task of Europe as developing the rest of the world through a division of labor. France should assume responsibility for Africa, Germany for the East. Under Leibniz’s influence, Peter the Great carried through the great pioneering reforms whose effect on the self-consciousness of the Russian population was an important precondition for overcoming their backwardness. The reactionary part of the Russian nobility rescinded them after Peter’s death.

In the same tradition was the cooperative work between the Prussian reformers and the court of Czar Alexander I, particularly a group of scholars at the Academy of Sciences, which had been conceived by Leibniz. The lectures that Schiller’s brother-in-law, Wilhelm Friedrich Ernst von Wolzogen, gave on Schiller’s *History of the Thirty Years War*, played an important role in the strategic planning for the campaign against Napoleon, for which vom Stein and other reformers trained the Russian army.

This phase of German-Russian cooperation was founded on republican principles and a humanistic concept of the state. The buildup of the young American republic was followed with great interest. The collaboration of U.S. minister-without-portfolio John Quincy Adams with the Russian prime minister, Count Rumyantsev, was clearly directed against the British attempts to undo the events of the American Revolution. Previously, the League of Armed Neutrality, conceived by Academy member Franz Epinus, had been essentially responsible for protecting deliveries from continental Europe to America during the War of Independence.

The Russian minister of finance, D.A. Guryev, published in 1807 a translation of Alexander Hamilton’s *Report to the Congress on the Subject of Manufactures*. He

thus circulated the economic theory that Friedrich List later characterized as the “American System,” in contradistinction to the “British System.” In the area of education, Malinovsky also supported ideas that were similar to those of von Humboldt.

During the War of Liberation of 1813, a constitutional movement arose in Germany that was strongly marked by the spirit of the German Classics, and had the goal of unification of Germany, which was still fragmented into approximately three hundred small principalities. When vom Stein and von Humboldt participated as German negotiators in the Congress of Vienna, they cherished the thoroughly justified hope of being able to achieve a German state oriented toward republican principles.

Unfortunately, the reformers could succeed neither in Vienna nor in Russia; otherwise the already initiated German-Russian cooperation would have guided the destiny of Europe in a more positive direction. This could have led to a repetition of the American Revolution on European soil and the founding of a community of principle of sovereign nation-states.

But all of the oligarchical forces of Europe conspired against this potential: Castlereagh, Metternich, Capodistria, and Talleyrand, as well as the reactionary nobility at the Russian court, which drew Alexander I into its camp, and similar forces in the Prussian court. The result of the Congress of Vienna was the Holy Alliance and, with it, a system that rescinded all reforms for the benefit of the corporative states and simultaneously embodied the British strategy of “crisis management” and “balance of power.” In the Holy Alliance the system was created whose dynamic led first to World War I and then to World War II.

During the time of the Revolution of 1848, Lord Palmerston found it in Britain's interest to support Mazzini's "Young Europe" movement and to help overthrow Metternich—not so much because he had been opposed to the policy of the Holy Alliance but rather because he wanted to transfer the center of power from Europe to the British Empire.

When Czar Alexander II sent Russian warships to San Francisco and New York City in support of Abraham Lincoln, and threatened the British with war in Europe if it should further support the Confederate states against the Union, and thus the splintering of the United States, England saw its world hegemony seriously threatened. Ultimately, the beginning of British preparations for World War I go back to this experience. For the cooperation of America under the leadership of Lincoln with Russia under Czar Alexander II, could have meant the beginning of a community of principle of sovereign nations. The murder of Lincoln and the destabilization of Alexander II prevented this, however.

When, toward the end of the nineteenth century and the beginning of the twentieth, an epoch-making industrial revolution developed on the European continent, the British fear of losing world domination solidified in the geopolitical doctrine of Milner and Mackinder. This doctrine was rooted in the idea that the Atlantic-rim states would be reduced to economic and political insignificance by the strengthened Eurasian heartland.

England saw its own supposed interest most threatened when the Russian Minister of Finance Count Witte, a professed, enthusiastic follower of Friedrich List, attempted to organize France and Germany in a common economic development plan with special emphasis on a common railroad network. Were such an integrated industrialization to have occurred on the Eurasian continent, it would have been able to spread quite organically over the entire earth and particularly into the Southern Hemisphere, and that would have meant the end of British colonialism and imperialism.

To destroy this French-German-Russian cooperation was therefore England's supreme goal. After the Fashoda Crisis of 1898, England manipulated France with the help of the Anglophilic Foreign Minister Delcassé in the *Entente Cordiale* (1904). In Russia, with the help of its friends in the Interior Ministry and the Okhrana, it encouraged the forces which were opposed to industrialization and the liberation of the serfs, ultimately unleashing those disturbances that led to the Bolshevik revolution.

After the potential for French-German-Russian cooperation was destroyed, and France and Russia were allied with England against Germany (1907), it was but a small step to war in the Balkans and World War I. Europe

has not yet actually recovered today from the senseless slaughter of trench warfare that uprooted an entire generation, spiritually and morally. And without the hideous experience of this bloodbath, Hitler would have been inconceivable.

The Versailles System

The Versailles Treaty that, using the maxim, "Might Makes Right," declared Germany to be solely responsible for World War I, consolidated the war goals of England: Germany was put under such disproportionate conditions with payment of war debts, and its economic possibilities were simultaneously so restricted, that it was supposed to be suppressed forever. The Versailles System was the anticipation of the Morgenthau Plan, and turned Europe into a debt cartel that conformed to Anglo-American geopolitical conceptions. Simultaneously, the states of Central Europe were so fragmented or arbitrarily lumped together that a later "crisis management" would be possible at any time through the fomenting of ethnic conflict.

Against this background, it is also understandable why the head of the Bank of England, Montagu Norman, or the Morgans or the Harrimans in the United States, showed far more interest in financing Hitler and the National Socialist Party of Germany on Hjalmar Schacht's recommendation than in supporting, for example, the policies of Kurt von Schleicher prior to Hitler's seizure of power. In this context also belongs Churchill's answer to the question of a British member of Parliament, as to why England had not supported the German resistance. The answer was, that would have helped the forces to power that suited England's interest even less than the Nazis.

Allowing Stalin to march into Berlin would also not have been at all inevitable. But at the conferences in Teheran, Yalta, and Potsdam, that East-West division of Europe was agreed on, which was to make Eurasian economic and political cooperation impossible in the long run. The captive nations of the East were sold out, and a condominium was established in respect to Germany, in which France again played the role of junior partner to the Anglo-Americans, as previously in the *Entente Cordiale*, while the Soviet Union was allowed to control the eastern part of the condominium.

An integral component of the new formulation of the Versailles System through Yalta was the Bretton Woods System, which put the developing nations at a disadvantage from the beginning, through the establishment of currency parities, thus forcing them to export cheaply and import dearly. In this way, the actual colonial status of these countries was established, despite their formal

self-determination. Since approximately the mid-1970's, the gap in development between North and South has dramatically widened, as a consequence of the enforcement of the notorious brutal conditionalities of the International Monetary Fund.

This Versailles System, which is responsible for two world wars in this century and literally hundreds of millions of dead, especially in the Southern Hemisphere, has come to its end. But we are not living through a peaceful transition. Acts of war in the Balkans, in the Transcaucasus, and in the Near East, and the smoldering danger of a spreading, larger war, are accompanying this collapse.

better position to assess the actual economic situation.

If we merely consider the realities of the "physical economy," it is crystal clear how criminal it is to shut down expensive productive capacities when scarcity still holds sway over virtually everyone in the East and the South. From this point of view, it means genocide, if we demand, in the framework of the GATT negotiations, the throttling of agricultural production, while many millions of human beings die of famine, and hunger wars represent the greatest threat to world peace.

The reality is that, as the result of decades-long neo-Malthusian and post-industrial policies, industrial and agricultural capacities have fallen far below the level that

'Europe has not yet actually recovered today from the senseless slaughter of trench warfare that uprooted an entire generation, spiritually and morally. Without the hideous experience of this bloodbath, Hitler would have been inconceivable.'

UPI/Bettman Newsphotos



Trench warfare, World War I: the Hindenburg Line.

A World Peace Plan Today

If we want to prevent chaos, civil wars, and possibly even a major war from occurring once again, we must now implement precisely the policy that the Versailles System was supposed to prevent. That is, we must build up and make use of the economic and development potential that has become possible through cooperation on the Eurasian continent, in order to free the Southern Hemisphere, from here, of its catastrophic poverty.

Once we have recognized the unscrupulousness of the financial sharks of the so-called "free market" in their limitless personal greed, and simultaneously distanced ourselves from the accountant mentality of the so-called economic experts and managers, we will be in a far

would be necessary to feed and care for the human beings now alive. A world economic system that pursues any interests other than creation of the basis of existence for actually existing human beings, is a perversion.

Precisely because, in the Anglo-American sector, previously existing capacities have been dismantled for ideological reasons, and Japan is playing a certain peculiar role, a solution to the problem can only come from a region that is approximately described by the "Productive Triangle."

For only here, in a space of the total area of Japan, are the concentrated industrial capacities and the reservoir of highly qualified labor forces that are necessary to attain the "locomotive effect" for the otherwise depressed world economy. Through directed investments in infra-

structure and technological renovation, double-digit growth rates can be achieved here that can effect the necessary capital goods output for development of the East and South.

It can be demonstrated from many historical examples that such investments in infrastructure programs were always the precondition for the development of a productive, private middle class. That is true for industry as well as for the agricultural family businesses. Since middle class, private businesses are the foundation of every productive industrial society—because these provide the best preconditions for increases in productivity through technological innovation—it is in the most fundamental

eliminated: on the one hand, the considerable costs of the unemployed and, on the other hand, the costs that arise for the productive economy from a lack of infrastructure.

It can be demonstrated that in every case of such productive credit creation, the revenues of municipalities were higher through augmented tax revenues than the original credit issued. Therefore, these infrastructural programs actually “cost” nothing, but they stimulate the economy. They are also not inflationary, because they are issued exclusively with regard to future production, and even increase productivity. The historical example for this is the financial policy of the first U.S. Treasury



Yalta Conference, 1945: Churchill, Roosevelt, Stalin.

‘At the conferences in Teheran, Yalta, and Potsdam, that East-West division of Europe was agreed on, which was to make Eurasian economic and political cooperation impossible in the long run.’

UPI/Bettman

interest of the state to create the necessary framework conditions for this middle class.

Infrastructure is, of course, the precondition for a successful industrial development, but itself hardly yields short-term profit. Therefore, the state must assume responsibility for it. Every government of a sovereign nation-state has in principle the right to create state credit for areas that are in the interest of the commonwealth. This credit must not, however, be used for current budget expenditures; it must be strictly tied to projects, and must also be low-interest and long-term.

Such state credit is generated by a yet-to-be-created national bank, and is issued by local financial institutions to firms, that are directly involved in infrastructural programs. In this way, two essential cost factors are

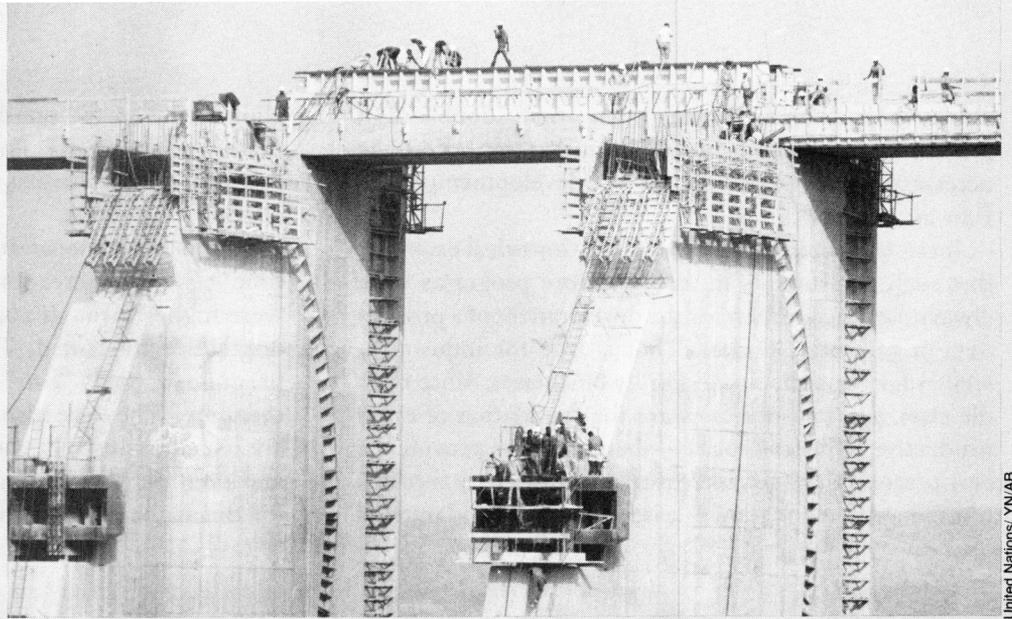
Secretary, Alexander Hamilton.

If we intend to solve the gigantic task before us, then we need something additional: a new industrial revolution in which science, as the motor of the economy, raises the productivity of labor to a higher level.

For at every stage of development, there corresponds to the technology used in production a quite definite *relative potential population-density*. At the beginning of the 1970's, it would have been easily possible to feed all the human beings then living on the earth with the then-existing technology and to create for them a form of existence worthy of human beings. But, by now, this is no longer the case in the same way.

Without continual technological progress, no society survives, because the appropriate resources (raw materi-

‘Through directed investments in infrastructure and technological renovation, double-digit growth rates can be achieved in the Productive Triangle that can effect the necessary goods output for development of the East and South.’



Kainji Dam construction, Nigeria.

United Nations/ YN/AB

als) are always relatively limited on each technological level. Only scientific progress and the development of entirely new technologies define new raw materials. Thus, mankind can only survive in the long run, if scientific-technological progress always continues. That is a fundamental law of nature. And this natural lawfulness must not be violated, if we are not to risk this infraction recoiling on humanity.

It already was foreseeable at the beginning of the 1970's, that the living standards of entire continents could not be lowered with impunity, as that would weaken the immune system of whole populations in such a way that, without fail, new diseases and epidemics would spread. Whatever the cause for the emergence of the HIV virus may have been, one thing is certain: There exists a direct connection between the rapidity with which it spreads, and the degree of poverty and lack of care of human beings in the region in question.

If we intend to save the human beings alive today—and we must do that because AIDS is a species-threatening epidemic that could wipe us all out—then an industrial revolution sparked by scientific progress is necessary for several reasons.

Today, optical biophysics is the single identifiable field in which fundamental breakthroughs in virology may be expected. But non-linear spectroscopy, which is in the scientific tradition of Louis Pasteur and the Ukrainian scientists V.I. Vernadsky and A.G. Gurwitsch, also offers the possibility of a new scientific revolution in other areas of biology and medicine.

The great advantage of Eastern Europe and the republics of the C.I.S. lies primarily in the relatively large number of engineers and scientists that can also be employed in the other vanguard areas. Those include, for

example, laser technology and plasma processes, high-temperature super-conductors, and other new materials. We must concentrate on “hot” and “cold fusion,” and likewise on astronautical technology.

Only if we aim at significantly higher productivity rates through this kind of industrial revolution, and thus again approach the potential population-density of the actual population-density, can we avoid the biological holocaust of entire continents.

We must liberate ourselves from the remnants of thinking within the context of a geometry determined by the Versailles System, and see that the human species will survive only if we allow all nations of this earth to develop. This means a total renunciation of any “technological apartheid.” The developing countries do not first need to pass through all the technological stages now obsolete to us, as though it were a matter of worn-out clothes handed down from older to younger brothers and sisters. The countries of the South should leap over some steps and use their academically trained elite, educated in part abroad, for that purpose.

A continuation of the so-called policy of free trade and the further transfer of industry to the so-called cheap production countries does not benefit either the industrial countries—whose industrial capacities are thus destroyed, or the developing countries—where this demonstrably means the most brutal human exploitation.

The economic-theoretical conceptions that are hidden behind the concept of cheap production originate completely and totally from oligarchical thinking, that is, from the idea that the source of wealth is ownership of land and the right to exploit this land in the cheapest possible way.

Proven Economic Theory

The uniquely successful economic tradition of Leibniz, Hamilton, and List sees the sole source of wealth exclusively in the creative individual and the specifically human capacity to qualitatively increase productivity through ever new discoveries and their application in technological and industrial areas. That means nothing other than that the most fundamental interests of the state must lie in promoting the creative abilities of the population in the best possible way, since nothing else is, ultimately, the foundation of the commonwealth.

This is obviously true for the peoples of the Southern Hemisphere and the East as well as for Germans, Frenchmen, or Italians. For this universal human image of the Christian West, which comprehends every man as *imago viva Dei*, as the living image of God, represents the source of European culture and civilization that allows Europe to be so relatively privileged today.

The ecumenical concept of human beings as the "image of God," according to which human creativity is rooted in the fact that man seeks to imitate the most noble ability of the Creator God, is, however, necessarily universal, and is true of every human being on this planet.

In the case of the developing countries, which for centuries were exposed to slavery and must suffer

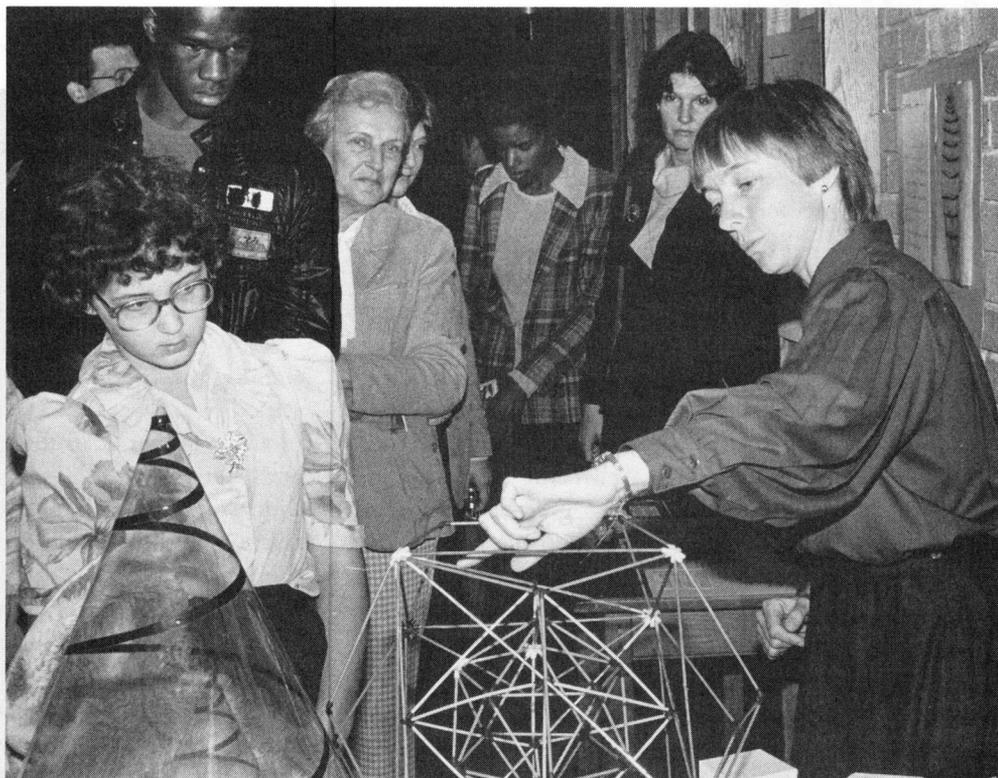
through a lack of development caused by colonialism, development programs for at least two generations must be formulated, so that at least the next generation has the chance to receive food, housing, medical care, and education worthy of human beings.

In our modern times, it seems almost as if great catastrophes were necessary before human beings are willing to address the fundamental question of the meaning of our existence. Thus, it was no accident that, following the terrible destruction of World War II, the natural-law debate was revived, because the more circumspect among the contemporaries living then, tormented themselves with the question of how this collapse could have come about. The same question is justified today.

We must urgently return to a conception of man based on natural law, which proceeds from the fact that innate and inalienable rights are given to man by the order of creation. These human rights are not only the right to life, housing, work, and so forth; they rather represent in a far more profound sense the right of human beings to develop all their inborn abilities.

This unfolding of the creative potential of human beings is, however, not a goal in itself, grounded merely in the existence of the single human being. Rather the development of the creativity of the individual is necessary so that he can contribute in the best possible way to

'What we need today in instruction is neither narrow orientation toward some fashionable job, nor social studies tied to the capricious spirit of the times. Only when children, adolescents, and adults are familiar with the best products of European and universal culture, can the feeling of responsibility for the human species come into existence in the correct way.'



Schiller Institute "Pedagogical Museum," Baltimore, 1983.

EIRNS/Suzanne Kiebe

‘The second phase of the peaceful revolution will only be successful, if it takes as its program the great vision of a world development plan. A movement must be built that considers itself a consciously operating part of an international coalition for realization of this program.’



Russians demonstrate in Moscow for Lyndon LaRouche's freedom, June 1992.

the development of the human species. Through his creative activity, the individual brings the lawfulness of his thinking, the *microcosm*, into ever greater agreement with the laws of the *macrocosm*.

The universal thought formulated by Nicolaus of Cusa still has its full validity today; namely, that peace in the macrocosm, and thus in the world as a whole, is only possible if all microcosms develop, and that an order of peace can never be founded on a heterogeneous, subsidiary order, and thus merely on the interest of a portion of humanity.

Perhaps that does not seem very realistic in our time, in which politics is generally connected with corruption, ambition, and mediocrity of thought. But if we do not try to bring the political order into agreement with the laws of the order of creation, we cannot succeed.

However, in order that human beings may again learn to become conscious of their responsibility to the species, it is necessary to strengthen the consciousness of species within them. For we are not born to consume as much as possible in the here-and-now, and to achieve the egotistical right to our personal well-being by elbowing out everyone else. We must rather grapple with the question of what enduring contribution we can make during the short interval of our life.

Wilhelm von Humboldt sketched a model of education that aimed precisely at this character development of the student. The first necessity is not the learning of specialized knowledge—that can be accomplished at any time, according to changing demands—but rather the formation of personality and of consciousness as the citizen of a state, who develops responsibility for the community.

Humboldt rightly recognized that imparting certain fields and branches of knowledge can fulfill this task. Among those are the student's mastery of his own literary language as a precondition for his own thinking. Additionally, the possibility of reflection on that language comes from learning one or more classical languages from antiquity, along with modern languages. Also included are universal history, natural science, music, geography, philosophy, etc.

What we need today in instruction is neither narrow orientation toward some current, fashionable job, nor social studies tied to the capricious spirit of the times; rather, we must return to Humboldt's universal education. Only when children, adolescents, and adults are familiar with the best products of European and universal culture, can this feeling of responsibility for the human species come into existence in the correct way.

Only when the individual human being can understand in his mind what conceptual achievement is represented in the successive advancements in mastering the physical universe, in the composition of classical music and poetry, as well as in the unfolding of the concept of human rights, will he be able to arrange his life in relation to that. The creative achievements of the great thinkers of the past must become the metaphors of a scientific treasure in his mind, from which he can then develop new concepts necessary for our present and future.

To return to the point at which we began: We need a second phase of the peaceful revolution, which takes into account the fact of the expiration of the Versailles System. It has become obvious that, in this situation, the problems of an individual country or region can no

longer be solved on a local, regional, or national basis.

This second phase of the peaceful revolution must therefore be directed against the unjust structures that are the principal reason for all our problems, and this is today without doubt the economic and financial policies that caused the economic crisis and are now making it continually worse. These are the structures of “unbridled” liberal capitalism and its institutions: the IMF, the World Bank, and GATT.

If the political will can be mobilized, it will be relatively simple to create a new international financial system that again sets the world economy into motion through project-tied productive credit creation. We can rely here on the many successful examples of Alexander Hamilton, and Friedrich List, but also the Meiji Restoration in Japan, Count Witte, or Adenauer and de Gaulle.

The second phase of the peaceful revolution will only be successful, if it takes as its program the great vision of a world development plan. It must be supported by the idea that only a new, just world economic order can create the framework within which there is some prospect for the solution of other equally urgent problems.

It is therefore necessary to create a new organizational form that corresponds to this goal. A movement must be built that considers itself a consciously operating part of an international coalition for realization of this program.

The direct focus must be the realization of the program of a Eurasian infrastructure program, as an emergency program to be realized immediately, in which the concept of the “Productive Triangle” is decisive as the motor of the world economy.

The catastrophic economic situation in Eastern Europe, the increasingly deteriorating situation in Western Europe, and the recent data on the indebtedness of Germany, demonstrate that there cannot be an island of prosperity. Therefore, the new coalition must direct all its efforts to push through an alternative financial system for the creation of productive state credit.

‘We Are the People’

But something else is at least as important. In the East, the mood of joyous hope of the peaceful revolution gave way to deep bitterness over experience with the so-called “free West.” In the West, on the other hand, peevishness over party meanness and corruption has gained the upper hand. If this situation continued, then the historic chance offered by the opening up of the borders would be lost.

The brave men from the East, who risked their lives for freedom, have collectively been shoved aside. The

“pro’s” have everything firmly under control, even in the collapse and ruin. Human beings, who rightly said, “We are the people!” no longer have any influence, and see no connection between the decisions of politicians and their own existential problems.

Therefore, a new force must be organized that will participate in the formation of political life in such a way that the interests of “the people” are guaranteed. The party system in its present form has become questionable since the “democratic” parties have a tendency to be ultimately controlled by very undemocratic power elites or to degenerate into robber bands, as Cardinal Ratzinger has remarked.

The new political force must therefore be constructed on the basis of the representative republican system, in which the different representatives are responsible directly to their own individual bases. Thus, a reciprocal legal relationship will come into existence between government and those governed.

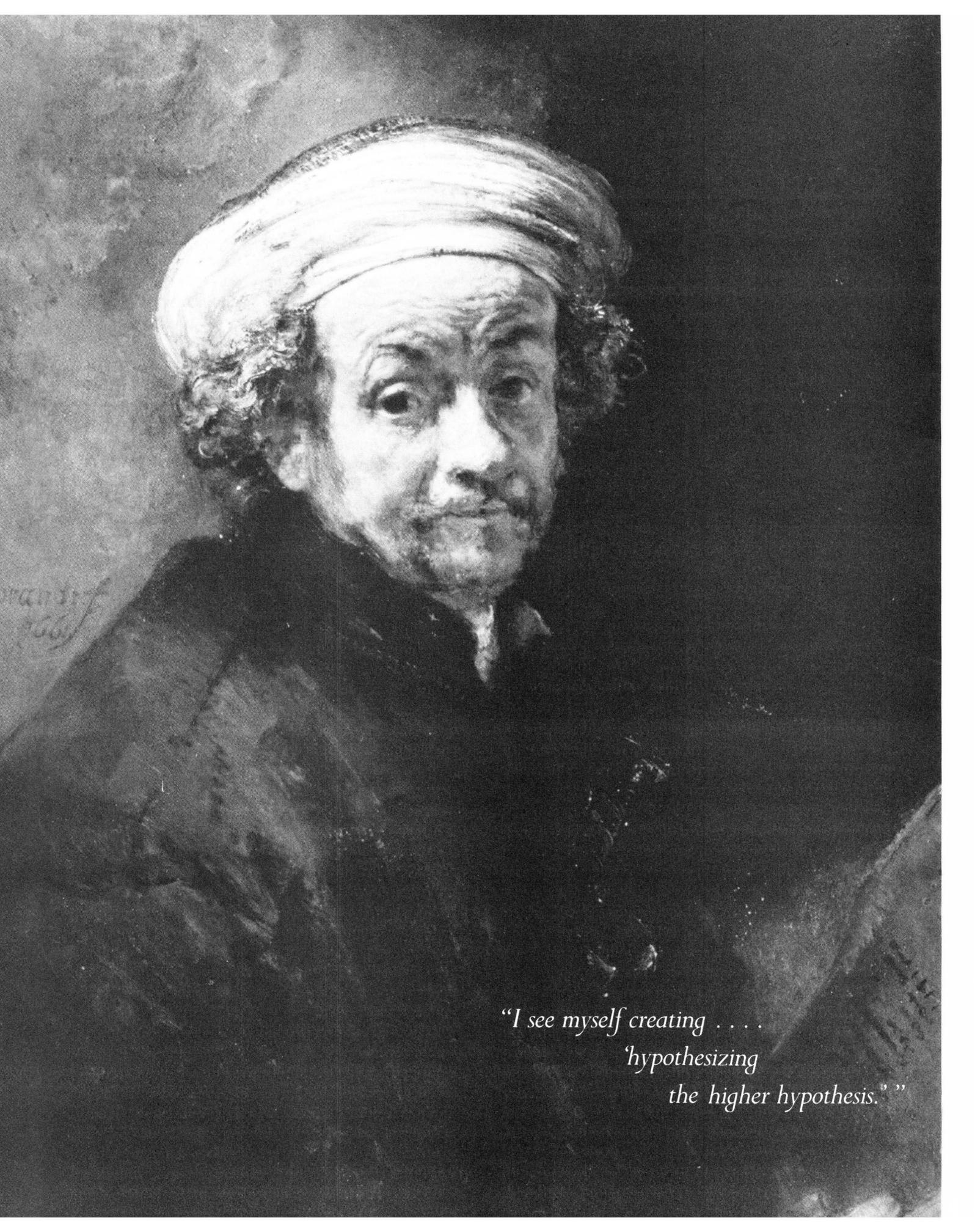
Only through the representative system within a sovereign national state can the freedom of the individual and his active participation in the government be guaranteed. If all representatives orient themselves toward the realization of the common good, a harmony of interests on the level of reason is possible. But, in this case, the interest of one nation state can never come into conflict with the interests of mankind as a whole, but rather must promote it.

And that means: We must all join ourselves to the inalienable human rights of all, as in the “Rütli Oath” of Friedrich Schiller’s *Wilhelm Tell*:

No, there’s a limit to the tyrant’s power,
When the oppressed can find no justice, when
The burden grows unbearable—he reaches
With hopeful courage up into the Heavens
And seizes hither his eternal rights,
Which hang above, inalienable
And indestructible as the stars themselves—

More than two years have passed since the peaceful revolutions in Eastern Europe. Had the governments of Western Europe at that time seized upon the plan for economic development of the East as proposed in the concept of the “Productive Triangle,” relations between East and West would have been placed on an entirely new basis. And the historic initiative would have remained on the side of Europe, which would have been to the benefit of the developing countries also.

Instead, all that came from the historic chance was a gigantic lost opportunity. It is now up to those who have consciously lived through this phase, to draw the consequences from this experience.



*"I see myself creating
'hypothesizing
the higher hypothesis.'"*

On the Subject of METAPHOR

by Lyndon H. LaRouche, Jr.

During the twenty-five-odd year reign of today's "New Age" cult, an ominous crippling of the U.S. individual's cognitive functions has been abuilding. This loss of mental capacity is presently affecting a growing majority among the under-fifty generations. Much of this damage is attributable directly to the multi-faceted influence of a modernist dogma which usually parades under such various names as "systems analysis," "linguistics," and "information theory."

Today, for example, rarely are pupils guided to reproduce, within their own minds, the Socratic experience of re-living the original discovery of crucial principles of scientific knowledge. Lacking the benefits of such once-traditional forms of secondary school learning in the subject matter of rigorous formal and synthetic geometries, for example, today's student would virtually never be able to attain an intelligible comprehension of even the bare fundamentals of physical science. Thus, today's modernist classrooms have been turned away from what is too often reviled as "authoritarian" teaching of conceptions; more and more, the modernist's "democratic" classroom and sterile textbook merely "provide information."

Similarly, a generation has passed since the time it was still fashionable to assess a pupil's progress in terms of that student's ability to apply prior learning to the effect of discovering, promptly, appropriate constructions of relevant solutions to unfamiliar problems. More and more, schools employ the "more efficient" practice, of degrading education to the rehearsing of pupils for passing computer-scorable forms of multiple-choice questionnaires.

These, and other enumerable applications of the pathological information theory doctrine, have brought upon us much of that widespread collapse of the individual victim's attention span which has occurred lately, accompanied by a correlated loss of the potential for those qualities of rationality which are associated with

achievement in science and technology. That loss of scientific rationality is linked functionally to a parallel loss of personal capacity for comprehension and enjoyment of such once-respected fine arts as great music or the classical tragedies of Aeschylus, Cervantes,¹ Shakespeare, and Schiller.

Such observations pose the question: What makes an ostensibly innocent technical doctrine, such as information theory, so wickedly pathological in its social effects? The most efficient tack for exposing the answer to that question, is a more rigorous, Socratic definition of the fine arts term, metaphor. We signify "metaphor" as William Empson's *Seven Types of Ambiguity*²—for one—has identified it, as a phenomenon customarily associated with classical forms of poetry and drama. However, by "more rigorous," we should also show metaphor as the crucial feature of those thought-processes bearing upon the geometrical fundamentals of physical science.

That sets the task before us. So, without more foreword, to work.

I.

What Is Metaphor?

In the case a literary construction points directly toward one object of attention, the ostensible subject, while uttering direct or implied reference to a different object, we have literary *irony*. Usually, to put the matter in its simplest terms, such irony is expressed usually in one of three forms: *comparison*, *hyperbole*, or *metaphor*. We may summarize fairly the most widely accepted academic view of this kind of ambiguity in the following terms.

The substitution of the name of another object for the customary name of the object in view, is traditionally considered in such academic climes as a matter of *symbolism*; that interpretation of these devices of irony is mistaken. Exposing this mistake of the academics leads

Rembrandt van Rijn, "Self-Portrait as the Apostle Paul," 1661 (detail) (SEE inside back cover).

us, in the relatively most direct way, to recognize that pathological fallacy of composition upon which Professor Norbert Wiener's information theory dogma is premised.

For this purpose, reference the domain of elementary geometry.

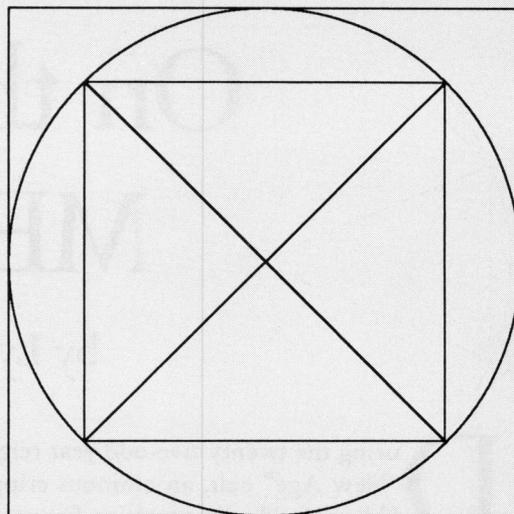
At an appropriate place in the secondary curriculum, the traditionalist teacher of secondary school geometry introduced the Pythagorean Theorem. The pupils of that class were guided to re-experience the mental act of original discovery by Pythagoras himself, thus to reconstruct a copy of that aspect of Pythagoras' creative mental processes within the mind of each of the pupils. This new existence within the pupil's own mind is itself an object of a special kind, a thought-object identified by the *metaphorical* name "Pythagorean Theorem."

The crux of this example is the fact, that the thought-object associated with the metaphorical name "Pythagorean Theorem," is neither an object of the outward senses, nor an object which can exist explicitly within any medium of communication.³

In this location, our primary argument is focused upon another example from the realm of synthetic ("constructive") geometry, Nicolaus of Cusa's revolutionary insight into the paradoxical Archimedes' Theorems which treat the subject of squaring the circle.⁴ This example shall serve us here, henceforth, as the model reference for an initial, more rigorous definition of classical metaphor. It is also a point of reference, therefore, for treating Wiener's fundamental fallacy.

Cusa proved, early in his adult life, that no curved line can be generated by means of joining together many very small straight lines. This proof led directly to the seventeenth-century discovery of the principle of physical least action, that all physical functions are of a species termed "non-algebraic" (or, "transcendental"), rather than arithmetic or algebraic. This, Cusa's referenced discovery, has the positive relevance, of being the continuing point of origin, and the mathematical cornerstone of the past five hundred years' birth and development of modern physical science.

The additional consideration to be stressed, is that this particular discovery by Cusa typifies all cases of creative forms of fundamental discovery in both science and the fine arts. That is to emphasize: solutions to real problems for the case that there exists no solution solely by means of deductive methods of argument. Those non-deductive solutions, solutions by methods which cannot be represented explicitly by any linear medium, such as communications media, typify the class of thought-objects to which belong the pupil's reliving of Pythagoras' discovery and of Cusa's discovery of an isoperimetric *species* of circular action absolutely distinct from the



species of all possible linear functions.

It is thought-objects of that class which are the center of our attention here. It is the use of *communicable* arrays of *names* to identify members of that special class (species) of thought-objects, which we hold forth here as the proper form of illustration of the principle of metaphor.

We shall return to the case of metaphor in fine arts practice, after we have explored the definition of metaphor in the practice of physical science.

Squaring the Circle

Cusa reworked the four theorems of Archimedes on the subject of squaring the circle, by constructing a square whose area is equal to, and derived by construction from the preceding construction of a given circle. This assignment might be interpreted in two alternative ways. The student of algebra would wish to construct a square whose area (a^2), differs by no more than a negligible amount from that of a given circle, πr^2 . The student of constructive geometry would demand that we accomplish this algebraic result by no means other than a strict, explicitly, exclusively geometric argument. Cusa focused upon the latter, geometric requirement.

From the secondary geometry classroom: the method for estimating the area of a square approximately equal to that of a given circle, is this. Simultaneously inscribe and circumscribe a pair of regular triangles, or squares (SEE Figure 1). Next, by halving angles, by construction, repeatedly double the number of sides to, for the squares, some number equal to 2^n . Take the average of the areas of the two polygons; estimate the value of π , the ratio of the circle's perimeter to its diameter, by dividing the average area of the two polygons by the factor of r^2 (the

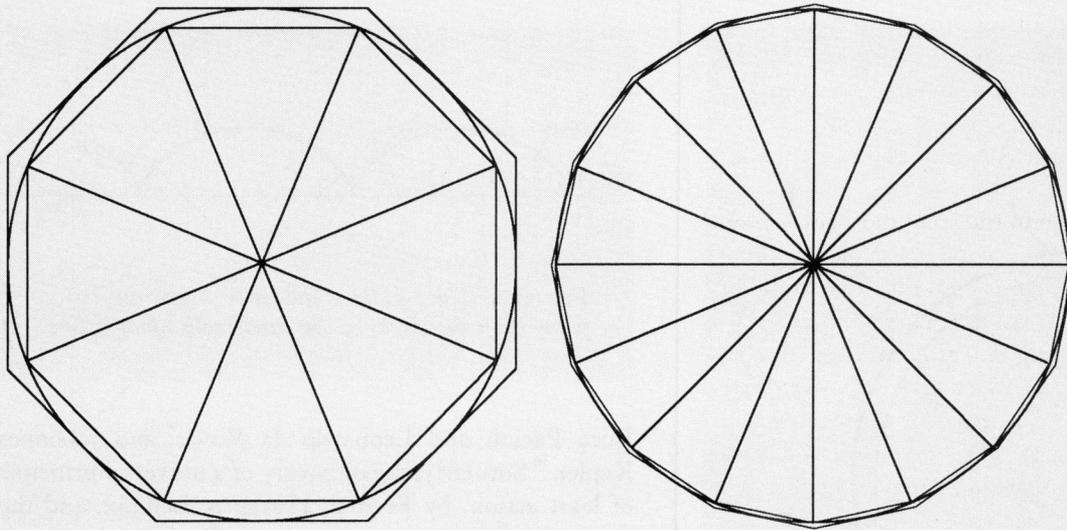


FIGURE 1. Estimating the area of a square approximately equal to that of a given circle, as the average area of two regular polygons.

square of the radius). Thus, for $n = 8$, π is estimated at approximately 3.1416321; for $n = 16$, the estimate for π is a much better approximation, 3.1415927.

Nonetheless, there is a very stubborn and profound paradox in this apparent algebraic success. This leads us to Cusa's discovery, and, from that point of origin, to the seventeenth-century discovery of a differential calculus of non-algebraic, least-action functions, by Leibniz and the Bernoullis.⁵

Admittedly, by the indicated method of estimated averages of the two regular polygons, we could estimate the square area of the given circle to any decimal position, according to the given algorithm. Ask the question: Does the perimeter of the inscribed polygon become ultimately congruent with the bounding circumference of the circle? With that question, a devastating paradox confronts us. Take the illustrative case, that $n = 16$; look at a region of the circular circumference of one minute—one-sixtieth ($1/60$) of a degree. There are slightly more than 182 angles of the inscribed polygon within each degree of measurement of the circle's perimeter—slightly more than three per minute (SEE Figure 2). At the far extreme of $n = 256$, there would be approximately 3.216×10^{74} angles of the polygon for each degree of circumference. At a mere $n = 112$, for a circle of 1-centimeter radius, the distance along the circle's circumference between angles would be approximately 1.21009×10^{-33} centimeters, approximately the limit of a Planck distance in quantum microphysics.

Thus, the more nearly perfect our estimate of the circle's square area, the greater the degree of *ontological* difference between the circumference of the circle, as a geometric species of action, and the perimeter of our developing 2^n polygon, as a second species. The more

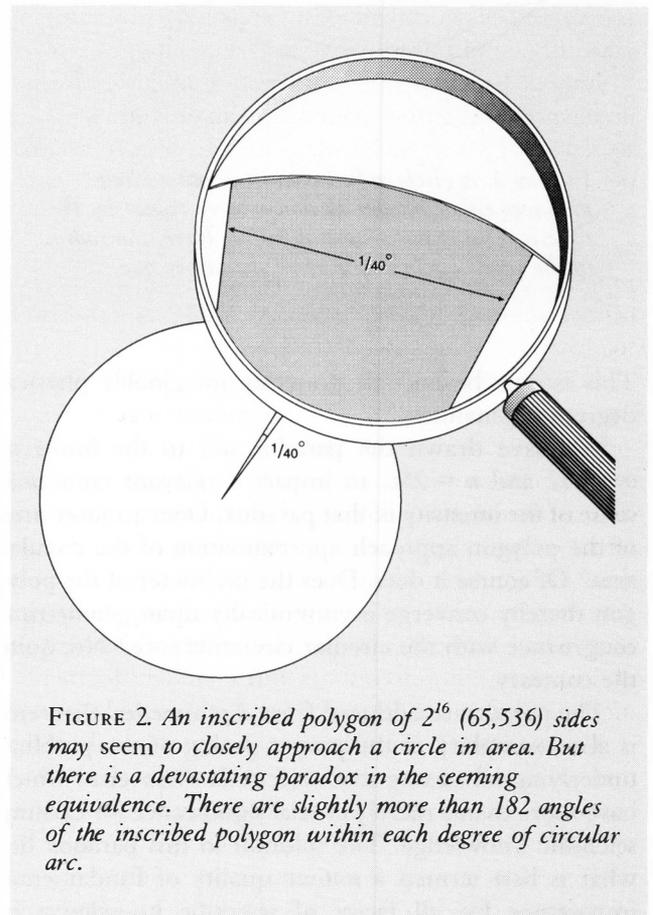


FIGURE 2. An inscribed polygon of 2^{16} (65,536) sides may seem to closely approach a circle in area. But there is a devastating paradox in the seeming equivalence. There are slightly more than 182 angles of the inscribed polygon within each degree of circular arc.

nearly the polygon's perimeter approaches the trajectory of the circle's circumference, the greater the frequency of discontinuities in the polygonal perimeter, and, therefore, the greater the difference in species of geometric form between the circular and polygonal perimeters.

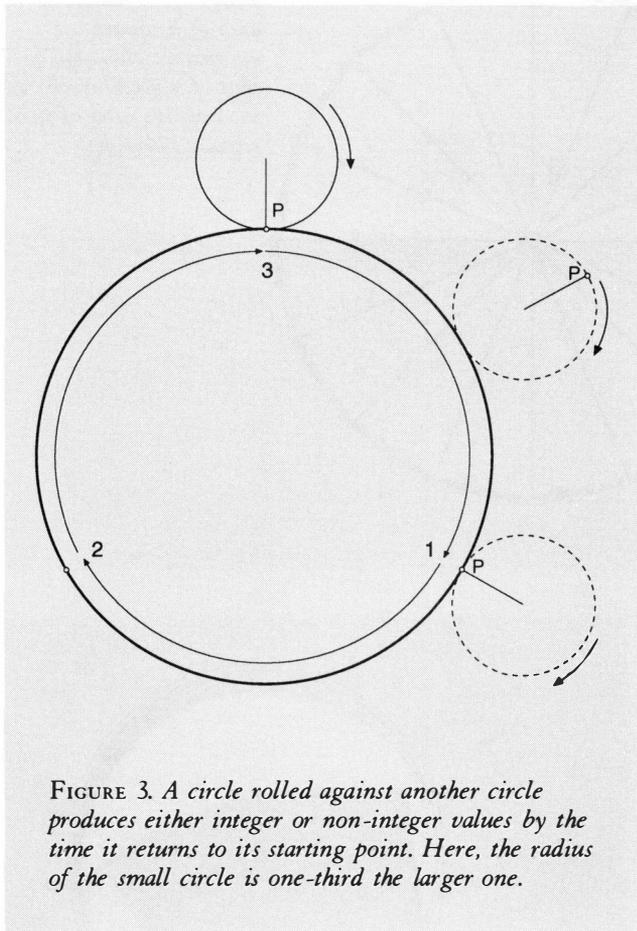


FIGURE 3. A circle rolled against another circle produces either integer or non-integer values by the time it returns to its starting point. Here, the radius of the small circle is one-third the larger one.

This is true beyond all presently imaginable physical degrees of smallness.⁶

We have drawn the paradox out to the limits of $n = 112$ and $n = 256$, to impart a relevant emotional sense of the intensity of that paradox. Does a square area of the polygon approach approximation of the circular area? Of course it does. Does the perimeter of the polygon thereby converge asymptotically upon geometrical congruence with the circular circumference? No, quite the contrary.

The paradox so adduced from Archimedes' theorem, is also exemplary of the proper posing of the problem underlying all among those scientific discoveries which have more than a merely crucial significance for existing scientific knowledge. The solution to this paradox has what is best termed a *unique* quality of fundamental importance for all facets of scientific knowledge in general.

These paradoxes are all of the type exemplified by Plato's *Parmenides* dialogue, on the all-encompassing topic of "the One and the Many."⁷ Leading subsumed cases of unique discovery include each and all of the successive treatments of the "Platonic solids" by Plato,⁸

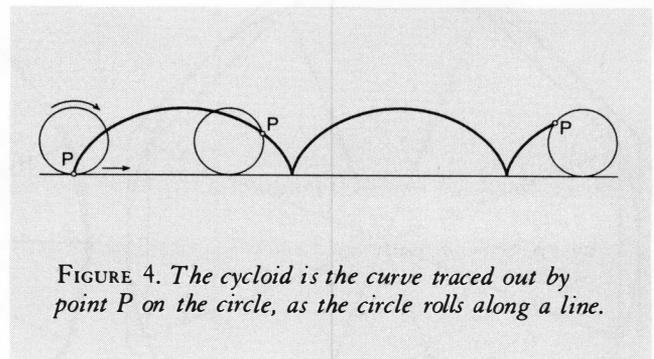


FIGURE 4. The cycloid is the curve traced out by point P on the circle, as the circle rolls along a line.

Luca Pacioli and Leonardo da Vinci,⁹ and Johannes Kepler.¹⁰ Similarly, the discovery of a universal principle of least action, by Fermat, Huygens, Leibniz, and the Bernoullis,¹¹ is derived from preceding discoveries including both the isoperimetric principle and the implications of the Platonic solids. Examine the following crucial features of those interconnections.

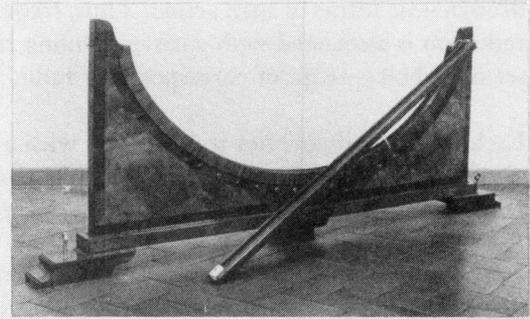
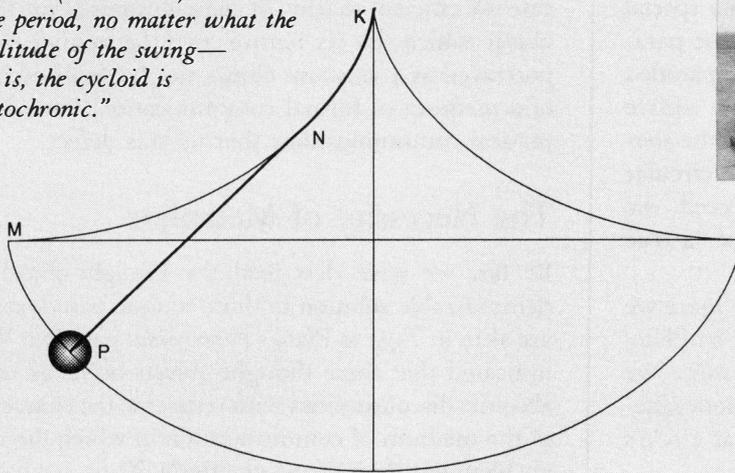
The Isoperimetric Principle

The application to the squaring of the circle of that method of addressing such a paradox which is exemplified by Plato's *Parmenides* dialogue, yields essential results which are the common feature of each and all of the solutions for a series of the most fundamental scientific discoveries of the period from c.1440 A.D. through c.1700 A.D.. For reasons to be considered, these features are all presented from a negative standpoint:

1. Circular action is a distinct geometrical *species* of action in space-time, the which cannot be derived from any *species* of linear construction. No *positive* definition of circular action may be employed, if that definition specifies in any part a required *point* or piece of *straight line* (such as a radius).
2. Circular action is defined simply (negatively) as the *least action* of closed perimetric displacement required to subtend the relatively largest area. (Thus, the Fermat-Huygens-Leibniz-Bernoulli principle of least action is already implicit, "hereditarily," in Cusa's discovery.)
3. Circular action, because *closed* (SEE Figure 3), is a form of continuous extension (continuous manifold) which contains its own metrical characteristic: counting in cycles and parts of cycles. A linear continuous manifold contains no inherent metrical quality which is not supplied to it by the external bounding imposed by a higher geometrical species of continuum.
4. Circular action bounds externally, and thus deter-

FIGURE 5. *The least-action principle embedded in cycloid functions.*

In his 1673 *On the Pendulum Clock*, Huygens demonstrated that a pendulum made to follow the path of a cycloid (curve MPI) will have the same period, no matter what the amplitude of the swing—that is, the cycloid is “tautochronic.”



A ball rolling down a cycloidal track will reach the bottom in the same time, no matter where on the track it is released. Later, Johann Bernoulli demonstrated that the cycloid also has the property of a “brachistochrone”—it is the least-time pathway. (Model in the Museum of the History of Science, Florence, Italy.)

mines all linear species of constructions.

This is underlined by the paradoxical features of the stated case for the relative uniqueness of the five Platonic solids as stated by Plato, Pacioli, Leonardo, and Kepler. That is made general by the development of treatments of the cycloids (SEE Figure 4), from the work of Christiaan Huygens onward: all physical and arithmetic functions are properly stated in nothing less than terms of those non-algebraic functions which are derived “hereditarily” from the germ of the cycloid, and from the least-action principle embedded in the cycloid functions (SEE Figure 5). This is first demonstrated in physics, from Leonardo da Vinci through the work of the Bernoullis, for light (propagation of electromagnetic radiation) and hydrodynamics.

5. The additional crucial feature of circular action, is that it defines our universe in terms of both negative and positive curvatures, with the demonstration that negative curvature predominates. This point is summed up rather neatly in Johannes Kepler’s 1611 booklet, *On the Six-Cornered Snowflake*.¹² The snowflake is a non-living process determined by the function of positive curvature in determining the close packing of spherical bubbles.¹³ The negative curvature of the interior of each and all bubbles determines structures “hereditarily” cohering with the five Platonic solids, and, thus with the harmonic orderings cohering with the Golden Section of the circumscrib-

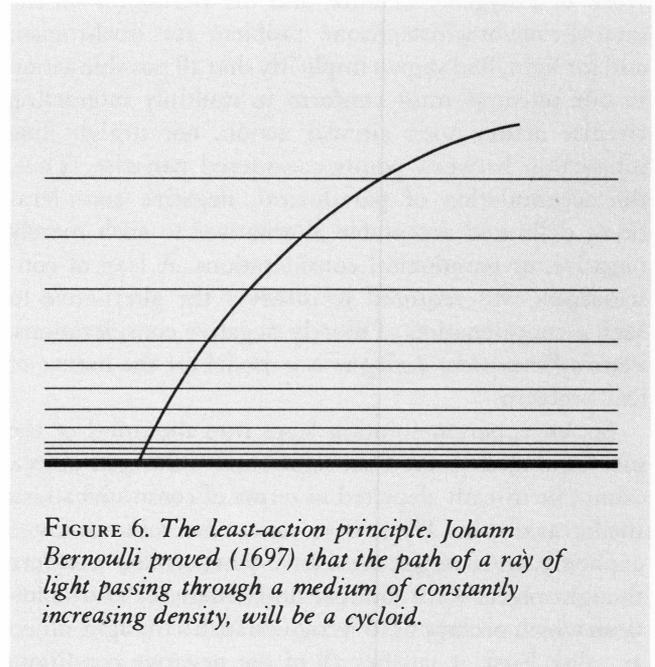


FIGURE 6. *The least-action principle. Johann Bernoulli proved (1697) that the path of a ray of light passing through a medium of constantly increasing density, will be a cycloid.*

ing sphere’s great circle.¹⁴

The universe can be considered as everywhere superdensely packed with spherical bubbles of all imaginable radii, as the unique, bounding characteristic of generalized “non-algebraic” function shows this to be necessarily the case. By the close of the seventeenth century, it was implicitly demonstrated (SEE Figure 6), that this bubbly universality of the least-

action principle is otherwise characterized by the combined notions of electromagnetic least action and hydrodynamic forms of such action. Thus, frequency of radiation is associated with a corresponding resonant set of bubbles—e.g., of corresponding radii.¹⁵

Each of these discoveries is associated with a special kind of paradox, which might be termed “a true paradox.” In the instance of squaring the circle, the paradox is, that the more successfully we estimated the square area of the circle, the more extremely we proved the *non-congruence* of the polygonal perimeter with the circular circumference. “The more we appear to succeed, the more we truly fail,” might be a fair image of “a true paradox.”

So, in the case of the five Platonic solids, the more we attempt to circumvent the limitation identified by Plato, as did Archimedes, Pacioli, and so on, the more we understand the germinal uniqueness of the dodecahedron, and of the Golden Section of that great circle’s negative curvature.

By the close of the seventeenth century, the successive work of Huygens, Leibniz, and the Bernoullis on the tautochrone/brachistochrone problem for isochronism and for light, had shown implicitly that all possible action in our universe must conform to multiply interacting circular action upon circular action, not straight line interaction between points considered pairwise. Thus, the accumulation of paradoxical, negative considerations, delimited acceptable alternatives to such merely negative, or paradoxical considerations. A leap of consciousness was required to discover the alternative to such a concatenation of merely negative considerations. Plato’s *Parmenides* dialogue is a model for the nature of this problem.

So, an apparent solution leaps into the mind of the successful discoverer. That solution, as a thought-object, cannot be directly depicted in terms of communications media available. Thus, if it cannot be communicated explicitly, how might we know whether the newborn thought-object were valid, or not? There are two conditions which prompt us to recognize such a thought-object as valid. First, it satisfies all of the negative conditions associated with the relevant paradox. Second, it goes beyond those negative requirements, to enable us to generate efficient hypotheses, reaching by these means into realms which were unattainable for us without the aid of these new thought-objects.

By signaling both the negative preconditions of a hypothesis, and also, similarly, describing efficient new constructions derived from the new thought-objects, we communicate to our own and other consciousness the

formal proofs of the thought-object’s validity. Thus, we may be relatively certain, that the thought-objects so generated by different, communicating intellects are congruent thought-objects.

Therefore, by citing the name of the thought-object among those who share its possession, we may communicate the efficient sharing of consciousness of the thought-object which, by its nature, may be neither explicitly portrayed as a sensuous object, nor be depicted in terms of a medium of formal communication, formal mathematical communications sharing this defect.

The Necessity of Metaphor

So far, we have described the thought-object as the demonstrable solution to those unique paradoxes which are akin in *Type* to Plato’s *Parmenides* paradox. We have indicated that these thought-objects occur as relatively absolute discontinuities with respect to the characteristics of the medium of communication in which the relevant problem has been stated *negatively*. Thus, we have indicated, the thought-object itself cannot be depicted explicitly within the domain of the communication medium. However, the reference to such a thought-object can be recognized by a hearer whose mind contains the sibling of that same thought-object.

In a classical humanist form of secondary school education, most emphatically, the emphasis is on presenting the pupils with the most important among the unique and other relatively elementary discoveries in the entire historical sweep of the advancement of civilized knowledge. It is desirable that original sources be used whenever they are both available, and in a form suited to that stage in maturation of the pupil’s powers of comprehension. Otherwise, only if such suitable primary sources are not available, we should rely upon paraphrases which effectively and fairly state the true paradox associated with that original discovery.

This form of classroom introduction to such original sources has a required order, as the ordering of Euclid’s *Elements* of geometry illustrates, from a formalist standpoint, the notion of a choice of such an order. Secondly, the ordering is determined by the consideration, that mastery of one discovery is virtually prerequisite for the comprehension of a successor in that series. The sound secondary curriculum teaches geometry and the plastic arts, as *the domain of visual experience*, as, in parallel, the student concurrently learns language, literature, and music—*the domain of hearing*. The historical order internal to the sciences of vision and hearing provides a virtually indispensable concomitant to the study of the rise of the European (Christian Humanist) Renaissance

of the fifteenth century, out of ancient and medieval history, and upon that foundation, the study of global post-Renaissance history.

Several most important effects are fostered by such a classical humanist form of secondary education.

In each case, first of all, the pupil replicates an original discovery. Within the student's own intellect, there is approximately a replication of the mental processes of that creative discovery which was experienced earlier by the original discoverer. Later, the pupil experiences another such crucial discovery, by an original source who depended, in turn, as the student does, upon the prior of these two original sources considered. So, it continues. So, in respect to mathematics and physical science, for example, the pupil's mind is populated, in effect, by a growing number of such past historical personalities of science, to the effect that the pupil not merely imagines these persons, as if they were merely characters in some story, but knows each as a living, thinking person, through the replication of some of the creative processes of each within the pupil's own mental processes.

Functions of 'Discontinuity'

In that illustrative case from geometry which we have treated thus far, the Platonic form of paradox embedded within an Archimedean estimate for the squaring of the circle, it is shown, that even far, far beyond the already logically meaningless case of an hypothetical regular polygon of 2^{256} sides, there remains a distinct, intelligibly measurable gap between the relatively lesser area of each and all inscribed regular polygons and the marginally greater area of the relevant circle. The persistence of the discreteness of that gap, persisting beyond all limit of such extension, is a model for a simple type of mathematical discontinuity. It is not the magnitude of the gap, which is this discontinuity; the discontinuity is the fact of the persisting, *transfinite* discreteness of this gap, however tiny that persisting gap were to become.¹⁶

Examine that class of simple types of discontinuity from a subsuming vantage-point. Explore, in this way, the nature of those mental existences which we have identified as thought-objects. Consider formal theorem-lattices.¹⁷

The short definition of a deductive theorem-lattice is provided in the following three, complementary statements. Given, any constant, integral set of deductive axioms and postulates:

1. No consistent theorem derived from that set of axioms and postulates states anything which was not already implicit in that set of fixed underlying assumptions.

2. Any theorem of this lattice, which is constructed to represent an experience, will project upon such representation nothing but the ideas of the *ontological qualities* and *behavioral potentialities* already implicit in the latter's underlying, integral set of axiomatic and postulational assumptions.

3. Any demonstration which refutes a single deductively consistent theorem of such a theorem-lattice, refutes axiomatically the choice of underlying integral set of axioms and postulates upon which each and all possible hypotheses or theorems of that theorem-lattice depend.

Thus, for example, to the degree which the intended development of the mathematical physics of a Descartes and Newton is intended implicitly to perfect itself as a deductive theorem-lattice, the development of that physics has the combined form of expanding the number of theorems, while perfecting the deductive consistency of the expanding theorem-lattice as a whole. When nature itself manifestly denies, even in a single instance, what is shown to be a consistent theorem of that lattice, the entire lattice's underlying *an* integral set of axioms and postulates must be altered. The alteration must remedy the disagreement with nature in that one crucial instance, but without producing experimentally invalid forms of other theorem types.

Let us recognize that principle of axiomatic consistency of a deductive theorem-lattice by the sometimes employed term, "hereditary principle." Let us represent a successful, generalized, successive, step-wise improvement over deductive theorem-lattice *A*, by the series *A, B, C, D, E, . . .*¹⁸ The difference between any two adjacent terms of this series, is some change in the underlying, integral set of axioms and postulates of the predecessor term. Thus, for reason of that change, no deductive consistency exists between any one term of that series, and each and all other terms of that same series. This gap separating each term of that series from each among all the other terms, and doing this with deductive absoluteness, is a discrete discontinuity in the same broad sense as the gap separating the linear generation of the constructions of a regular polygonal perimeter from the different, isoperimetric quality of the relevant, inscribing circular action.

In the simple case of squaring the circle, we address a single object, that circle. *The germ of so-called "non-algebraic," or "transcendental" functions is already there, in Cusa's treatment of this paradox;* but, we must take additional steps to see it clearly. We must recognize a principle, integral to all competent mathematics, intrinsic to the notion of an isoperimetric circular action;

we must recognize the pervasiveness of a non-algebraic principle, which Gottfried Leibniz *et al.* named *analysis situs*. The cycloid is the best vantage-point for a secondary classroom treatment of these matters.

Roll a relatively very small circle (r) along the outside perimeter of a relatively extremely large circle (R). The result is that the perimeter of the very large circle, R , appears relatively almost a straight line.¹⁹ At the start of this roll, the perimeter of circle r touches the perimeter of the larger circle at point P_0 ; to this corresponds point p on the smaller circle's circumference (SEE Figure 7). Roll circle r clockwise, making a series of points of tangency of p on circle R each time the rotating point p again touches the perimeter of R . Thus, between points P_0 and P_1 , the trajectory of p forms a curved line, a cycloid, approximately that of Roberval²⁰ or Christiaan Huygens²¹ (SEE Figure 8).

Extending the class' study of cycloids a bit, we meet the fact, that there is a different result if circle r is rolled upon the inside, as opposed to the outside of the perimeter of R . Take the cases that $R = 2r$, and $R = 3r$, and $R = 4r$, and $R = 5r$ (SEE Figure 9). These constructions draw our attention to the fact that there is an important functional difference between the *positive* curvature of the exterior of a circular perimeter, and the *negative* curvature of the interior of that perimeter.

Then, we follow Huygens through his treatments of the *tautochrone* and *involute-evolute* constructions (SEE Figure 10).²² Together with Huygens, Leibniz, the Bernoullis, *et al.*, we discover several things which are crucial for all valid developments in mathematical physics, from approximately 1700 A.D. onward, to date, things bearing directly upon these principles of metaphors.

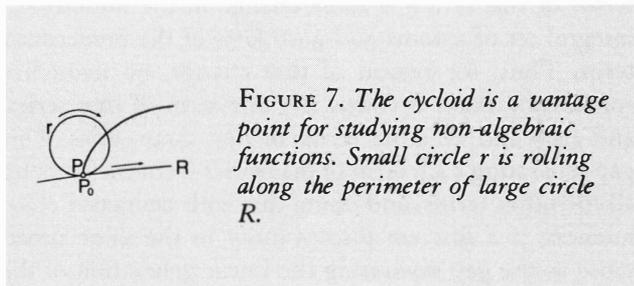


FIGURE 7. The cycloid is a vantage point for studying non-algebraic functions. Small circle r is rolling along the perimeter of large circle R .

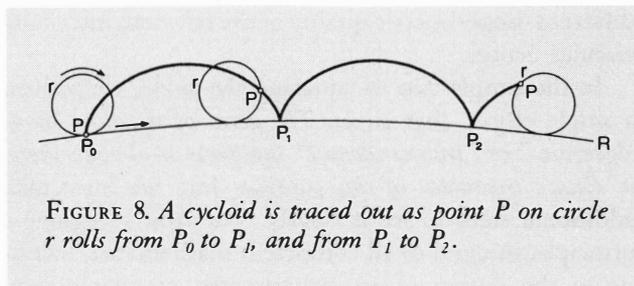


FIGURE 8. A cycloid is traced out as point P on circle r rolls from P_0 to P_1 , and from P_1 to P_2 .

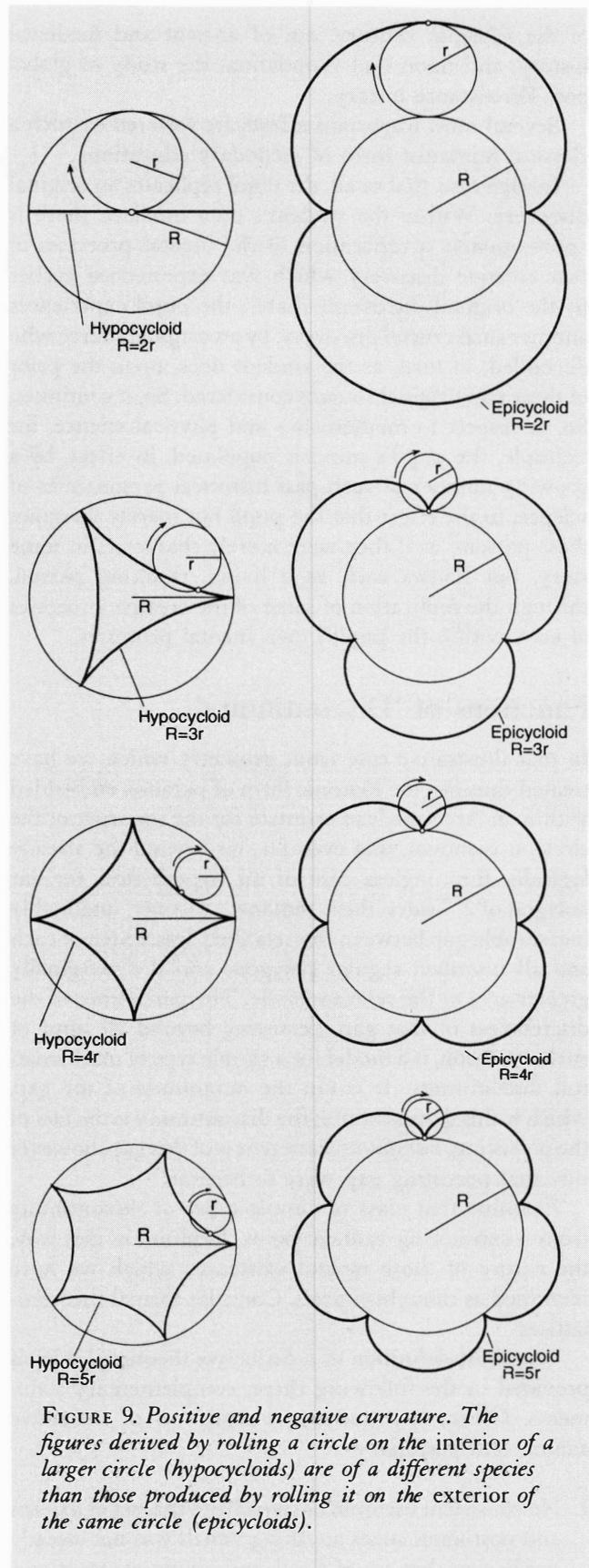


FIGURE 9. Positive and negative curvature. The figures derived by rolling a circle on the interior of a larger circle (hypocycloids) are of a different species than those produced by rolling it on the exterior of the same circle (epicycloids).

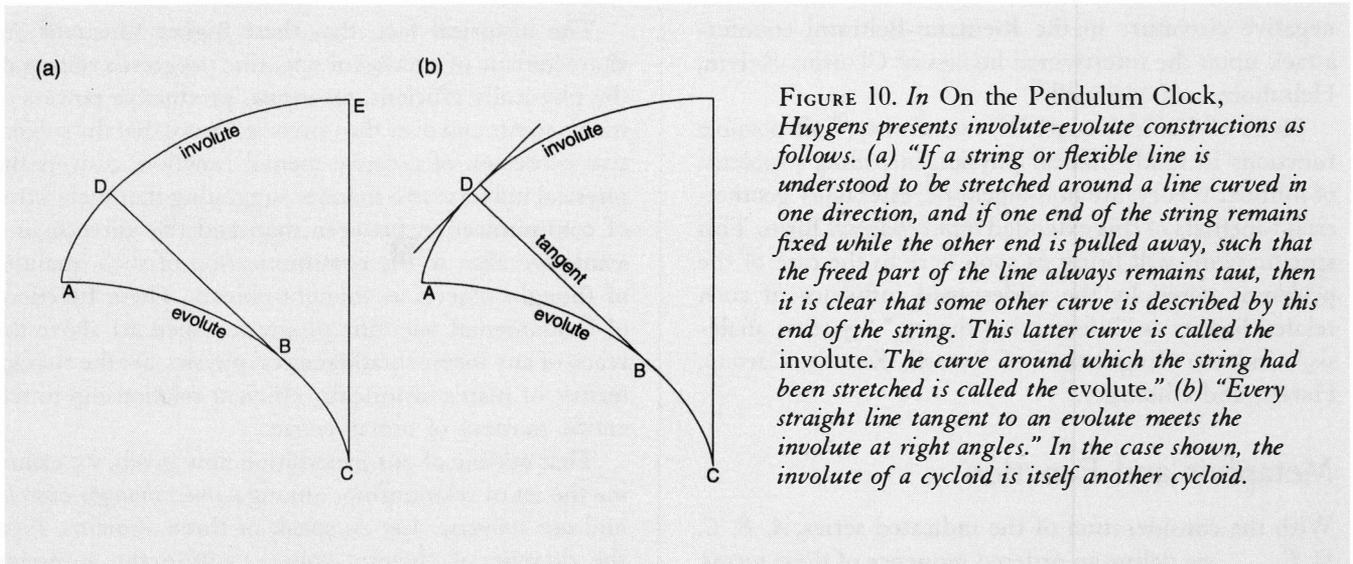


FIGURE 10. In *On the Pendulum Clock*, Huygens presents involute-evolute constructions as follows. (a) "If a string or flexible line is understood to be stretched around a line curved in one direction, and if one end of the string remains fixed while the other end is pulled away, such that the freed part of the line always remains taut, then it is clear that some other curve is described by this end of the string. This latter curve is called the involute. The curve around which the string had been stretched is called the evolute." (b) "Every straight line tangent to an evolute meets the involute at right angles." In the case shown, the involute of a cycloid is itself another cycloid.

No student should be graduated from any secondary school, unless he or she has assimilated the treatments of cycloid, tautochrone, and involute-evolute relationships as put forth in Huygens' work on these subjects. Without that, and without the mastery of the tautochronic principle of least action for refraction of light as Leibniz and the Bernoullis set this forth during the 1690's (SEE Figure 6), there could be no competent grounding of the student in the barest prerequisites of as much as uttering the term "modern physical science." (How many science and engineering professionals today have met that requirement?)

In the very simplest case, the simple cycloids, *non-algebraic functions*, represents that class of functions de-

rived, "hereditarily," by performing circular action upon circular action. This is then extended, to indicate circular action upon that result, and so on more or less indefinitely. This is extended, in turn, by Huygens, Leibniz, the Bernoullis, and by Gaspard Monge later,²³ to include those derived constructions obtained in the classroom by winding and unwinding taut threads, the so-called *evolutes* and *involute*s (SEE Figure 11). This includes the class known as *envelopes*.²⁴ We must include, as a matter of strict principle, the notion of *analysis situs* introduced by Leibniz.²⁵ We must include, retrospectively, Kepler's work on applications of the distinction between *positive* and *negative* curvature,²⁶ doing this from the standpoints of both elementary *analysis situs* and the treatment of

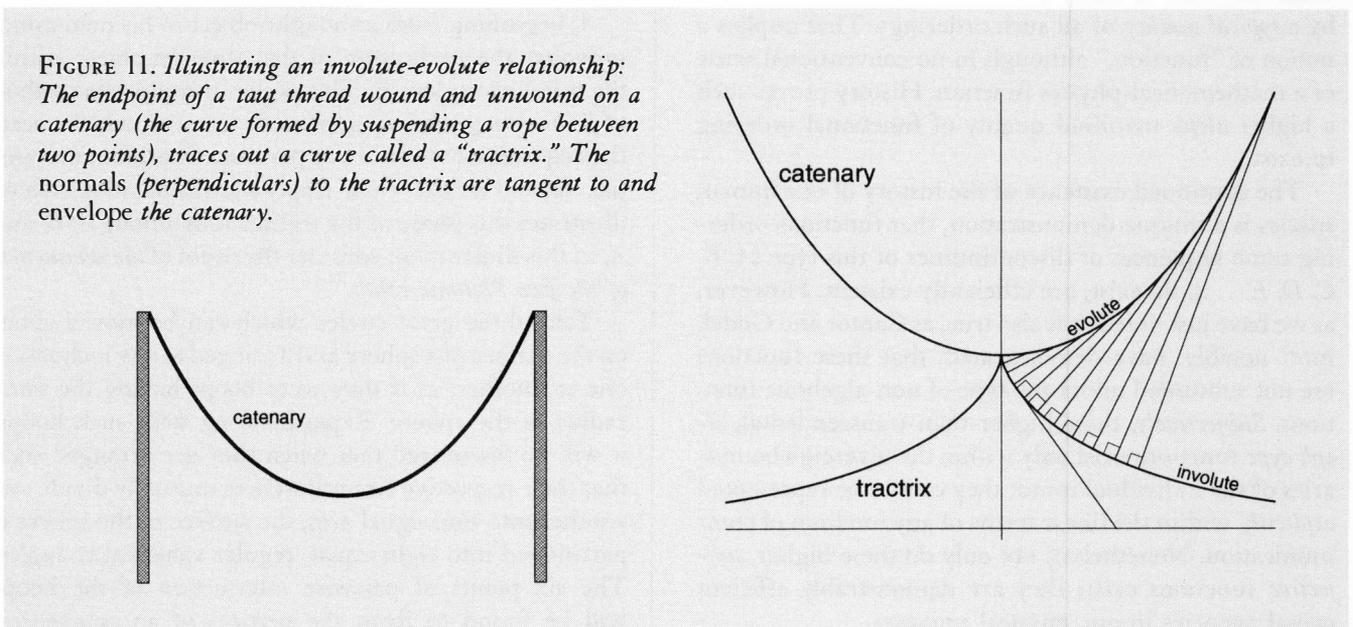


FIGURE 11. Illustrating an involute-evolute relationship: The endpoint of a taut thread wound and unwound on a catenary (the curve formed by suspending a rope between two points), traces out a curve called a "tractrix." The normals (perpendiculars) to the tractrix are tangent to and envelope the catenary.

negative curvature in the Riemann-Beltrami counter-attack upon the intertwined hoaxes of Clausius-Kelvin, Helmholtz, and Maxwell.²⁷

Short of Cantor's *aleph* (\aleph) transfinities,²⁸ all possible functions in mathematical physics, including problems of number theory, are non-algebraic, essentially geometrical functions of this extended *transcendental* form. This specific point will bring us soon here to the case of the problems posed by the widespread influence of such related hoaxes as "information theory," "systems analysis," and the "linguistics" of Russell, Korsch, Carnap, Harris, and Chomsky.²⁹

Metaphor and Function

With the consideration of the indicated series, *A, B, C, D, E, . . .*, we define an ordered sequence of these terms. The "variable" of this ordering is not those terms themselves, but, rather, the discontinuities separating each term from each of all the others. These discontinuities are the point of intelligible access to the relative ontological nature of the classes of thought-objects to which we have referred above.

Consider Cantor's *alephs*. We have $\aleph_0, \aleph_1, \aleph_2$, and so on. These *alephs*, so ordered as in any sequence, form a *manifold*. This manifold is of a Cantor *Type*; this *Type* is ontologically of the quality of discontinuity separating each of \aleph_0, \aleph_1 , etc., from all others.

This manifold and its *Type* cannot be reduced to any notion of *function* which is consistent with our use of the term "function" to denote a class of geometrical, non-algebraic, or transcendental functions. Yet, the *aleph*-manifold, with its many alternative orderings, is defined by a *typical quality* of all such orderings. That implies a notion of "function," although in no conventional sense of a mathematical-physics function. History proves such a higher *aleph*-manifold quality of functional ordering to exist.

The continued existence of the history of our human species is a unique demonstration, that functions ordering some sequences of discontinuities of this type (*A, B, C, D, E, . . .*), do exist, are efficiently existent. However, as we have just noted, it is also true, as Cantor and Gödel, most notably, have demonstrated, that these functions are not subsumed under the type of non-algebraic functions. *Subjectively*, these higher-than-transcendental, *aleph-type* functions exist only within the sovereign boundaries of the individual mind; they cannot be represented *explicitly* within the linear terms of any medium of communication. Nonetheless, not only do these higher, *subjective* functions exist; they are demonstrably efficient causal agencies in our physical universe.

The historical fact, that these higher functions are characteristic of successful scientific progress's raising of the physically efficient, *per-capita*, productive powers of man's command over the universe, shows that the subjective processes, of creative-mental function, address the physical universe in a manner suggesting that such forms of communication between man and the universe *as a whole* are akin to the communication of such qualities of thought-objects as thought-objects. These functions of fundamental scientific progress, which act above the reach of any formal mathematical physics, are the characteristic of man's historically efficient relationship to scientific mastery of our universe.

That outline of our proposition now given, we examine the set of relationships among *names, thought-objects*, and *our universe*. Let us speak of three domains. *First*, the domain of thought-objects, within the sovereign bounds of the individual's mental-creative life. *Second*, the relevant plane of sense and communication media. *Third*, within the physical universe, behind the superficiality of sense-experience, an underlying governing agency of principle, which controls the lawful behavior of the universe, and which will "recognize" certain of our changes in forms of actions with a favorable response.

Reference Figure 12. We have person *A*, a secondary-school teacher, and also an experimenter. We have person *B*, a student, and an observer of the experiment being performed. There is the experimental subject, *X*. *A* acts upon *X*. Student *B* observes *X*, and also observes *A*'s actions upon *X* throughout the experiment. *A* communicates, reciprocally, with *B*, a communication which precedes and accompanies the experiment, and which continues after the experiment's completion.

A, beginning from a thought-object in his own mind, provokes the replication of that thought-object within the mind of student *B*. This occurs through the method of *Socratic negation*, as applicable to a case which meets the requirement to be a *true paradox*. Consider an example, related to the Cusa isoperimetric paradox, which illustrates this phase of the transactions among *A, B*, and *X*, in this illustration; consider the proof of *the uniqueness of the five Platonic solids*.³⁰

Take three great circles which can be moved about on the surface of a sphere and arranged at any inclination one to another, as if they were hoops having the same radius as the sphere. Experimenting with such hoops, it will be discovered that when they are arranged such that their respective circumferences mutually divide one another into four equal arcs, the surface of the sphere is partitioned into eight equal, regular spherical triangles. The six points of pairwise intersection of the hoops will be found to form the vertices of an octahedron

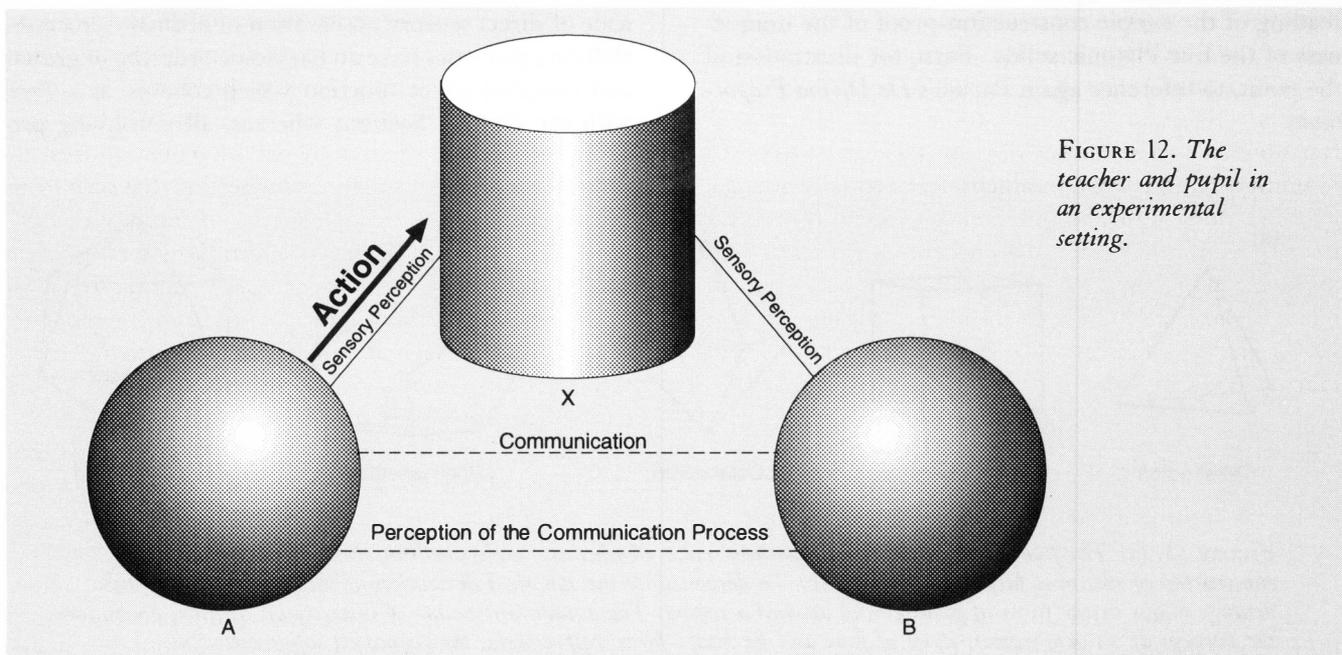


FIGURE 12. *The teacher and pupil in an experimental setting.*

(SEE Figure 13).

Do the same for four and six hoops. For four hoops, the pairwise intersection occurs at twelve points, coinciding with the twelve vertices of a cuboctahedron (the truncation through midpoints of edges of the cube or octahedron). The surface of the sphere is thus partitioned into eight equal and regular spherical triangles and six equal and regular spherical quadrilaterals. Each great circle is divided by the others into six equal arcs.

Using six hoops, thirty points of pairwise intersection result, forming the vertices of an icosidodecahedron (the truncation through midpoints of edges of the icosahedron or dodecahedron). The surface of the sphere is partitioned into twelve equal and regular spherical pentagons and twenty equal and regular spherical triangles. Each great circle is divided by the others into ten equal arcs.

It can then be proven that there are no other partitions of the sphere resulting in the division of the great circles into equal arcs. From the limiting case of six hoops, which permits the construction of twelve pentagonal faces, is demonstrated the primacy of the dodecahedron, and relative uniqueness of the five Platonic solids.³¹ From the six-hooped figure containing dodecahedron and icosahedron, the cube, octahedron, and tetrahedron may be readily derived.

The Golden Section may then be conveniently demonstrated as the ratio of radius to chord on the dodecahedron formed by inscription in each of the six great circles, or, alternatively, as one of the many well-known internal relationships of the pentagon, formed by projection of

the spherical pentagon onto a plane. In either case, the derivation of this ratio from the construction upon the sphere is to be stressed, rather than derivation from a pentagon or pentagonal division of the circle, presumed as given or constructed by algebraic artifice.

This approach has shown several points which are of crucial importance:

1. The necessity of deriving these regular polyhedra from regular spherical triangles, quadrilaterals, and pentagons is shown. This correlates with our earlier study of the paradoxical effort to square the circle. The construction of the polyhedra is bounded *externally* by *spherical action*.
2. That, only regular division of the sphere's surface by the factors three, four, and five succeeds. Thus, the dodecahedron corresponds to the *upper limit* of construction, since it is derived from fivefold division. No regular polyhedron of hexagonal sides, or larger, is constructible.
3. That all five regular solids are derived from the construction of the pentagonal-sided dodecahedron.

A strong indication of this is the following view of harmonic orderings cohering with the Golden Section.

The customary classroom and related practice, is to explain the construction of the Golden Section as necessary for the construction of the regular pentagon. This seemingly innocent practice has contributed to the circulation of much nonsense, nonsense which is avoided if

the Golden Section is situated directly within a proper reading of the simple construction-proof of the uniqueness of the five Platonic solids. Turn, for illustration of the point, to reference again Pacioli's *De Divina Proportione*.

Pacioli, Leonardo da Vinci, *et al.*, showed that, on the scale of direct sensory observation of ordinary processes, all living processes have an harmonic ordering of growth and morphology of function which coheres, as a *Type*, with the Golden Section; whereas, all non-living pro-

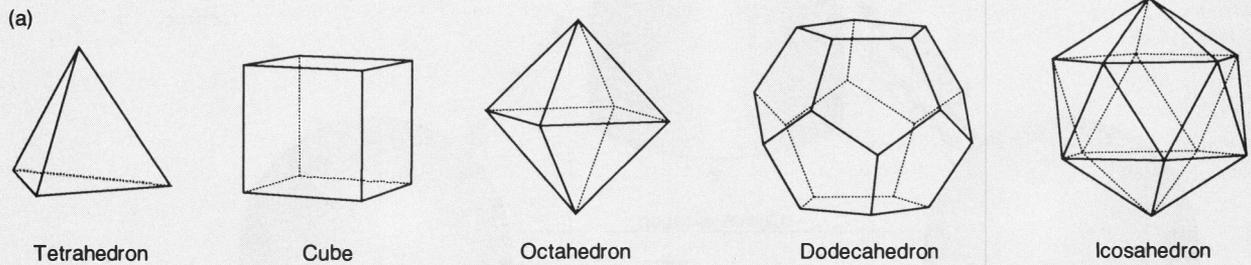
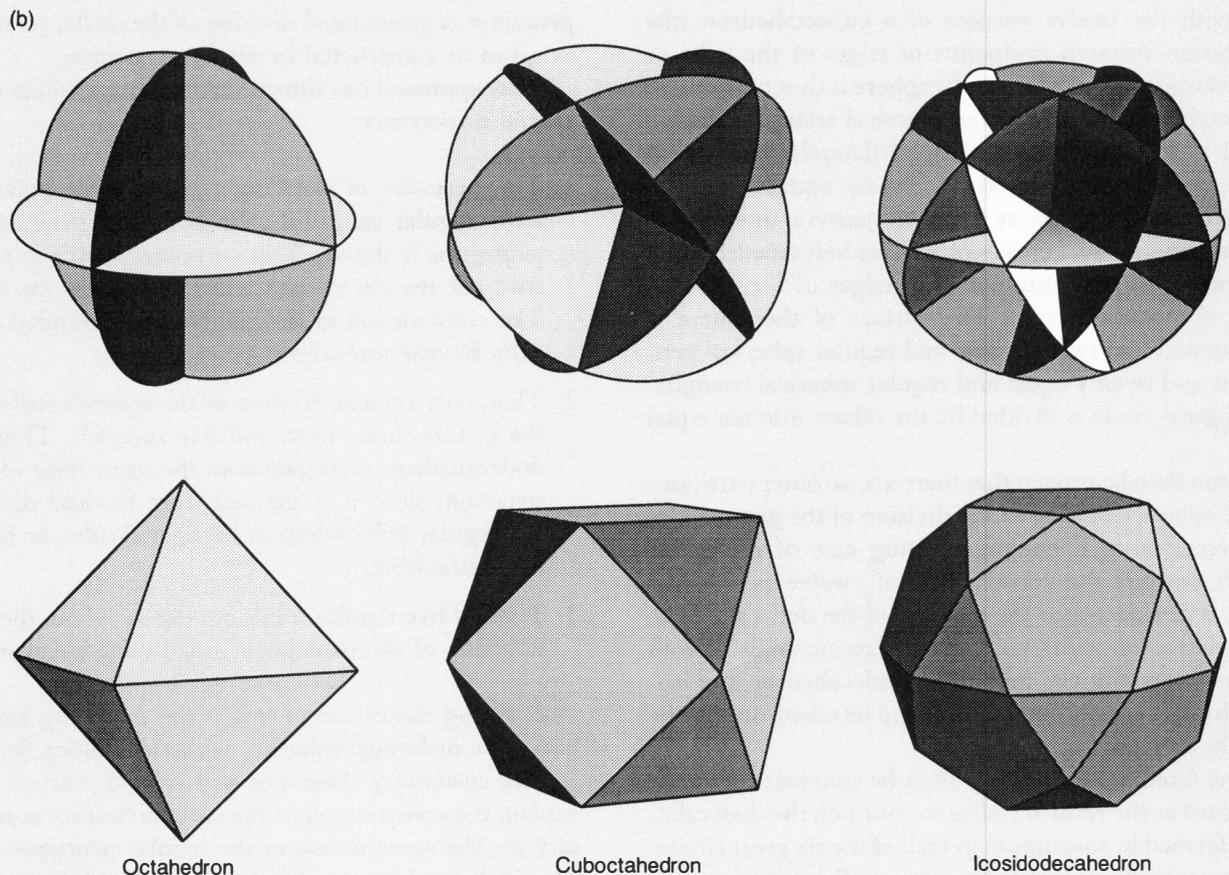


FIGURE 13. (a) The five Platonic solids: tetrahedron, cube, octahedron, dodecahedron, and icosahedron. Each is constructed of identical faces and vertices. (b) To demonstrate the spherical derivation of the five Platonic solids, arrange hoops in the form of great circles around a sphere. The equidistant points of intersection of three hoops form the vertices of an octahedron; those of four and six hoops form, respectively, the truncated solids called the cuboctahedron and the icosidodecahedron. No more than six hoops can be arranged in this fashion. The thirty-vertex icosidodecahedron, formed by the limiting case of six hoops, contains the five Platonic solids. No other regular polyhedra can be constructed.



cesses, on this scale, have a different *Type* of characteristic harmonic ordering. This point is later re-stated by Johannes Kepler in various locations, including his *Snowflake* paper. Modern evidence leaves no doubt of the correctness of that so-qualified observation of Pacioli, Leonardo, Kepler, *et al.*

Unfortunately, too frequently, those who point to this distinctive Platonic coherence of living processes with the Golden Section, either degrade this connection to a kind of cabalistic speculation, or simply present the Golden Section itself as a section in a circle, without showing necessity, in such popularized terms as to leave the matter of harmonic ordering vulnerable to a false charge of numerological mystification. This latter negligence appears whenever we might misdefine the Golden Section in terms of either, simply, "the Golden Mean," or as simply the derivation of the pentagon, by construction from a given circle.

If the following, restated, preconditions of rigorous treatment are satisfied, in defining the Golden Section, the risk of misleading mystification is avoided.

First, the Golden Section is located as a *necessary*, (intrinsic) metrical characteristic of negative spherical curvature, as nothing other than the characteristic distinction of the spherical generation of a subsumed, constructed dodecahedron.

Second, the five Platonic solids are recognized as each and all subsumed by the construction of a single one among them, the dodecahedron.

Third, this topic, of spherical determination of the Platonic solids' uniqueness, is referenced from the standpoint of the method we indicated above, for recognizing and solving the deep paradox inhering in Archimedean squaring of the circle. In short, that the *spherical action*, of a different, higher species than any polyhedron, bounds externally, and thus determines the constructible existence and metrical characteristics of the species of polyhedra in general.

These points are underscored by comparing the paradoxical process of squaring the circle to the way in which harmonic orderings coherent with the Golden Section *bound externally* the linear Fibonacci series (SEE Figure 14).³² This may then be compared with Johannes Kepler's distinction between packings contrary to, respectively, negative and positive spherical curvatures (SEE Figure 15). In short, the Golden Section is a determined, necessary limit of packing of the type illustrated by the Fibonacci "growth" series under the constraint of negative curvature. With that observation, the premises for mystification evaporate.

That material covered by teacher *A*, the teacher brings the student's attention to the work of Huygens and his successors on the subjects of *tautochrone* and *brachisto-*

chrone.³³ This leads the student through (a) *the elements of the cycloid*, (b) *the proof, by Huygens, that the cycloid is a tautochrone*, and (c) *the proof, by Johann Bernoulli et al., that the tautochrone is also the brachistochrone* (SEE Figure 16).

The teacher, *A*, then reviews the work which was referenced by Johann Bernoulli, Huygens' *Treatise on Light*,³⁴ as the next unit of study in *B*'s classroom. In this setting, *A* includes relevant references to the subject of light and hydrodynamics in the Leonardo da Vinci *Codices*, in the work of Fermat, and the treatments of a universal principle of least action by Fermat, Leibniz, and the Bernoullis. The geometrical construction employed as proofs, together with the Bernoulli experiment itself, are, combined into one, the experiment *X*; *the Bernoulli experiment itself, is the relevant physical experiment*.

This experiment shows implicitly that the universe

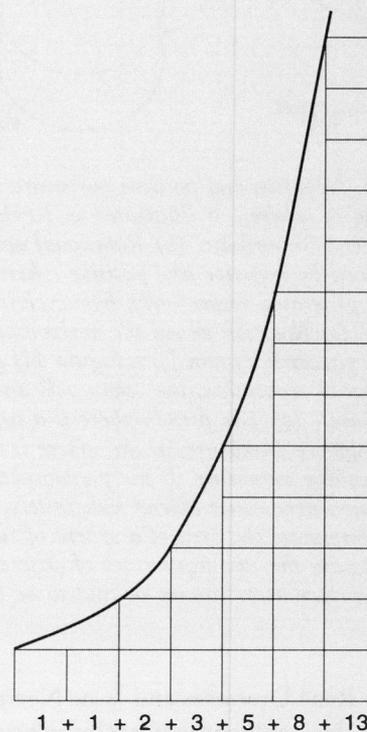
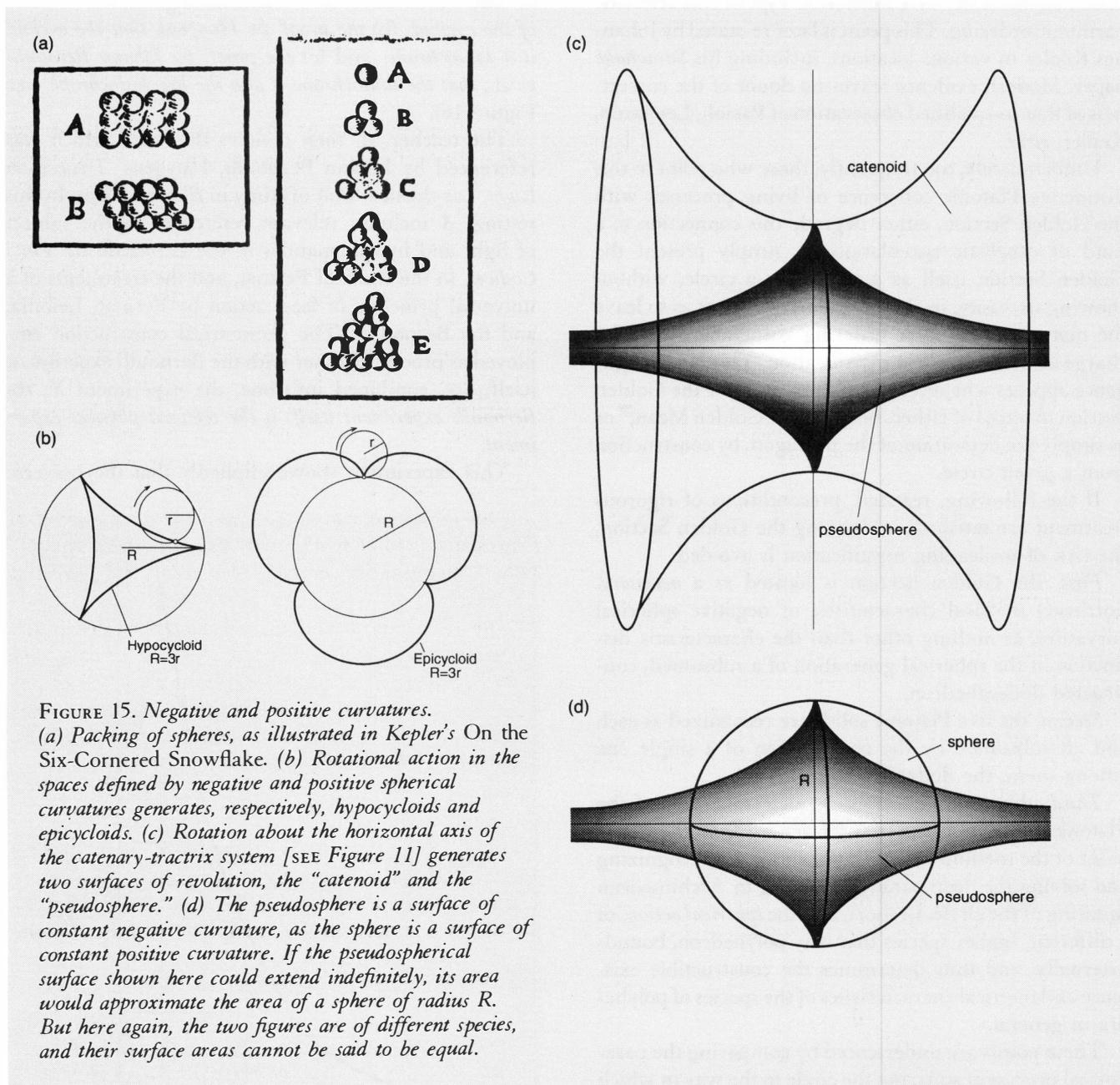


FIGURE 14. As the circle bounds externally the 2^n -polygonal perimeter, so the linear Fibonacci series (1, 1, 2, 3, 5, 8, 13, . . . , n) is externally bounded by a curve whose harmonic orderings are coherent with the Golden Section. (Each term in the Fibonacci series is the sum of the previous two terms.) Here again, the two are of different species; paradoxically, as growth brings them into closer approximation, their species difference becomes more marked.



portrayed by René Descartes and Isaac Newton does not exist. First, the tautochrone/brachistochrone equivalence, *for the case of a constant relative speed of light*, shows that the notion of physical function in our universe requires that family of non-linear, non-algebraic functions which is derived from the isoperimetric principle. This notion of non-algebraic function supersedes all those notions of arithmetic-algebraic function derived from a notion of pairwise, linear causal interrelationship as primary. Thus the refutation of Descartes and Newton. Whereas, the non-algebraic and algebraic conceptions conflict respecting a notion of causal principle, the

algebraic view is shown to be axiomatically false.

This signifies that the Cartesian domain is axiomatically false in conception from the outset. Isaac Newton's case is ultimately the same, but historically of greater ironical interest.

Newton refers to what he admits to be an absurdity of his mathematical-physics scheme, that it represents the universe as "running down," in the sense of a mechanical time-piece.³⁵ This "clock-winder" topic is a featured element within the Leibniz-Clark-Newton correspondence later.³⁶ Later, during the 1850's, Rudolf Clausius, at the prompting of Lord Kelvin, employed the assistance of

point, N , the North Pole. To trace any figure drawn on the flat sheet onto the surface of the sphere NS , draw a moving ray from the North Pole to the sphere to the outline of the figure on the flat sheet. Where the moving ray cuts through the surface of the sphere, there lies the spherical image of the relevant trace figure upon the flat sheet.

Now reverse the projection, from a figure on the sphere, to a shadow cast by the moving, tracing ray upon the flat sheet. Then, add a third feature to this; that the image on the sphere itself be a projection of some original image in an unknown domain, that real, unseen universe, hidden behind the metaphorical imageries of our sense experience. Let this unseen, real universe be approximated, *metaphorically*, by the Cantorian *Type* of the *aleph*-manifold as a whole. Let the domain of scientific physical functions, in the mind, be represented, metaphorically, in communication, by the analysis-situs-enriched, extended *Type* of non-algebraic functions in general. Then, thirdly, let the lowest order, the linear world of Aristotelian nominalist sense-certainty, be represented, metaphorically, by the *Type* of systems of deductive theorem-lattices.

Those three levels, combined so, represent, metaphorically, the domain of metaphor. The notion of a *Type* which subsumes all the possible relationships among these three, including matters of physical science, but also classical forms of drama, poetry, and music, we define here as the function of metaphor.

Negentropy

Before passing beyond the thought-objects of physical science, to the classical art-forms, we have two final matters to settle respecting physical science. One of these two is, obviously, the query, "If formal, explicitly communicable aspects of physical science are metaphorical, what happens, then, to the idea of an *objective* mathematical physics?" The other of the two propositions next to be considered is that notion of *negentropy* which Professor Wiener so crudely abused. We review the special topic of negentropy first, before proceeding to the issue of objectivity of formal physical science in general.

Prior to the referenced work of Pacioli and Leonardo da Vinci, the mathematical representation of growth was given, as we noted above, by Leonardo of Pisa's *Fibonacci Series*. The Fibonacci series does not represent a *principle of growth*, but only an attempt to approximate the notion of growth descriptively, using methods analogous to Archimedes' squaring of the circle. We stressed earlier here, that the Golden Section bounds externally the extended Fibonacci series, as the circle bounds externally

the 2^n -polygonal perimeter; that which bounds, is of a different, higher species than that which is bounded; the higher cannot be derived "hereditarily" from the lower.

There is another notion of growth, the one corresponding to a simple "compound-interest" function, $(1 + x)^t$ (SEE Figure 18). The characteristics of this growth (arithmetic mean, geometric mean, harmonic mean, arithmetic-geometric mean) are given by elliptic functions of the conical cross-section of the unit cycle of growth (SEE Figure 19). The relatively higher orders of growth functions are hyperconic ones, which shows us that generation of increasing density of apparent discontinuities which is the observable characteristic of growth *per se*, or *negative entropy* (*negentropy*).

In other words, it is not possible to represent *growth* of this *Type* characteristic of living processes by means of a deductive form of mathematics, such as a Fibonacci series, the mathematics of pairwise interactions along straight-line pathways. The attempt to define negentropy, as Wiener does, by means of Ludwig Boltzmann's statistical mechanics ("H-theorem"), is simply outright incompetence from the outset of such an endeavor.⁴⁰

The characteristics of human scientific progress are, as we have indicated earlier, changes in the axiomatic basis of theorem-lattices which are of a *Type* of the Cantorian *aleph*-manifold. Biological evolution is a process of this same formal *Type*. Kepler's universe is, ultimately, of this same *Type*. Until the twentieth century, we observed this *Type* of process in living processes, in manifest results of creative mental discoveries, and in Kepler's implicit ordering of the universe as a whole. Recently, we observe the same underlying pattern of elementary causation as we approach phenomena of physical chemistry on the scale of 10^{-16} to 10^{-17} centimeters.

The point here is not simply to refute Wiener and the prejudiced dupes who follow his gnostic teaching. The term "entropy" was given distinct significance by the arguments of such collaborating spokesmen as Clausius, Grassman, Kelvin, Helmholtz, Maxwell, and Rayleigh, and also, later, by such continental-science figures as Max Planck, *et al.* As we have indicated above, from the vantage-points of Leonardo da Vinci, Kepler, *et al.*, and also their famous opponent Isaac Newton, the present-day term "entropy" signifies to the sixteenth and seventeenth centuries' literature, Kepler's distinction between the five-petal flower, determined by *negative* spherical curvature, and the six-cornered snowflake, the latter determined by close packing of positive spherical curvatures. Nineteenth-century developments in the field of Leibniz's *analysis situs* only illuminate more brightly that elemental distinction in species between the intrinsically

entropic “hereditary” characteristic of positive curvature, and the intrinsically *negentropic* characteristic of negative spherical curvature.

It should be evident, on these very elementary grounds, that the mathematical schema of Grassman,

upon which Clausius and Kelvin’s introduction of the so-called “Second Law of Thermodynamics” depends, is a fraud, a fallacy of composition akin to recognizing only one side of the set of terms of Schrödinger’s ψ -function.⁴¹ Since the work of Pacioli and Leonardo, or, since that

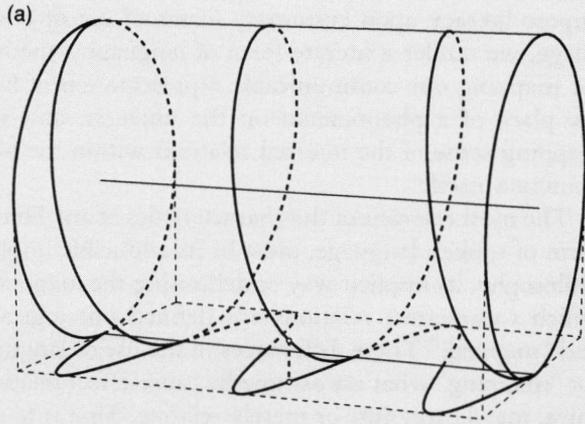
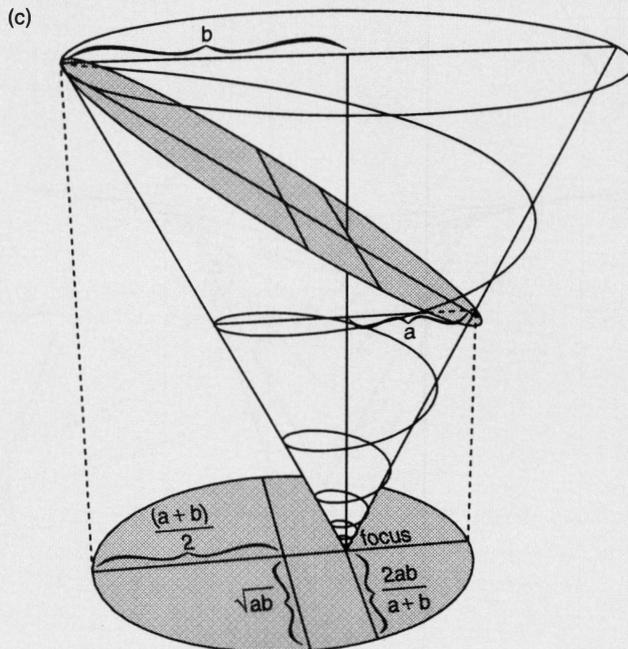
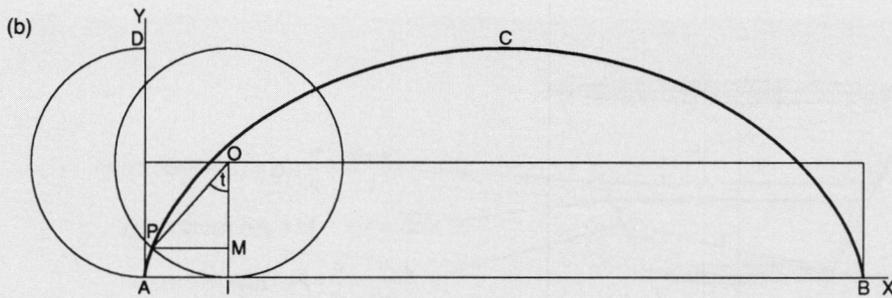


FIGURE 18. Simple growth functions. (a) Rotation up a cylinder, when projected onto a plane, generates a sine wave. (b) The sine wave is a co-function of the cycloid. Given cycloid ACB, using rectangular axes ABX, AY, the coordinates (x,y) of any point P on ACB are given by

$$x = at - a \sin t = a(t - \sin t),$$

$$y = a - a \cos t = a(1 - \cos t).$$

(c) Rotation up a cone (spiral action), when projected onto a plane, generates elliptical functions, which are coherent with the characteristics of simple growth functions—for example, with the intervals of the well-tempered musical scale.



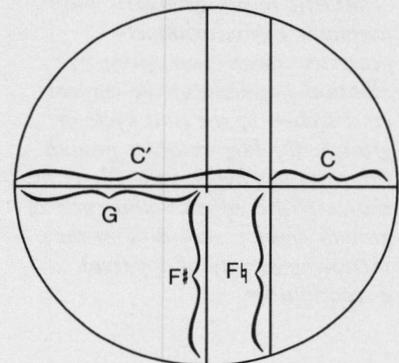
a is the radius at perihelion

b is the radius at aphelion

$2ab/(a + b)$ is the harmonic mean, which occurs at the latus rectum

$(a + b)/2$ is the semi-major axis

\sqrt{ab} is the semi-minor axis



of Kepler, positive spherical curvature bounds externally a system of linear inequalities (functions) which are pervasively, "hereditarily," characteristically *entropic*; but, negative spherical curvature, the externally bounding curvature of universal physical processes, generates processes which are, like life itself, characteristically *negentropic*.

These "hereditary" distinctions in harmonic orderings, between positive and negative modes of spherical curvature, obviously pertain to the metaphorical domain of extended non-algebraic function, the which is the middle, second of the three levels of a function of metaphor. This apparent negentropy, of negative spherical-curvature harmonics, is, of course, externally bounded, subsumed by the higher Cantorian *Type* associated with the *aleph*-manifold. Negentropy does not exist, as a concept of a governing principal process on the level of any single deductive theorem-lattice.⁴²

There is plainly no intrinsic error in employing commonly accepted names as pointers for indicating the

respectively appropriate kinds of phenomenon. Absurdity, veering toward insanity, enters if we tolerate the radical nominalist proposal, to base our belief respecting the intrinsic physics of phenomenon upon the dictionary definition of those mere terms. However, communication is not limited to pointing while uttering a noun or nominative phrase. In the civilized efforts to impose literacy upon customary forms of use of a language, we render a literate form of language a method for mapping our communicable representation of both the place of a phenomenon in the universe, and also mapping some of the internal relations within the phenomenon itself.

The most relevant of the characteristics of any literate form of spoken language, must be its adducible implied philosophy, its implicit way of delimiting the manner in which cause-effect relations are defined ontologically, and "mapped." These differences in the use of language for "mapping" what are assumedly cause-effect relationships, may be absolute or merely relative. That is to say,

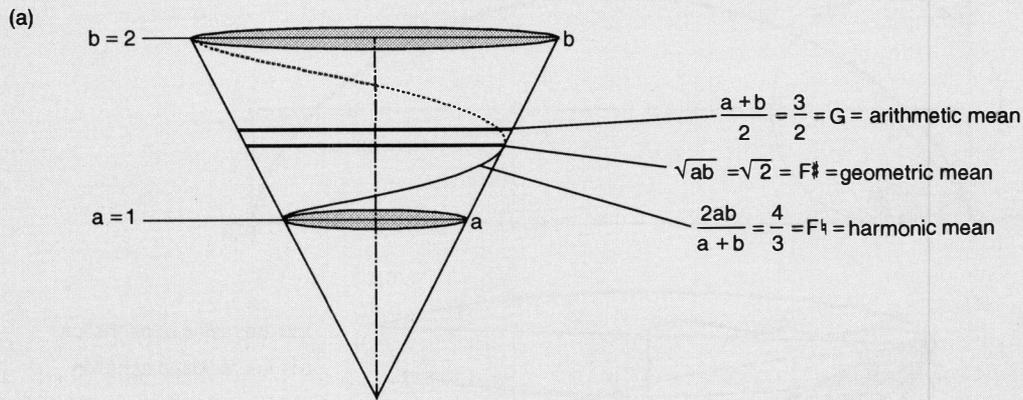
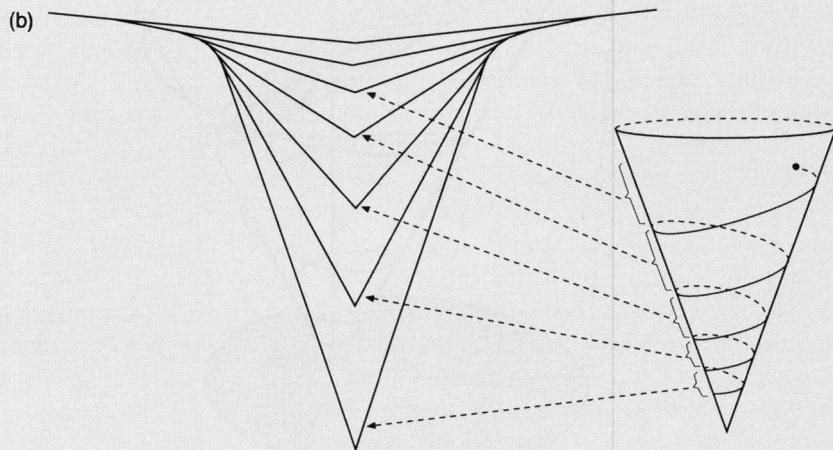


FIGURE 19. *Simple growth and negentropic growth. (a) The characteristics of simple growth—arithmetic mean, geometric mean, harmonic mean, arithmetic-geometric mean—are given by elliptical functions of the conical cross-section of the unit cycle of growth. (b) Higher-order growth functions are hyperconic. Here, the characteristics of each unit cycle of growth develop according to the increasing density of apparent discontinuities.*



they are *absolute* if they inhere in the accepted forms of use of that language; they are *relative*, if they reflect one among several optional forms of use of that language in currency.

Consider the similarity to “mathematical languages.”

There are absolute philosophical differences separating the reductionist algebra of a Descartes from the non-algebraic representations of function of a Leibniz. Yet, as long as we limit the use of reductionist algebra to mere description of ordinary kinds of non-crucial phenomena, algebra can be a useful tool. One must recognize there are circumstances under which the intrinsically inferior, philosophically false method of such an algebra must be avoided, and the superior, non-algebraic method is mandatory—in treating topics bearing upon least action, for example.

This consideration brings us to a higher degree of metaphor.

At the beginning here, we have emphasized the simplest aspect of our topic, the metaphorical relationship between a single term and an unutterable, but real, individual thought-object. Now we have to consider a higher order of thought-object; we must consider the point, that entire statements, statements which purport to “map” cause-effect relationships, even entire books sometimes, may also be metaphors for single thought-objects. Turn, now, to an elementary illustration of this point.

In our treatments of some elementary thought-objects of scientific work, thus far, we have considered some crucial thought-objects originally attributed to such authors as Pythagoras, Plato, Archimedes, Euclid, Nicolaus of Cusa, Luca Pacioli, Leonardo da Vinci, Johannes Kepler, Pierre Fermat, Christiaan Huygens, Gottfried Leibniz, and Johann Bernoulli. Associate the original form of that true paradox and its solution as associated with a name, a portrait, and a brief biographical sketch of that author. Those images you now associate with a corresponding memory of your re-experiencing the production of the relevant thought-object originally experienced by them.

How should one order the seating of these discoverers in one’s memory? For scientific work, the primary consideration must be, not raw chronology as such, but, rather, the rather obvious principle of “this necessary predecessor” among crucial discoveries as a whole. That ordering principle permits a range of equally valid, but different orderings among the same array of discoverers. Each of those choices of orderings among arrayed thought-objects, is a distinct thought-object, with the included quality of a Cantorian *Type*, indeed, subsumed by the *Type* of an *aleph*-manifold.

Consider an obvious choice of illustration here. We have begun with Nicolaus of Cusa’s 1430’s discovery of an isoperimetric principle paradoxically underlying theorems of Archimedes. That isoperimetric notion, as elaborated by Cusa,⁴³ set the stage for a range of crucial discoveries by Pacioli, Leonardo da Vinci, *et al.*, at the close of the fifteenth century and the first decades of the sixteenth. The treatment of Plato’s discovery of the Golden Section’s implications, by Leonardo *et al.*, referenced Plato, Archimedes, Euclid, and Cusa (and, probably also the *De Musica* of St. Augustine).⁴⁴ This, in turn, set the stage for the most crucial of the discoveries by Kepler. Leonardo da Vinci, on the same basis, developed the crucial discovery of the transverse wave-function for electromagnetic propagation, and the finite speed of light later first measured (approximately) early during the seventeenth century. The work of Leonardo da Vinci, Kepler, Fermat, Desargues, and Pascal, informed the discoveries of Huygens, Leibniz, and the Bernoullis on least-action principles and the related features of non-algebraic functions.

If we examine the arrangement by the rule, that the passage from one or more crucial discoveries to a successor crucial discovery, must always occur in the paradoxical manner we generate, initially, an individual thought-object, the result of constructing this choice of order by that method, is to generate a higher-order thought-object, of that quality which subsumes the successive generation of the constituent thought-objects in that selected array. This higher quality of thought-object is therefore of a distinct Cantorian *Type*: that array of thought-objects, considered as they might have been generated in that selection and assigned order, generated by a constant principle of difference, forms a manifold, or sub-manifold of this description. The higher quality of thought-object generated by that ordered array is the *Type* of that manifold or sub-manifold.

From that standpoint, all communication relating to significant ideas is necessarily, intrinsically metaphorical.

The progressive ordering of a succession of thought-objects in this way, according to such a higher quality of thought-object *Type*, is the phenomenon which corresponds to what we ought to signify by the term *negentropy*. For classroom purposes, we signify the case in which a series of successively higher states of organization is generated according to a principle which intrinsically orders such a succession.

For example, let us imagine that at a certain point the higher state of matter in our universe is either a population of neutrons or hydrogen atoms. By combining these, through fusion, a periodic table of elements and their isotopes is generated. Where lies the negen-

tropy in this image of fusion development? Is it that lithium might be a “higher state of organization” than hydrogen? Or, is it not that the universe is now populated by neutrons, hydrogen atoms, and also helium and lithium atoms? The point being illustrated, is that higher states of organization of the process *as a whole* are being generated successively, in accord with a higher, subsuming principle of a periodic table in general: in that latter aspect of the phenomenon lies the true negentropy.

The Essential Subjectivity of Science

Lurking among the numerous accomplishments of modern science, there is the absurd, but popular delusion, that “physical science” is both “materialist” and “objective.” The worst, and most widespread forms of this delusion assume, first, that scientific method is essentially statistical, and that “mathematical science” is associated with measurement of forces acting along a straight-line pathway between two points. This popular delusion was key to the widespread “systems analysis” hoaxes, such as Professor Norbert Wiener’s “information theory.”

The proof, that such definitions of “objective science” are absurd, is elementary; that proof is given as a central feature of this author’s introductory course in Leibniz’s science of Physical Economy.⁴⁵ We summarize the background considerations, point by point.

1. If man were a mere animal, that is, like a baboon, a creature innately disposed to what is called “primitive hunting and gathering” modes of social reproduction, at no time could the living human population of this planet have exceeded about ten millions individuals.
2. The increase in the human population, and the associated improvements in life-expectancy and standard of existence, are the cumulative benefit of what we may identify most simply and fairly as “scientific and technological progress.” The measure of this function of progress is an increase in the potential population-density of the human species; this represents a higher *per-capita* standard of living and longevity, combined with a decrease in the total number of hectares required to sustain an average individual human life.
3. These improvements are expressed functionally through a succession of successful, radical changes in human productive behavior, a succession akin to the series of discontinuities associated with *A, B, C, D, E, . . .* referenced above. These changes in the behavior of successive levels of upward development of society are analogous in form or function, and effect, to successful, upward biological evolution of species among the lower forms of life.⁴⁶

4. Thus, the problem of both discovering and choosing a *Type* of sequential ordering of thought-objects, corresponding to a negentropically ordered succession of revolutionary scientific modifications in known scientific principles, is a *subjective* matter. It is a matter of discovering which subjective *Type* of creative-mental generation of thought-objects corresponds to a negentropic sequence of increase in man’s cultural *potential for increasing potential population-density*.

Thus, from this point of view, the subject of *science* is that higher-order of thought-object—a *transfinite*—which correlates formal scientific progress with rate of increase of this science-driven rate of growth of a culture’s potential population-density. In other words, man willfully increasing mankind’s power to perpetuate evermore successfully his own species’ dominating existence within the universe.

This view is in contrast to the popularized materialist *mythos* of so-called “objective science,” of man as the contemplative mathematician-observer.

“*I see myself creating*, as I define creation, as a common principle of that array of named thought-objects of fundamental discovery associated with such as Plato, Archimedes, Cusa, Leonardo, Kepler, and Leibniz. I locate my own creating-activity in respect to an effort to attribute a higher thought-object, a Cantorian *Type*, to the manifold composed of such historic names of original discoverers. This attribution of a specific choice of order for such an ‘aleph-manifold,’ and of attributing a *Type* to that choice of ordering, is the immediate subject of my inquiry.

“This *Type* defines a relatively fundamental scientific principle, as an hypothetical choice of such a principle; in Plato, this is referenced as ‘hypothesizing the higher hypothesis.’ I now correlate that hypothetical choice of *Type* with a manifest ordering of science-driven growth of relative potential population-density, of relatively superior and inferior modes of physical-economic culture.”

This correlation is the characteristic activity of physical science; seeking to subsume all such hypothesizing of the higher hypothesis as a manifold of a yet higher *Type*, is *physical science*.⁴⁷

As described in other locations,⁴⁸ the details of this phenomenon are of the following form. The hypothetical inference of a new *Type* of ordering of crucial thought-objects of fundamental scientific discovery as a manifold (or, sub-manifold), in respect to a single *Type* of crucial (or, “unique”) paradox, subsumes an experimental design for some crucial expression of this new hypothesis. That subsumes, in turn, the design of either an experimental apparatus, or an observational method akin to such an apparatus.

Thus, from fundamental discovery of (transfinite) ordering-principle, through the design of an experiment, through that experimental design expressed as a new principle of machine-tool (or, analogous) design, is the generation of a discovery of scientific principle transmitted and assimilated into a general increase of social productivity. In every step of that process, the essential thing is the generation of a new conceptual thought-object by, within, and in accord with the sovereign, individual creative mental processes of the mind of a sovereignly individual person.

We should emphasize by aid of such means as reiteration, that the process just outlined is Plato's "hypothesizing the higher hypothesis." The higher hypothesis is the *Type* of cardinality to which corresponds a manifold (or, sub-manifold) of thought-objects arranged in a certain choice of ordering. The choosing of such a particular such higher hypothesis, the hypothesizing of the selection of one or more such higher hypotheses for such an array of individual thought-objects, is itself the consideration of a manifold of such alternative *Types*. The latter manifold's *Type* is what we should signify by *physical science*.

In other words, physical science is essentially the process of discovering those rules of creative behavior of our individual mental processes which lead us to discoveries of a *Type* through which general culture may be changed to optimize the rate of increase of our species' potential population-density. In this fashion, physical science is essentially subjective.

Admittedly, that does not complete the argument. If a certain type of "hypothesizing the higher hypothesis" is physical science, then increases in potential population-density, so successively achieved, show us that the intelligible form of lawful ordering of nature is coherent with the process of perfection of our hypothesizing the higher hypothesis. Thus, it is our successful hypothesizing of the higher hypothesis, in this fashion, rather than our sensory impressions, the which is the proper basis for determining the lawful composition, and ontological characteristics, of that real physical universe which lies beyond the full reach of our mere senses.

Our creative-mental processes do not address directly sensory objects as sensory objects *per se*. Human thought knows only *change*; we know only a thinkable correspondence between a change in our behavior and a correlated change in the manifest behavior of nature. It is a correspondence of the two *Types* of change which constitute the entirety of real physical science. That correspondence is what is intelligible for us; we must discover everything else respecting nature from this approach to the elementary primacy of change, to the universal elementarity in space-time of nothing but change.

This point is clearer, if we look now at the historical

source of the leading opposition to the picture we have presented.

The 'Materialist' Opposition

The leading opponent of our Leibnizian view of science, and the modern opponent of Plato, Cusa, Leonardo da Vinci, Kepler, and Leibniz, for example, is the so-called "materialist," or "mechanistic" standpoint of Francis Bacon, Robert Fludd, Elias Ashmole, René Descartes, John Locke, and Isaac Newton. This "materialist" dogma was introduced to seventeenth-century France and England by the then newly-established cult of the Rosicrucians. The essence of this gnostic Rosicrucian dogma is typified by René Descartes' *deus ex machina*⁴⁹ and Isaac Newton's maxim *hypotheses non fingo*.⁵⁰ This is also the axiomatically "hereditary" origin of such modern forms of radical positivism as von Neumann's "systems analysis," Professor Noam Chomsky's Korschite "linguistics," and Wiener's "information theory" hoax.

Consider as much of this Rosicrucian cult's dogma as is essential to locate the origins of that popular delusion we recognize most readily as the mythos of "objective science." The derivation of the Rosicrucian cult is the best vantage-point for this undertaking.

The seventeenth-century Rosicrucian cult of Fludd, Ashmole, *et al.* was a resurfacing of a notorious, usury-practicing, medieval sect known variously as the *Cathars*, *Bogomils*, or, more commonly, "The Buggers."⁵¹ This sect, which infested the market centers of northern Italy and southern France ("Languedoc"), was one of many varieties of kindred gnostic cults sprung up over the centuries from such very ancient pagan origins as the Phrygian cult of Cybele-Dionysus, the Delphic cult of Apollo-Dionysus, the Hellenic cult of Osiris, and the sundry Babylonian and Canaanite mystery religions.

The relevant feature of these gnostic forerunners of Ashmolean Rosicrucianism is the doctrine of utter depravity of the "flesh" which is the direct source of the materialist dogmas of Bacon, Descartes, Locke, Newton, *et al.* The sexual perversions of the Cathars are a direct, doctrinaire correlative of this materialist dogma of theirs. Briefly, *one of the cult's Elect was forbidden to place his semen in the vagina of a woman, lest he cause the procreation of newborn human flesh! The spirit inhabiting the Elect must be kept apart from the utter depravity of the fleshly process of human procreation.*⁵²

That said, consider the case of science-driven increase of society's potential population-density. The origin of a new, valid, fundamental discovery, is a mental act of creation, *a spiritual act*, the generation of such a thought-object. The derivation of a design of experimental apparatus, and then a machine-tool principle, from the new

thought-object, is the source of a powerful *material effect*. This is the connection which the Rosicrucian Descartes insisted must be broken: *deus ex machina*, and which Newton forbade: *hypotheses non fingo*.

What kind of society do these Manichean, or Bugger Elect represent? The Elect are forbidden to interfere with nature; they cannot till the soil, nor perform other productive labor. They are permitted to subsist by begging for alms, or to loan their accumulation of monetary savings from alms-gathering in *usury*. The Elect form, thus, a parasitical class subsisting by tribute and usury.

The strength of such a usury-practicing gnostic conspiracy, is that the Elect of the "Bugger" sect could sell a note for twelve or more ducats in Lyons, which could be redeemed by the bearer at discount for ten ducats, or less, in Padua. Thus, spider-web networks of Elect "Buggers" spread across northern Italy and southern France of the Garonne-Tarn and Rhône regions, in symbiosis with the other principal usury-practicing "Elects" among Lombard bankers and Jewish money-lenders.

The following summary is fair. As the oligarchical, usury-practicing *I Nuovi* faction of the Venetian merchant-bankers spread their parasitical, oligarchical power, by such vehicles as the Levant Company, into England, the Netherlands, and the old Hanse regions of Northern Europe generally, the Netherlands and England became the target for the launching of such Levant Company spin-offs as the Bank of England, the City of London financial center, and the Dutch and British "India" companies. London became thus the "new Venice," a union of the usurious Levant Company "Lombards" with the Rosicrucian cult of Bacon, Ashmole, *et al.* These seventeenth-century developments were the roots of the combined work of the Liberal Party and (later) Fabians of the eighteenth and nineteenth centuries, in seeking to establish London as the capital of a "Third Roman Empire," a worldwide form of *pax universalis*, a British Empire which would be a revival of the pagan Roman Empire of Augustus, Tiberius, Caligula, Nero, and Diocletian.

Originally, science was solely a creation of the Platonists of the Golden Renaissance, chiefly the work of those fifteenth-century moral and intellectual giants who are best typified by Cardinal Nicolaus of Cusa and Leonardo da Vinci. This tradition was continued by the work of such as Kepler, Gilbert, Fermat, Desargues, Pascal, Huygens, Leibniz, and the Bernoullis. That seventeenth-century Leibnizian tradition was carried into the nineteenth century by such figures as France's Gaspard Monge, and Germany's Gauss and Riemann. This tradition is sometimes called "continental science,"

to distinguish it from the Cartesian, empiricist, and positivist outgrowths of the Rosicrucian influence.

The cases of Bacon, Fludd, Descartes, and Newton established the counter-science variously expressed as *Cartesianism*, empiricism, and *positivism*. The hegemony of this cult's "Enlightenment" materialism in most science classrooms today, is the result of British participation in victories in most of the wars of the past three hundred years. The supremacy of the Rosicrucian's materialist dogma in today's scientific establishment is not a scientific, but a purely political phenomenon.

The practical issue of this political division in the science establishment, is the overarching conflict between the two principal, conflicting social systems which have, almost entirely, dominated European history since Solon's defeat of the oligarchical usurers of ancient Athens, more than two-and-a-half thousand years ago. This is the point made by Friedrich Schiller's contrasting the humanist, republican constitution of Solon to the American-Confederacy-like law of Lycurgus' Spartan slave society.⁵³

To sustain scientific and technological progress requires appropriate education of virtually all participants in the society's productive processes. A population so educated will not tolerate indefinitely that division of society's population into oligarchs and helots which was characteristic of Lycurgus' Sparta, the pagan Roman Empire, and the American Southern Scottish Rite Jurisdiction's Confederate States of America. The brutish ignorance to which the slaveholders' oligarchical system degraded not only the Confederates' "poor whites," but also most of the so-called "planter aristocracy,"⁵⁴ illustrates the point at issue. The so-called "socialist" zero-technological growth decrees of the Roman Emperor Diocletian are a notable, consistent precedent for the brutish degeneracy pervading the old Confederacy.⁵⁵

On the other side of the same issue of policy, an ignorant people is not capable of self-government. To govern oneself requires the capacity for efficient comprehension of qualities of processes which are, by their nature, intrinsically beyond the developmental capacity of the scientifically illiterate strata. As several founders of the U.S. federal republic warned, the survival of such a democratic republic as theirs under natural law required a certain minimal quality of compulsory education.⁵⁶ Friedrich Schiller presented the conceptual basis for the most successful model of Christian classical humanist education, the reforms of Wilhelm von Humboldt.⁵⁷

Under the influence of such a quality of universal compulsory secondary education, that educated citizenry will conspire to free itself from any oligarchical rule.

Yet, without such an intrinsically anti-oligarchical form of education, a society could not generate, transmit, or assimilate efficiently scientific and technological progress in a general way. The self-interest of the oligarchy, as a social formation, is to destroy nations practicing generalized scientific and technological progress, and then seek to outlaw, throughout the world, both classical education and the practice of scientific progress. That is the *entropic Type* of cultural policy represented by the “(guild) socialism” of Diocletian, wherever the like appears, down through the ages of history since not later than the Phrygian Cybeline cult of Dionysus.

Like Kant’s pro-irrationalist *Critiques* later, Descartes’ gnostic *deus ex machina* dogma sought to paint a picture of the material world independent of that indispensable subjective agency, the creative mental processes upon which the discovery of all scientific knowledge depends absolutely. Kant did not deny the efficient existence of creative powers of scientific discovery, but pronounced deliberative creative acts to be impossible.⁵⁸

That is the kernel of what passes for sophisticated philosophical materialism. To the credulous simpleton, the materialist demagogue exhibits himself as a solid, down-to-earth good fellow, one, perhaps, with all four feet firmly planted on the ground. “We materialists believe in nothing we cannot experience first-hand, with our own good five senses.” To thoughtful, literate audiences, such cheap rhetoric is not persuasive; the argument of the Kantian unknowable *thing-in-itself* and Descartes’ *deus ex machina* is offered, instead.

For us, the relevant experience on which physical science must be premised, is not fixedness, but *change*: the correlation of a change in our scientific thinking for practice, with the resulting change in the responsive behavior of nature. Unlike that theology as such which references the *Absolute* of Plato’s the *Good*,⁵⁹ mere physical science does not know the *Absolute*, but only Cantor’s *Transfinite*. The domain of the transfinite is, at its highest level, Plato’s *hypothesizing the higher hypothesis*, the domain of physical space-time, the domain of *change*, of perfecting that which remains unperfected. Thus, for physical science, the science of physical space-time, experience is *change*, and change is the *elementary substantial* feature of all scientific experience.

As the illustrative case of the experiment shows, *change* begins as an ostensibly non-material, subjective act of valid creative discovery of new, un-utterable *Geistsmassen—thought-objects*. This first step in the causal sequence of human action is *spiritual*, not “material.” Under the “foremanship” of the relevant thought-object, a crucial experimental design is fashioned, a material medium for the *spiritual cause*, which latter is the

thought-object. So, we had next, the derivation of the new machine-tool principle, and the medium through which man’s *per-capita* power over the universe, per square-kilometer, is increased. The latter is the relevant *material effect*.

It is this sequence, this spiritual change causing the material change, which every successful experiment demonstrates. The materialist insists that the results of the experiment must be described only in such ways as leave the generation of the relevant new thought-object out of account. Since the universe responds to the experiment as it is actually developed, as prompted by an initially spiritual cause, materialism, with its materialist’s fanatic adherence to formal deductive *consistency*, falsifies the universe by such reductionist fallacy of composition.

II. Metaphor As Classical Tragedy

During 1948-1952, the period this author first completed the theses presented afresh here, he thought that to prove his case, that Wiener’s “information theory” is a dangerous hoax, one had to direct against *radical positivism* Wiener the same form of refutation which this author had then earlier composed against the elementary fallacies of Immanuel Kant’s virulently anti-Leibniz *Critiques*;⁶⁰ the last of those, Kant’s *Critique of Judgment*⁶¹ may be taken as a point for our purposes here.

This meant, then as now, that one must first attack Kant’s neo-Aristotelian formalism, Kant’s formal, reductionist pseudo-proof, that creative processes of original scientific discovery of principle are unknowable *a priori*. Additionally, it was clear then, as now, that just as Kant goes from this, in his *Critique of Judgment*, to deny any rational principle of knowledge of aesthetics, so we must show, that the same intelligible principle underlying creative, valid, original scientific discovery of principle, must be the governing principle of creativity in classical fine arts.

Then, in 1948-1952, as now, our central focus was that step-wise relationship between crucial scientific discovery and employment of derived machine-tool-design principles we have identified in this present location earlier. To show this same principle at work in classical fine arts, we focused upon classical poetry, emphasizing the chosen cases of Schiller and Goethe, and, then, using Goethe as the vehicle for treating the German *Lied* as represented by Mozart, Beethoven, Schubert, Brahms,

and Wolf settings of Goethe.⁶² Here, we emphasize, instead of the *Lied*, the model of classical tragedy.

The disadvantage of employing classical tragedy as an illustration, is that there are so few truly notable tragedians, as distinct from great classical composers (from Praetorius through Brahms). Only Aeschylus, Cervantes,⁶³ Marlowe, Shakespeare, and Schiller, chiefly, are exemplary of truly successful tragedians. Only the historian Schiller, among these few, mastered explicitly a statement and demonstration of the principles of composing classical tragedy. Nevertheless, the compelling advantage of using the case of tragedy here, is that, implicitly, it most perfectly situates in art-form the Cantor notions of *cardinality* and *power* (the German *Mächtigkeit*), as Cantor defines these to include the problems of ordering the *aleph*-manifold.⁶⁴

Consider as classical drama the array of exemplary crucial scientific discoverers we listed here earlier: Pythagoras, Plato, Archimedes, Cusa, Leonardo da Vinci, Kepler, Gilbert, Desargues, Fermat, Pascal, Huygens, Leibniz, the Bernoullis, Gaspard Monge, Karl Gauss, Bernhard Riemann, Eugenio Beltrami, and Georg Cantor. Arrange the crucial discoveries associated with these personalities, to imply an ordering-principle (higher *equivalence*, *Type*) which we may equate metaphorically to the name of *science*. Then, construct a contrasting, *entropic* array, typified by such followers of Rosicrucian “Buggery’s” materialist principle as Bacon, Fludd, Hobbes, Descartes, Locke, Newton, Cauchy, Clausius, Klein, Kronecker, Helmholtz, Maxwell, Rayleigh, Boltzmann, Russell, von Neumann, Wiener, *et al.* This is an *entropic Type* which we may rightly equate metaphorically to the name of *anti-science*. There, we have the principal historical background elements of *dramatis personae* from which to conduct a truly classical tragedy according to Schiller’s principle.

The basis for constructing a drama inclusive of these two, mutually exclusive *Types*, is that the formal elements of each of the manifolds might each reference the same phenomena of scientific history as the other, although the ordering principle by means of which the opposing *Type* knows the element *metaphorically* may be totally irreconcilable with the opposing one.

The tragedy based upon such a conjunction might be built up in the following way.

Given, a society whose prevailing custom in science is the “post-modernist” version of the *entropic Type*, but a society in which a few potential heroes know that the crucial elements of the society’s scientific-economic practice might be ordered according to the *negentropic Type*, as readily as to the presently hegemonic entropic choice. Define a situation in which the failure of a poten-

tial hero to act with pungency and force upon that latter option, means a devastating military or other kind of great suffering for his or her nation. Let this unhappy consequence occur, ostensibly because the potential hero fails to seize his last available opportunity, at the *punctum saliens*, to bring about the required shift of emphasis in the society’s policy practice. The potential hero’s seizure by what is fairly termed “psychosexual impotence,” like Hamlet’s, takes the form perhaps, of fearing to lose his academic security or pension, should he confront directly the entropic faction in this matter.

This failure of the potential hero defines the tragedy. This failure is implicitly of an intelligible Cantor *Type*; but, that is not a fully adequate representation of the notion of this tragedy.

The tragedy is performed before an audience. The performance of that drama, presented to that audience, begins to succeed if the audience is made conscious of the opposition of the two *Types*, and of the potential hero’s situation. Thus, the audience, by taking the dramatic character’s express consciousness as the object of the spectator’s conscious attention, is seeing the drama, and the characters depicted, as if from above. If the audience also recognized something of itself in each of these characters, the drama has reached a second milestone in the direction of success.

Next, the negentropic alternative must ultimately uplift the spirits of the spectators; that is the spark of true life, evoked so within the audience, and imparted thus, by fusion, to the audience’s consciousness of the succession of dramatic montage sensed of events on stage.

This assembles a manifold of not less than the following conjoined arrays of thought-objects: (1) the *negentropic Type* of science, as portrayed; (2) the *entropic Type* of anti-science; (3) the manifold of the phenomena which both of the foregoing two, opposing *Types* reference as correlation of their respective thought-objects; (4) the role of the potential hero, as a thought-object; (5) the audience’s reflection of its own projected consciousness of itself, returned to it as fused with the drama on stage.

This manifold, so composed, must be represented by a thought-object corresponding to the tragedy as a whole. That *Type* is the indivisible substance, the sovereign elementarity of that tragedy as a creative work of classical fine art. Here, metaphor is plainly the indispensably ironic character of both every moment of development of the drama, and of the drama in its entirety.

The idea of metaphor as mere “symbolism,” is plainly the absurd conceit of an illiterate. Symbolism returns to a mere sense-object’s image. It is the experience of generating the thought-object corresponding uniquely to that tragedy as a composed, indivisible entity, not a

sensuous symbol, which is the referent for the idea of that drama taken as a whole.

That idea, that *Type* is the essential experience of the author, as composer, and of the audience in experiencing the discovery of this new thought-object, as one might regenerate an original scientific discovery, as a thought-object, in one's own, sovereign creative-mental processes.

The tragedy addresses so, implicitly, the central feature of all individual creative-mental activity; that central feature is the act of efficient *participation in humanity as an historical entirety*. Nicolaus of Cusa's elaboration of the principle of *capax Dei* references this impulse in its highest form of expression.⁶⁵ The *Types* associated with this creative impulse, include, most prominently, the following:

1. Man the individual as *imago viva Dei*, in the living image of God the Creator.⁶⁶ Man is thus set apart from, and above the beasts, by virtue of the fact that the successful existence of our human species is effected by creative activity of a *Type* centered upon the generation, transmission, and efficient assimilation of scientific and technological progress. Without this creative activity, mankind could not continue to exist as a human species. God's quality as *Creator*, and man's unique affinity to that God the Creator, is knowledge which depends upon a thought-object corresponding to this creative self-image of man.
2. *Man as the sovereign creative individual*. Although we are mortal, we exist efficiently in the present and whole future of all mankind by means of our employment of our creative-mental processes for the generation, transmission, and efficient assimilation of thought-objects *equivalent* to crucial features of scientific and technological progress. In this, every instance of generation of a thought-object, (whether an original discovery, or not) is a sovereign act of an individual person, rather than a "collective" effect.
3. The issue of creative discovery, is not resolvable in terms of case-by-case assessment of individual isolated such discoveries. The issue is the discovery and enhancement of an ordering-principle which directs us along a negentropic pathway of valid, successive discoveries. We require a process of valid discoveries. We seek a higher rate of this *Type* of growth of the rate of progress. In and of itself, the abstractly isolable, particular discovery by an individual person is of a transfinite order of lesser importance, than that person's contribution to improving the negentropy of that *ordering-principle of successive changes*, the which defines successive increases of potential population-

density as a unified manifold. This latter consideration is the form of the most readily intelligible aspect of individual participation, not only in the classical tragedy, but also the universe as an entirety.

As is elaborated in other locations,⁶⁷ the individual affects efficiently, so, not only present and future generations, but also past. In the domain of space-time, in which the transfinite process of successive, negentropic *change* is ontologically the primary reality, this change is not merely the simple outcome of an individual act, but the outcome of participation in changing the universality of the determining process, the significantly efficient result of a person's mortal existence. Thus, we, by altering, through *participation*, the relevant feature of outcome of participation by even remote ancestors of the presently living generations, alter the past—by altering the outcome of the past's participation in the present and future.

Thus, in tragedy, Shakespeare causes the mind of Hamlet to be obsessed by what Hamlet believes to have been the ghost of his father. Thus, as by historical subjects of classical tragedy, do great poets seek to prompt their audiences to improve significantly the way in which we arrange the participation of the past in our present and future.

In this location, so far, we have emphasized those personalities whose very names are metaphors for the crucial thought-objects of scientific discovery. The pedagogical advantage of limiting our attention to such a selection of personalities, is that the work of discovery of these selected historical persons is readily susceptible to at least a negative form of mathematical treatment; on this account, the notion of a transfinite ordering of such discoveries through the issues of Cantor's *aleph*-manifold, is accessible.

Once the case is understood for such scientific metaphorizing, approximately at least, the concept is more readily extended to metaphor specific to classical art and statecraft. The favor is returned; from the extension to art and statecraft, we return the conception, much enriched, to scientific matters. The principal such enrichment is a keener sense, not only that valid science is essentially *subjective*—contrary to the popularized Cathar-Rosicrucian influences upon Descartes and British Empiricism; the meaning of science is not only Leibnizian physical economy, but, more broadly, contemporary man's efficient participation in the past, present, and future of the universe. We understand the essential role of classical art in making science possible, and understand the meaning of the metaphor; the highest form, the most rigorous form of mathematical physics is, thus,

Vocalization of Italian in the Soprano Voice

Actual pitch, transposed
down one octave

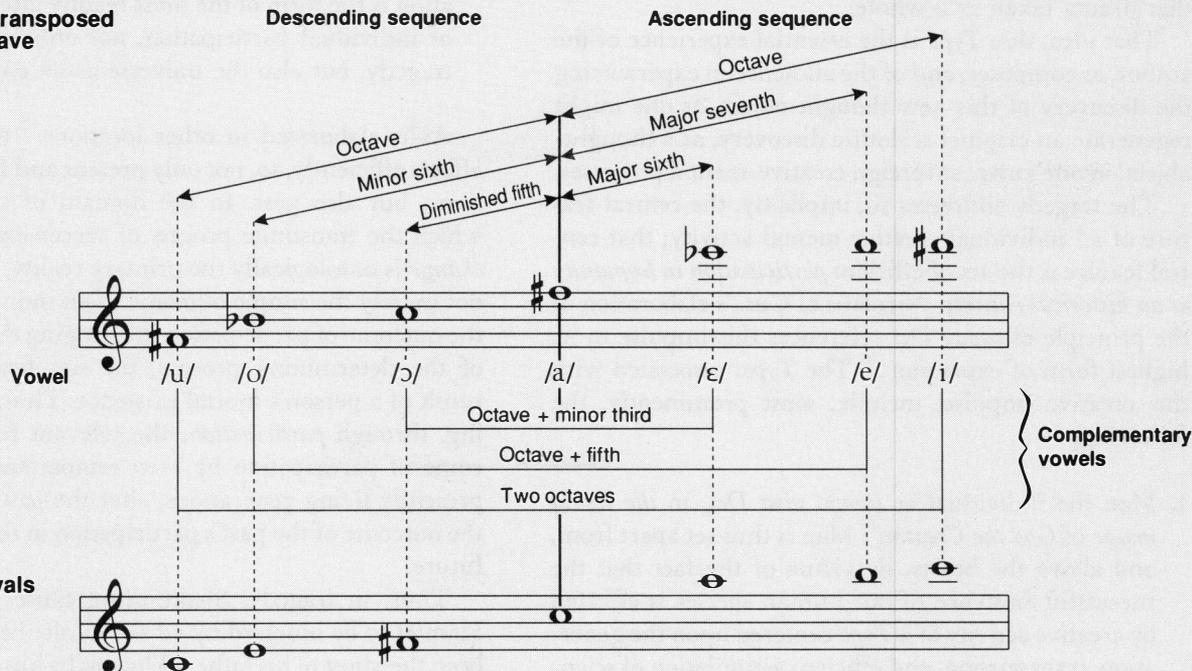


FIGURE 20. The natural tuning of spoken language. The musical notes shown at the top of each chart as “actual pitch,” are components of the sound of normal speech. The values emerge from laboratory measurements of frequencies (in Hz) of resonance peaks associated with the quality of each spoken vowel in the different languages, no matter at what fundamental pitch the vowel is spoken or sung. The vowels form a series of rising intervals from /u/—the darkest vowel quality—to /i/—the brightest. In order to illustrate the way in which intervals between the vowels are heard relative to each other, the notes at the bottom of the chart show the laboratory values transposed downward so that /u/ corresponds to C = 256 Hz. Values are shown for speakers of Italian and German.

a body of classical poetry and music, a larger scope of classical philology derived from the polyphonic vocalization of the poetry.⁶⁸ Classical tragedy is part of this philology.

Musical Philology

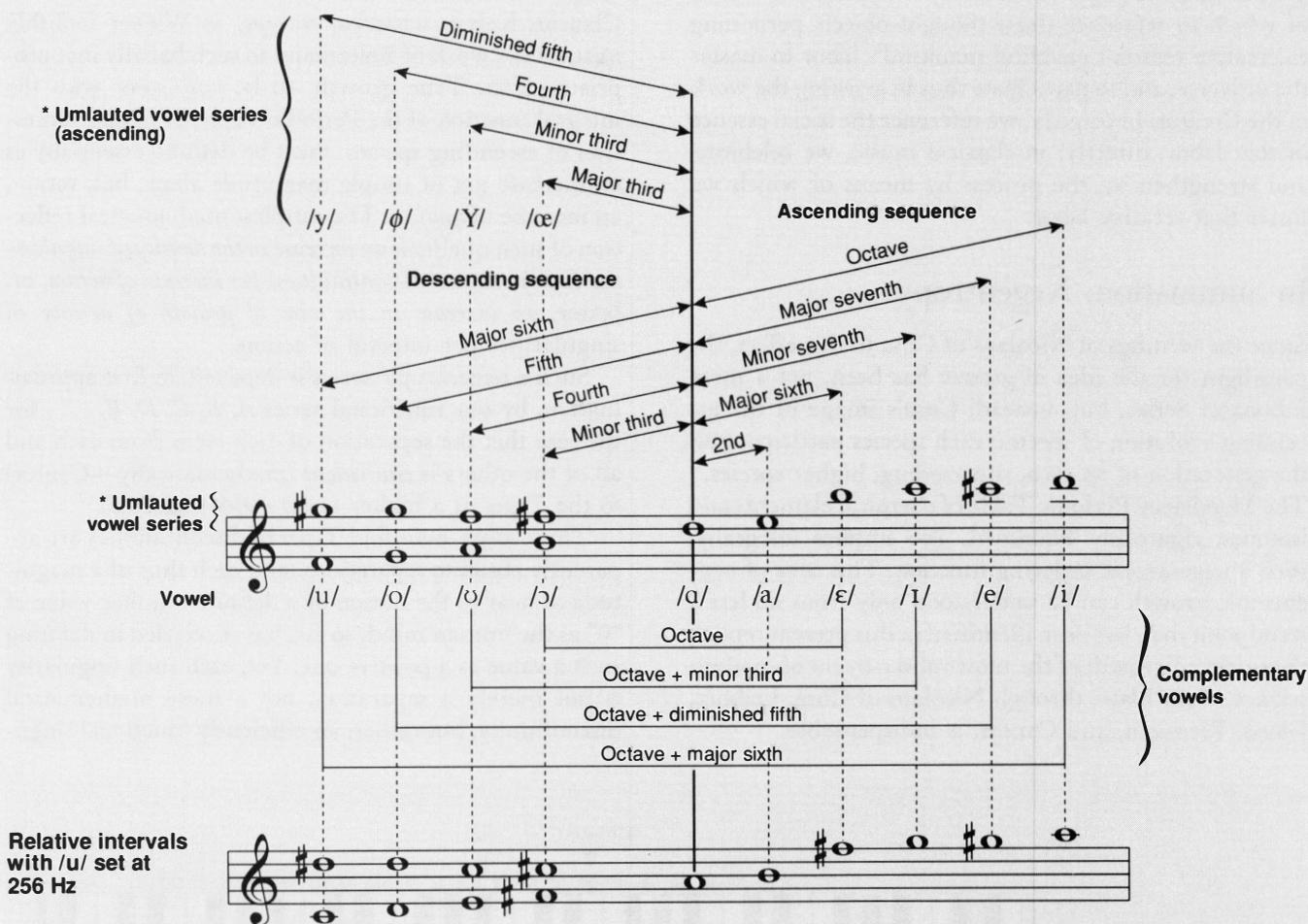
As these sources identify the related points, the human singing—and speaking—voice has a natural set of characteristics and values which are shown clearly by the most efficient training and use of the vocal apparatus. That “most efficient” training and use, is the “Florentine *bel canto*” already in use no later than the middle decades of the fifteenth century, probably in the time of the great Cosimo de Medici’s leadership there. “Most efficient” signifies the ratio of projected tone to air expelled from the singer’s mouth and nose. The speaking of a language, notably the enunciation of the vowels (*vocalization*) is

thus naturally *tuned* (SEE Figure 20).⁶⁹ Each natural species of adult singing (and speaking) voice has its own specific division among registers of mutually distinct “color,” divisions located specifically (SEE Figure 21) within a specific between-note interval on the C-256-pivoted-well-tempered musical scale.

A relatively elementary illustration of the implications, is effected by attempting to compose a vocal quartet (soprano, mezzo-soprano, tenor, bass) in the medium of well-tempered polyphony, using an opening line from a classical poem such as, for English speakers, one by John Keats. First,⁷⁰ use the simplistic, but rigorous scheme of Goethe’s favorite song-setter, J. F. Reichardt. Begin with the soprano part, setting the first utterance of the line within the soprano’s second register. Then, examine the difficulties of writing a simple, four-part canon, copying the soprano part into each of the other three voices. A novice should try to copy with equal distance below the

Vocalization of German in the Male Voice

Actual pitch, transposed down one octave



second to third register shift for each species of voice.

Observe two of the most obvious features of these attempts. First, note in passing, the chords defined by the polyphony. Second, linger over the implications of the cross-voice sequencing. For an example of cross-voice sequencing, select a note from the bass line; read the note immediately following that in the tenor line; similarly, successively, from the mezzo-soprano and soprano lines. Repeat this cycle for each of the following tones in the bass line. Now, consider other cross-voice sequences, treating first all of the possible permutations which begin with the bass line. Note a similarity to some possible orderings within an *aleph*-manifold, as referenced earlier.

In each of these cross-voice sequences, observe the dissonances generated; but, do not end the matter there. Study the rules for classical canons from this standpoint. Generalize the notion of a resolution for each such disso-

nance. All of this is a process of the formation of a thought-object from the single polyphonic germ of one line of classical poetry. The fact that each dissonance implies a range of possible resolutions, defines a manifold of all of each. Thus, does a polyphonic setting of even a single line of classical poetry define implicitly a Cantor Type.⁷¹

The example just given is premised upon the mere rudiments of classical song-writing; yet it suffices to illustrate the notion, that music is the domain of metaphor, not of symbolism. Since this music originates in the naturally determined forms for polyphonic vocalization of classical poetry, the *transfinite essence* of musical composition must be recognized as an "hereditary" implication of classical poetry, and, thus, also of language in general, and drama.

In language, we have primary reference to the senses of vision and hearing; insofar as language references the

senses, it refers chiefly to these two. Vision is geometry; hearing and speech are the language of music. So, language equips us to provide sensory metaphors, by means of which to reference those thought-objects pertaining to creative reason's enabling mankind's labor to master the universe, and to participate thus in assisting the work of the Creator. In tragedy, we reference the social essence of that labor, directly; in classical music, we celebrate, and strengthen so, the process by means of which we foster that creative labor.

In Summation: Negentropy

Since the writings of Nicolaus of Cusa to this effect, the paradigm for the idea of *growth* has been, not a mere Fibonacci Series, but, instead, Cusa's image of the ascending evolution of species; each species participates in the generation of its own, superseding, higher species.⁷² The Mendeleev Periodic Table of chemical elements and isotopes, rigorously examined, also implies integrally, such a negentropic ordering function. This idea of negentropic growth can be understood only from no less a standpoint than has been identified in this present report; the sweep of growth of the most valid current of modern science, from Plato, through Nicolaus of Cusa, Leibniz, Gauss, Riemann, and Cantor, is indispensable.

This form of growth must be understood to signify qualitatively more than mere linear increase of magnitude. Nor can it be confined to a mere inversion of Clausius-Kelvin statistical *entropy*, as Wiener foolishly misuses the work of Boltzmann to such banally inappropriate effect. True growth, to be consistent with the integral function of the Periodic Table, or Cusa's succession of ascending species, must be defined essentially as an increase not of simple magnitude alone, but, rather, an increase of *quality*. The simplest mathematical reflection of such quality is *an increase in the density of singularities (mathematical discontinuities) per interval of action*, or, better, *an increase in the rate of growth of density of singularities per interval of action*.

Such a negentropic series is depicted, in first approximation, by our functional series *A, B, C, D, E, . . .*, for the case that the separation of each term from each and all of the others is *equivalent* (mathematically—Cantor) to the *Types* of a higher-order *aleph*-manifold.

Those *aleph*-manifold *Types* of discontinuities are apparently absolute separations, and each thus of a magnitude as near to the notion of a definite number-value of "0" as the human mind, so far, has succeeded in defining such a value as a positive one. Yet, each such singularity is not merely a separation, not a mere mathematical discontinuity, but rather, an efficiently functional singu-

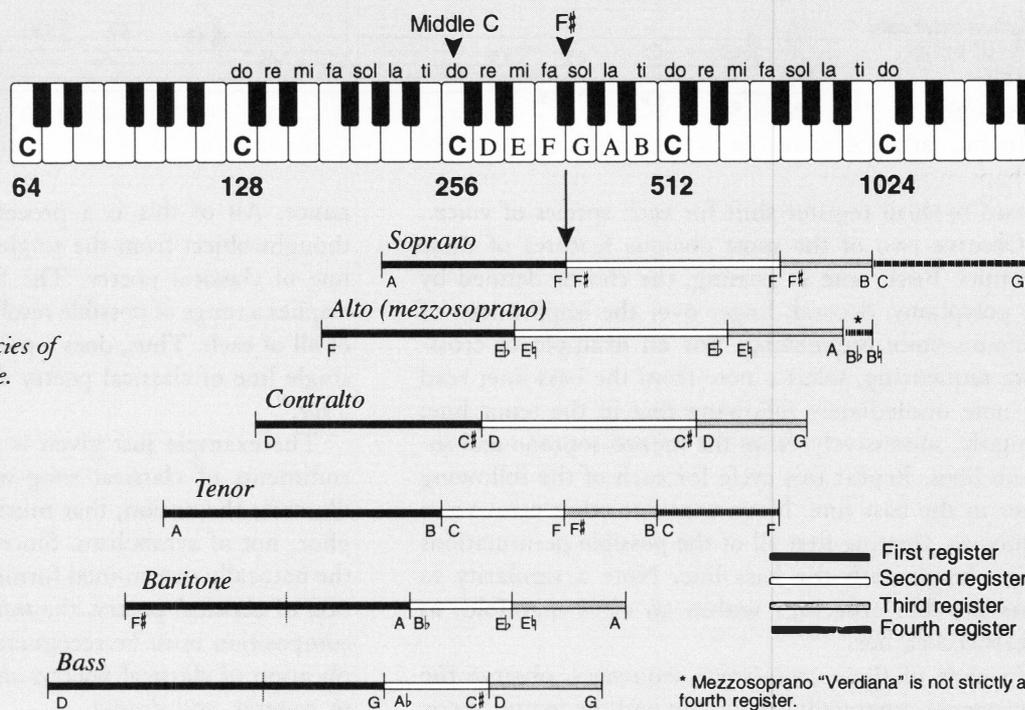


FIGURE 21. *The six species of the human singing voice.*

larity, whose content is equivalent to that of a thought-object—a *Monad*. That which Leibniz identifies as a *Monad*,⁷³ that toward which Riemann points with his *Geistesmassen*,⁷⁴ and that which is termed here a thought-object, has that functional significance.

Thus, we have situated the indispensable role of metaphor, as the essential poetic characteristic of any scientific or similarly rigorous communication. *Metaphor* is the key, the only possible means by which the unutterable is rendered *perfectibly intelligible* in communication among two or more persons.

As a matter of contrast, *symbolism* merely combines by reference, one sensory experience with another, or, in a worst case, the mere name for one thing with the name for another object or mere name. *Symbolism* is to intelligent communication as cabalistic numerology stands in opposition to both science and even mere sanity itself. Symbolism is merely combinatorial construction within the virtually empty domain of names.

An intelligent notion of *metaphor* hangs upon Plato's Socratic dialectic of negation. The referent is the experience of generating a true thought-object, not a sense-impression, through the processes of creative reason. Metaphor, so comprehended, is therefore the tactic by means of which two minds may coordinate an ordering among respectively similar thought-objects, in a problem-solving mode of creative thinking. This is the only means available to mortal persons, by which the unutterable thought-object is rendered, more or less adequately, *perfectibly intelligible*. Metaphor, so comprehended, is therefore the required essence of the secondary school classroom.

In fine art, the principle of metaphor is indicated, perhaps most sufficiently, by our rejection of "romanticism," "naturalism," and "modernism" in such art-forms as Classical music. Consider some selected highlights from the two-hundred-year history of Classical polyphony from the work of J. S. Bach through the 1890's Johannes Brahms.⁷⁵ Take two particular points of reference from within that domain: that revolutionary breakthrough in Classical polyphony effected by J. S. Bach's composition of his *Musical Offering*,⁷⁶ and what is identified as Joseph Haydn's discovery of the *Motivführung* principle of thoroughly integrated composition.⁷⁷ Examine these two as Wolfgang Amadeus Mozart combined their effect in his celebrated "Haydn" string quartets of 1782-1785.⁷⁸ This case, as continued by Beethoven, Schubert, and Chopin, illustrates the way in which all serious Classical musical composition is subsumed by the principle of metaphor.

The famous *Ricercar* of J. S. Bach's *Musical Offering* solves a problem in counterpoint by a tactic which Leib-

niz would recognize as *analysis situs*. Mozart's intensive, regular encounter with the work of Handel and the Bachs, at the regular Sunday, Vienna salon of Baron Gottfried von Swieten occurred during the time-frame Mozart was inspired by the celebrated "Russian" string quartets which Joseph Haydn had then just recently presented. The impact of Bach's *Musical Offering* is most striking in the sixth of Mozart's "Haydn" Quartets, the C-minor, "Dissonant," K. 465. The same connection is characteristic of Mozart's famous keyboard fantasy-sonata K. 475-457, which is quoted directly by Beethoven as his own keyboard sonatas Opus 13 and Opus 111, and also the C-minor violin sonata, Opus 30, No. 2. Beethoven's Opus 13 is quoted by Franz Schubert's posthumously published C-minor keyboard sonata; the opening movement of Chopin's "Funeral March" keyboard sonata quotes Beethoven's Opus 111. All of Mozart's major compositions of the 1782-1791 interval reflect his revolutionary insight into the combined importance of the two predecessors' cited discoveries.

The greatest representation of Haydn's *Motivführung* principle, is the "Credo" of Beethoven's *Missa Solemnis*. A beautiful, and masterful presentation of the same principle, is found in the opening movement of Brahms' *Fourth Symphony*. With the work of the 1782-1791 Mozart, the key to comprehension, and performance of each composition, is to locate the manner in which the *Motivführung* principle is elaborated to define the composition as a single, indivisible, unifying conception of the development of a single germ.⁷⁹

The point of these brief references to Classical music, is to show how it is that all good Classical composition, especially since Haydn's referenced discovery, defines each thoroughly composed work as representing a single, integral, indivisible thought-object, a thought-object corresponding to a specific notion of *ordered development*.

The real music of such a Classical composition is a thought-object, for which the sensed aspect of the music is an indispensable metaphor. The thought-object appears "between the notes," so to speak, as the apparent, absolute mathematical discontinuities of the functional, non-linear series, *A, B, C, D, E, . . .*, taken as a whole, defines implicitly (*negatively*) the thought-object corresponding metaphorically to that series.

The most obvious of the discontinuities of a musical score, are the simple intervals defined by the time-intervals between tones, and by (*negatively*) duration of tones. The simplest notion of the ordering of intervals is a *scale* or *mode*. The changes from one to another scale or mode, are a higher ordering; and, so on.

These values are not relative values, but are situated with respect to an absolute, well-tempered scale of

C = 256 cycles, and are also situated with respect to vocalized poetic forms of speech, and, so forth and so on.

Therefore, the representation of that metaphorically situated thought-object, the which is the intent of the composition, requires rigorously clean polyphonic transparency. Differences must not arise except as differences are necessary to metaphorical representation of the relevant thought-object.

Thus, the performers must not simply perform the notes. They must, first, experience the relevant thought-object, and then read the notes to the purpose of causing the experienced dissonances and other differences in the performance to correspond to nothing but the metaphorical development of the unifying thought-object.

If we compare this overview of Classical music with Classical tragedy, seeking to grasp the common developmental characteristic of both media, we have a correct view of fine art, as Kant did not, a conception of art which corresponds to science as we have portrayed science here. If we comprehend the unity of a composition, one of any species of the fine arts, as being that composition's existence as a truly metaphorical work of art, and, if we seek out that conception of unity, as a precondition for our representation of that work of art, we are on the proper track.

A recent edition of selected Cantor correspondence contains a citation which is typical of Cantor's view of a certain important matter, and is directly relevant to the disgusting, and destructive incompetence of "information theory's" pretense to the name of "science":

The majority of modern mathematicians, through the brilliant success of their self-perfecting formal character, which admits of more and more applications to the mechanical side of nature, have become flushed with a victory, which causes them to degenerate into materialistic one-sidedness and makes them blind to any objective-metaphysical knowledge and thus also to the foundations of their science.⁸⁰

The root of that against which Cantor complains here, as he did frequently to the same effect in other locations, is the materialist tradition of "Buggery" as imposed upon seventeenth-century empiricism and Cartesianism by the Rosicrucian/Theosophist cult. This neo-paganist, materialist, "Enlightenment" cult, directed its energies toward uprooting and crushing the Christian Platonic tradition of Cusa, Leonardo da Vinci, Kepler, Leibniz, *et al.* Thus, it sought to uproot and destroy such specific, crucial thought-objects as Cusa's negative definition of the elementarity of circular action as universal least action, of Leonardo da Vinci's treatment of Golden Section

harmonics, of Kepler's partition of elementary spherical space-time into negative and positive curvatures, of the seventeenth-century development of the interdependent notions of non-linear and least-action function.

As Cantor demonstrates, especially by aid of his richly historical treatment of his subject, driving non-algebraic function to the remotest boundaries of both macrocosm and microcosm, works to such effect that the Platonic principle of negation enables us to discover the necessary, intelligible existence of causal agency far beyond the furthest reach of non-algebraic function. Before this discovery could be made, it were necessary, not only to discover non-algebraic functions, but to show, from this vantage-point, that all ontological assumptions premised axiomatically upon an arithmetic or an algebraic standpoint are intrinsically false. Only by establishing such unique relative authority of non-algebraic function and its intrinsic, Leibnizian principle of universal least action, could the basis be found for discovery of the higher manifold.

If we today look back to Kepler's distinction, respecting harmonic implications, between positive and negative spherical curvatures, and note the derivation of modern "non-algebraic" function theory from such roots, we should recognize in this way why ignorance of the elementary discoveries of Cusa, Leonardo, Kepler, Leibniz, *et al.*, would blind modern victims of an empiricist education into seeing nothing but the mechanistic, entropic implications of positive curvature, being thus blind to the interrelated, dominant principles of negative curvature and least action. Hence, they cannot understand the nature of those limits of non-algebraic function upon which Cantor's most crucial discoveries rest.

What Cantor shows in this way cannot be compared, or contrasted to formal notions of function, in any ordinary sense. What Cantor demonstrates in fact, by the argument elaborated in his 1895-1897 *Beiträge*,⁸¹ is that the formal aspect of the ordinary notion of mathematical function, even non-algebraic function, is but a metaphorical reflection of an entirely different ordering, an ordering of *thought-objects*, which order itself is, ontologically, also such a *thought-object*.

We enter thus into a world of such conscious objects, that their origins, their nature, their place, and their implicit effect, can be communicated to other minds; but, in this case, the conscious object—the thought-object itself—is unutterable in any mode of communication as such. In these cases, the communication of the object itself, from one mind to the other, occurs either by causing, dialectically, the creation of that other object in the mind of the hearer, or by prompting the hearer to recall such an earlier experiencing of the generation

of that thought-object.

That is also to say, that such communication cannot be effected as the transmission of “information”; but, rather, only by subordinating the process of communication to the most intensive and strict methods of Platonic, dialectical reasoning. Hence, all “information theory,” insofar as it pertains to human thought, is not merely a fraud, but a monstrously destructive attack upon an entire crippled generation of victims. Unfortunately, under the evil influence of John Dewey and his like, and the more evil influence of the Frankfurt School and, now, the current, “New Age” and related reforms generally in effect in our classrooms today, that destructive fraud has become the hoax, which today passes for a more or less accepted standard for education.

Now, we conclude with closing words on the matter of the problem of intelligibility in the communication of thought-objects.

Refer, once more, to the pedagogical series of formal theorem-lattices, *A, B, C, D, E, . . .*. The intelligibility of both *A* and *B*, for example, as member-terms of such a non-linear function series, is found in the *change* of “hereditary principle”—of the axiomatic basis—which distinguishes *B* from *A*. The ontological quality of this function of *change* is located formally “within” the *aleph*-manifold *Type* of discontinuity between each pair of terms. That *change*, so formally located, is the causal feature of the process as a unified whole. The equivalent aspect shared among all such changes in that series, defines a *Type*, and also defines a thought-object corres-

ponding, as a *One*, to the generation of the *Many* terms of this series.

This aspect of the matter is expressed in the communication-process by the Platonic form of *negation* of the “hereditary,” axiomatic principle separating one set of underlying assumptions—as for theorem-lattice *A*—from all other sets of a series—such as theorem-lattice *B*, or *C*, or *D*, Communication in this Platonic mode, as employed, for example, by Cusa, is the only possible *Type* of communication of those conceptions—thought-objects—which are not susceptible of explicit representation within the linear “band-pass” of any medium of communication itself.

The essential feature of all such Platonic communication is predominantly twofold. First, the essential thought-object, to which all other thought-objects should be referenced, is the notion of *negentropy* as that has been implicitly, metaphorically defined here (that takes into account “anti”-negentropy). Second, that the reality to which our thought-object manifold’s *Type* must correspond, is mankind’s successfully negentropic social reproduction of our species—*imago viva Dei*—in the universe, by our negentropically-ordered changes in mankind’s practice upon that universe.

It must be in art as in science. *Truthfulness* is Socratic irony, and *Truth* is a metaphor. We cannot say what we mean; but, we can render our conceptions of, and intent to *change* intelligible to other minds, by aid of a rigorous regard for the fact that information so-called is never more than metaphor.

NOTES

1. Cervantes’ *Don Quixote* is a Platonic form of classical tragedy given in prose form. See Miguel de Cervantes, *The Ingenious Gentleman Don Quixote de la Mancha*, trans. by Samuel Putnam (New York: Random House, 1949).
2. William Empson, *Seven Types of Ambiguity* (Middlesex: Penguin Books, 1961).
3. Cf. Bernhard Riemann, “Zur Psychologie und Metaphysik,” on Herbart’s Göttingen lectures, for Riemann’s reference to *Geistesmassen*, in *Mathematische Werke*, 2nd. ed. (1892), posthumous papers, ed. by H. Weber in collaboration with R. Dedekind.
4. Archimedes, “Measurement of a Circle” and “Quadrature of the Parabola,” in *The Works of Archimedes*, ed. by T.L. Heath (New York: Dover Publications). Cardinal Nicolaus of Cusa, *De Docta Ignorantia (On Learned Ignorance)*, Book I, trans. by Jasper Hopkins as *Nicholas of Cusa on Learned Ignorance* (Minneapolis: Arthur M. Banning Press, 1985); also, “De Seculii Quadratura” (“On the Quadrature of the Circle”), trans. into German by Jay Hoffman (Mainz: Felix Meiner Verlag).
5. See G.W. Leibniz, “History and Origin of the Differential Calculus,” in *The Early Mathematical Manuscripts of Leibniz*, trans. by J.M. Child (LaSalle: Open Court Publishing Co, 1920), pp. 22-58.
6. It is always useful in mathematics, to reflect upon the physical implications of one’s calculations. At $n = 112$, two adjacent polyg-

onal angles on the circumference of a circle of 1-centimeter radius are 1.21009×10^{-33} centimeters. For a $n = 256$ polygon, 5.42626×10^{-77} centimeters. Thus, to increase the distance between two adjacent angles of an $n = 256$ polygon to a significant 10^{-33} centimeters, would require a circle 2.23006×10^{43} larger than our circle of a 1-centimeter radius. The radius of this larger circle would be 2.236006×1038 kilometers, or 2.35717×10^{25} light years. Compare this kind of calculation with Archimedes’ famous sand-reckoner (“The Sand-Reckoner,” in *The Works of Archimedes, op. cit.*). How old is a universe whose radius is 2.35717×10^{25} light years?

7. Plato, *Parmenides*, Loeb Classical Library (Cambridge: Harvard University Press); Lyndon H. LaRouche, Jr., “Project A,” in *The Science of Christian Economy and Other Prison Writings* (Washington, D.C.: Schiller Institute, 1991).
8. Plato, *Timaeus*, trans. by R.G. Bury, Loeb Classical Library (Cambridge: Harvard University Press, 1975); see also *Plato’s Timaeus: The Only Authentic English Translation*, trans. by associates of Lyndon H. LaRouche, Jr., *The Campaigner*, Vol. 13, No. 1, Feb. 1979.
9. Luca Pacioli, *De Divina Proportione*, for which Leonardo da Vinci did the drawings. See, among various articles in the volume, Augusto Marinoni, “The Writer: Leonardo’s Literary Legacy,” in

- The Unknown Leonardo*, ed. by Ladislao Reti (New York: McGraw-Hill Book Company, 1974), which includes plates of Leonardo's drawings in *De Divina Proportione*, for this, as well as later references to Leonardo's hydrodynamics.
10. Johannes Kepler, *Harmonice Mundi*, (*On the Harmony of the Worlds*), in *Opera Omnia*, vol. 5, Frankfurt (1864), of which only Book V has been translated into English, in the *Great Books of the Western World* series (Chicago: Encyclopaedia Britannica, Inc.); *On the Six-Cornered Snowflake*, trans. and ed. by Colin Hardie (Oxford: Clarendon Press, 1966), reprinted by *21st Century Science & Technology*, 1991. See LaRouche, "In Defense of Common Sense," chap. VIII, and "The Science of Christian Economy," Appendices I-III, V, VI, in *Christian Economy*, *op. cit.*; also *A Concrete Approach to U.S. Science Policy*, chap. II (Washington, D.C.: Schiller Institute, 1992).
 11. Pierre de Fermat, *Oeuvres Fermat*, ed. 1891, epistl. xlii, xliii. Christiaan Huygens, *The Pendulum Clock, or Geometrical Demonstrations Concerning the Motion of Pendula as Applied to Clocks*, trans. by Richard J. Blackwell (Ames: Iowa State University Press, 1986). Gottfried Wilhelm Leibniz, "Specimen Dynamicum" (1695), in *Leibniz Selections*, ed. by Philip P. Wiener (New York: C.S. Sons, 1951); also, *Système Nouveau de la Nature*, 1695. Johann Bernoulli, *Acta Eruditorum*, May, 1697; trans. in D.E. Smith, *A Source Book in Mathematics* (New York: Dover, 1959), pp. 648-55. Jakob Bernoulli, *Acta Eruditorum*, May, 1697; trans. in D.J. Struik, ed., *A Source Book in Mathematics, 1200-1800* (Princeton, N.J.: Princeton University Press, 1986), pp. 292-299.
 12. Johannes Kepler, *Snowflake*, *op. cit.*
 13. See LaRouche, *U.S. Science Policy*, *op. cit.*, chaps. II and III.
 14. *Ibid.*
 15. *Ibid.*
 16. If the argument here appears to parallel that of Georg Cantor on *aleph* types, and Kurt Gödel's famous proof, the resemblance is intentional and well-grounded. See Georg Cantor, *Beiträge zur Begründung der transfiniten Mengenlehre (Contributions to the Founding of the Theory of Transfinite Numbers)*, trans. by Philip E.B. Jourdain (New York: Dover Publications, 1955). See also Ernest Nagel and James R. Newman, *Gödel's Proof* (New York: New York University Press, 1958).
 17. See LaRouche, "In Defense of Common Sense," chaps. II-IV, in *Christian Economy*, *op. cit.*
 18. *Ibid.*
 19. Cf. Nicolaus of Cusa, *De Docta Ignorantia*, *op. cit.*, Book I, chap. XIII, which has the use of a very large circle to approximate a straight line.
 20. Gilles de Roberval, "The Cycloid," from *Treatise on Indivisibles*, trans. Evelyn Walker (New York: Teachers College, 1932); also, quoted in D.J. Struik, *op. cit.*
 21. Christiaan Huygens, *The Pendulum Clock*, *op. cit.*
 22. *Ibid.*
 23. Christiaan Huygens, *The Pendulum Clock*, *op. cit.* Johann and Jakob Bernoulli, *op. cit.* Gaspard Monge, *Application de l'algèbre a la géométrie*, 5th ed., ed. by J. Liouville (Paris: Bachelier, 1850).
 24. Christiaan Huygens, *Treatise on Light* (1690), trans. Sylvanus P. Thompson (New York: Dover Publications, 1962). Gaspard Monge, *op. cit.*
 25. G.W. Leibniz, "On Analysis Situs," in *Gottfried Wilhelm Leibniz Philosophical Papers and Letters*, trans. and ed. by Leroy E. Loemker (Chicago: University of Chicago Press, 1956), Vol. I, pp. 390-396. Bernhard Riemann, "Lehrsätze aus der Analysis Situs . . .," in *Mathematische Werke*, *op. cit.*, quoted as "On Analysis Situs," in D.E. Smith, *op. cit.*
 26. Johannes Kepler, *Snowflake*, *op. cit.* See also LaRouche, *U.S. Science Policy*, *op. cit.*, chap. IV.
 27. Eugenio Beltrami's devastating refutation of the entire theory of elasticity upon which the Maxwell electromagnetic theory is based can be found in "Sulle equazioni generali dell' elasticità" ("On the General Equations of Elasticity"), *Annali di Matematica pura ed applicata*, serie II, tomo X (1880-82), pp. 188-211; trans. by Rick Sanders, *21st Century Science & Technology*, unpublished.
 28. Georg Cantor, *Theory of Transfinite Numbers (Beiträge)*, *op. cit.*; see also, *Georg Cantors Gesammelte Abhandlung*, ed. by Ernst Zermelo (Hildesheim, 1962). Also, *Gödel's Proof*, *op. cit.*
 29. Like the philosophically allied project, the "Frankfurt School" of Adorno, Horkheimer, Marcuse, Heidegger, Arendt, *et al.* (see Michael J. Minnicino, "The New Dark Age: The Frankfurt School and 'Political Correctness,'" *Fidelio*, Vol. 1, No. 1, Winter 1992), modern linguistics was also launched by the 1920's Communist International. The key Communist official was Stalin's collaborator in this project, Germany's Karl Korsch. During the 1930's, Korsch collaborated on this project with Rudolf Carnap, both in turn collaborating with Bertrand Russell and the Russell-Hutchins "Unification of the Sciences" project, in the initial, pre-war sessions held at the University of Pennsylvania. The University of Pennsylvania's Professor Harris adopted this linguistics as his profession, followed by his student, today's Professor Noam Chomsky.
 30. See Plato, *Timaeus*, *op. cit.*; Euclid, *The Thirteen Books of Euclid's Elements*, Books 10-13, trans. T.L. Heath (New York: Dover Publications, 1956); Luca Pacioli, *De Divina Proportione*; Johannes Kepler, *Harmonice Mundi*, *op. cit.*, chap. II; and also, Leonhard Euler, "Elementa doctrinae solidorum," St. Petersburg Academy of Science (1751).
 31. We pass over, for the moment, the additional stellated solids defined by, first, Johannes Kepler, *Harmonice Mundi*, *op. cit.*, chap. II; and Louis Poinsot, *Memoirs sur Les Polygons et Les Polyhedras (Notes on Polygons and Polyhedra)*, trans. by Laurence Hecht, *21st Century Science & Technology*, unpublished.
 32. Leonardo of Pisa (Fibonacci), *Liber Abaci (The Book of the Abacus)*, as quoted in D.J. Struik, *op. cit.*
 33. See footnote 11 for the relevant works of Huygens, Leibniz, and the Bernoulli brothers.
 34. Christiaan Huygens, *Treatise on Light*, *op. cit.* Cf. Johann Bernoulli, "Curvatura Radii," in Diaphanous Nonformabus *Acta Eruditorum*, May, 1697, as quoted by D.J. Struik, *op. cit.*, pp. 391-399.
 35. See LaRouche, *U.S. Science Policy*, *op. cit.*, chap. III.
 36. *Ibid.* Leibniz's commentary on this view of Newton is in his first letter to Clarke, from 1715: "Sir Isaac Newton and his followers have also a very odd opinion concerning of the work of God. According to their doctrine, God Almighty wants to wind up his watch from time to time; otherwise, it would cease to move." In Clarke's reply, he acknowledges that God "not only composes or puts things together but is himself the author and continual preserver of their original forces or moving powers." Reprinted in *Leibniz Philosophical Papers*, *op. cit.*, Vol. II, pp. 1095-1169.
 37. In 1850, Rudolf Clausius wrote his first article discussing the theory of heat. Clausius' book was without experimental proof, and also without any reference to a "universal law." In 1852, William Thomson (later Lord Kelvin), wrote an article entitled, "On a universal tendency in nature to the dissipation of mechanical energy." This article consisted of ideological speculations on the experimental work on heat-powered machines of the French scientist Sadi Carnot, in which Thomson had not participated. In that article, Thomson postulated that the universe, since it was nothing but a machine, would one day run down. In 1854, Thomson's friend Helmholtz used the same thesis in his *On the Transformation of Natural Forces*. Finally, Clausius, in the second (1865) edition of his book, after a meeting with Thomson, concluded the book with the famous two axioms: (1) the energy of the universe is constant; and (2) the entropy of the universe tends toward a maximum. See LaRouche, *U.S. Science Policy*, *op. cit.*,

- chap. III.
38. See LaRouche, *U.S. Science Policy, op. cit.*, chap. III.
 39. A postulate is distinguished as an unproven assumption, in imitation of a true axiom, introduced to eliminate arbitrarily an otherwise ambiguous or incomplete feature of the theorem-lattice manifold generated by a pre-existing set of axioms and postulates.
 40. The great Hilbert is reported to have thrown student Norbert Wiener out of a scientific seminar at Göttingen for persistent methodological incompetence.
 41. Cf. Winston Bostick, "The Plasmoid Construction of the Superstring," *21st Century Science & Technology*, Vol. 3, No. 4, Winter 1990; also, "How Superstrings Form the Basis of Nuclear Matter," *21st Century Science & Technology*, Vol. 3, No. 1, Jan-Feb 1990.
 42. Hence, as Philo of Alexandria denounced the *gnostic* followers of Aristotle among Jewish rabbis of his time, neither Creation nor God could actually exist in a nominalist form of deductive system such as that strictly attributable to Aristotle. See Philo, "On the Account of the World's Creation Given by Moses" ("On the Creation"), in *Philo*, Vol. I, trans. F.H. Colson and G.H. Whitaker, Loeb Classical Library, (Cambridge: Harvard University Press, 1981).
 43. Works in which Cusa emphasized the isoperimetric principle include *De Docta Ignorantia, op. cit.*, Book I, and "On the Quadrature of the Circle," *op. cit.*
 44. St. Augustine, *De Musica (On Music)*, trans. by R. Catesby Taliaferro (Annapolis: St. John's College Bookstore, 1939).
 45. LaRouche, "In Defense of Common Sense," chaps. II-IV; and "The Science of Christian Economy," chaps. II-IV, VI; in *Christian Economy, op. cit.*
 46. Cf. Nicolaus of Cusa. Cusa's view in an early work, *On Learned Ignorance*, is that "God has implanted in all things a natural desire to exist with the fullest measure of existence that is compatible with their particular nature There is in them a discernment that is natural and in keeping with the purpose of their knowledge, which ensures their natural inclination serving its purpose and being able to reach its fulfillment."

Later, in "The Vision of God" (1464), Cusa develops the conception that each species, with its natural faculties as they develop, "yearns" for the existence of a higher species, as man does for the knowledge of the Absolute, of God. Here, Cusa's idea of negentropic species-evolution as the characteristic of Creation, is expressed by the poetic conception *terminus speciei*. The universe consists of negentropic growth of higher orderings, whose microcosm is human reason. The species recognizes this divine order of creation, in its own way, and becomes a singularity in the transition from one ordering to the next. Thus the species has a *terminus speciei*, the actualization of infinity in one point, which enables further development. "This power, which I have from Thee, and in which I possess a living image of the power of Thy almightiness, is the free will through which I am capable of either increasing or reducing the capacity to receive Thy beneficence."
 47. See LaRouche, *U.S. Science Policy, op. cit.*, chap. III, section "The Geometry of Creative Reason."
 48. See LaRouche, "In Defense of Common Sense," chaps. IV, XII; "Project A," chaps. XVII, XVIII; and "The Science of Christian Economy," chaps. IV, VII; in *Christian Economy, op. cit.*
 49. On Descartes' *deus ex machina*, see LaRouche, *U.S. Science Policy, op. cit.*, chap. IV.
 50. Sir Isaac Newton, in his *The Mathematical Principles of Natural Philosophy* (New York: The New York Philosophical Society, 1964), states "*hypothesis non fingo*" (I don't make hypotheses), and explains his reasons for this on grounds of *induction* versus hypothesis.
 51. See LaRouche, *U.S. Science Policy, op. cit.*, chap. IV.
- We first hear of the Bogomils in the tenth century A.D. in Bulgaria. (In Bulgarian, *Bogomil* means "beloved of God.") Among their beliefs is the characteristically gnostic one, that the Father of Jesus Christ was not the Creator of the world. For the Bogomils and later the Cathars, the power of the devil worked through the nature and constraints of the material world; matter and spirit were never meant to cohabit. This division and its corresponding principles of good and evil, light and darkness, is broadly called dualism. For the origins of the Bogomil or Cathar cults in Manicheism, and the Albigensian Crusade against them, see LaRouche, *Christian Economy, op. cit.*, pp. 485-486.
52. The Cathar cult was known in France as the Bulgarian cult, or "Les Bogres," which translated into English as "the Buggers." Because of the cult's peculiar sexual perversion, which flowed from their gnostic doctrine of separation of matter and spirit, it resorted to various other kinds of sexual activity, and thus the name "Bugger" became associated in English with homosexuality.

Overt gnostic cultism continues to this day, including the sexual perversions. In Colombia, for example, the head of the Universal Christian Gnostic Church, Samael Aun Weor, is the author of a book entitled *Perfect Marriage*, which asserts: "The age of sex is coming, the New Age of Aquarius Sexual magic will be officially admitted in the universities of the new Aquarian Age." The book continues: "To create a child, you do not need to spill semen. The spermatozoid which escapes without spilling semen is a choice spermatozoid of a superior nature, totally mature. The result of such impregnation is a new creation of extremely high order. That is how we can form a race of Supermen. In the mysteries of Eleusis, the sacred dances, the naked dances, the burning kiss and sexual connection, they make men unto Gods . . . the Sufi dances and the whirling dervishes are tremendously marvelous." Aun Weor is also the author of *The Social Transformation of Society*, which sketches the Gnostics' political program for Latin America. The Gnostic Church has been the political controller of the M-19 narcoterrorists who today share power with the government of Colombia.
 53. See Friedrich Schiller, "The Legislation of Lycurgus and Solon," in *Friedrich Schiller, Poet of Freedom*, Vol. II, ed. by William F. Wertz, Jr. (Washington, D.C.: Schiller Institute, 1988).
 54. See Fred Henderson, "Free Trade, The Confederacy, and Slavery," *The New Federalist*, Vol. V, No. 36, Nov. 11, 1991, pp. 5-6; "The Lee myth is debunked but not the more dangerous mythmakers," *Executive Intelligence Review*, Vol. 18, No. 38, Oct. 4, 1991, p. 62ff.
 55. The decrees of the Roman Emperor Diocletian (284-305 A.D.) attempted to freeze the economic crumbling of the Roman Empire by fixing prices and wages by law. This led in the fourth century to the reforms of the Emperor Theodosius, which established legal enforcement of the occupation which each Roman citizen was forced to follow for his entire life. These Malthusian reforms were the earliest attempt to impose socialist decrees by totalitarian government. See *Global Showdown*, §2.3 (Washington, D.C.: Executive Intelligence Review, 1985), on the edicts of Diocletian and his successors; see also Kenneth Kronberg, "How the Romans nearly destroyed civilization," in *The Genocidal Roots of Bush's 'New World Order'* (Washington, D.C.: Executive Intelligence Review, 1992), pp. 158-59.
 56. See, for example: Benjamin Franklin, "Proposals Relating to the Education of the Youth in Pennsylvania," Philadelphia (1749). Thomas Jefferson, "A Bill for the More General Diffusion of Knowledge" (1779), in *Thomas Jefferson: Writings*, ed. by Merrill D. Peterson (New York: Library of America, 1984): "[T]he most effectual means of preventing [tyranny] would be, to illuminate, as far as practicable, the minds of the people at large . . . [Therefore] it becomes expedient for promoting the public happi-

ness that those persons, whom nature hath endowed with genius and virtue, should be rendered by liberal education worth to receive, and able to guard, the sacred deposit of the rights and liberties of their fellow citizens, and that they should be called to that charge without regard to wealth, birth, or other accidental condition or circumstance." John Adams, "Thoughts on Government" (1776), in *American Political Writing During the Founding Era: 1760-1805*, Vol. I, ed. by Charles S. Hyneman and Donald S. Lutz (Indianapolis: Liberty Press, 1983). Benjamin Rush, "A Plan for the Establishment of Public Schools and the Diffusion of Knowledge in Pennsylvania; To Which Are Added, Thoughts upon the Mode of Education, Proper in a Republic" (1786), in *American Political Writing*, *op. cit.*

57. See Friedrich Schiller, "Aesthetical Lectures (1792-1793)" and Wilhelm von Humboldt, "On Schiller and the Course of His Spiritual Development," both in *Friedrich Schiller, Poet of Freedom*, *op. cit.* Humboldt, who predicated his work on the influence of and education provided him by Schiller, was for a time responsible for all educational policy in Prussia.
58. See Immanuel Kant, *Critique of Pure Reason*, trans. by Norman Kemp Smith (New York: St. Martin's Press, 1965); *Critique of Practical Reason*, trans. by Lewis White Beck (Indianapolis: Bobbs-Merrill Company, 1956); also, in particular, *Critique of Judgment*, trans. by J.H. Bernard (New York: Hafner Press, 1951), §30-54, p. 152ff.: "[Genius] cannot describe or indicate scientifically how it brings about its products [A] Homer . . . cannot show how his ideas . . . come together in his head, simply because he does not know, and therefore cannot teach others."
59. Plato's arguments connecting the idea of the Good (or the Absolute Infinite as expressed by later Christian Platonists), both to the evolution of the physical universe, and to the process of Becoming proper to human reason, are developed with more and more arduous rigor in a number of dialogues: *Theaetetus*, *Parmenides*, *Sophist*, *Republic*, *Philebus*, *Timaeus*, *Critias*.
60. See footnote 58.
61. Immanuel Kant, *Critique of Judgment*, *op. cit.*
62. See *A Manual on the Rudiments of Tuning and Registration*, Vol. I (Washington, D.C.: Schiller Institute, 1992), chap. 11.
63. See footnote 1.
64. Georg Cantor, *Theory of Transfinite Numbers*, *op. cit.*
65. See Nicolaus of Cusa, "On Conjectures," in *Philosophisch-Theologische Schriften*, Vol. II (Vienna: Herder & Co., 1982), p. 158. "Man is indeed God, but not absolutely, since he is man; he is therefore a human God. Man is also the world, but not in a contracted way everything, since he is man; man is therefore a microcosm or a human world. The region of humanity therefore embraces God and the whole world in its human potentiality."
66. See Nicolaus of Cusa, "On the Filiation of God," in *Philosophisch-Theologische Schriften*, *op. cit.*, p. 640. "Indeed, just as God is the actual essence of all things, so is the intellect, separated and united in itself vitally and reflexively, a living similitude of God. Therefore, as God Himself is the essence of all things, so the intellect, the similitude of God, is the similitude of all things. Cognition, however, is effected through similitude. However, since the intellect is an intellectual living similitude of God, it knows, when it knows itself, everything in itself as the one."

See also Philo of Alexandria, *op. cit.*, §XXIII: "Moses tells us that man was created after the image of God and after His likeness (Gen. 1:26). . . . Let no one represent the likeness as one to a bodily form; for neither is God in human form, nor is the human body God-like. No, it is in respect of the Mind, the sovereign element of the soul, that the word 'image' is used; for after the pattern of a single Mind, even the Mind of the universe as an archetype, the mind in each of those who successively came into being was moulded. . . . [The human mind] opens by arts

and sciences roads branching in many directions, all of them great highways. . . . [W]hen on soaring wings it has contemplated the atmosphere and all its phases, it is borne yet higher to the ether and the circuit of heaven, and is whirled round with the dances of planets and fixed stars, in accordance with the laws of perfect music, following that love of wisdom which guides its steps. And so, carrying its gaze beyond the confines of all substance discernible by sense, it comes to a point at which it reaches out after the intelligible world."

67. See LaRouche, "In Defense of Common Sense," chap. XI; "Project A," chap. II; and "The Science of Christian Economy," chap. V; in *Christian Economy*, *op. cit.*
68. Cf. *A Manual on Tuning*, *op. cit.* References are the Preface: "The Classical Idea," *passim*; chap. 2: "The Six Species of Singing Voice"; chap. 9: "The Principles of Bel Canto"; chap. 10: "The Synthetic Geometry of Composition"; and chap. 11: "Artistic Beauty: Schiller vs. Goethe."
- See also LaRouche, "Solution to Plato's Paradox of the 'One and the Many,'" and Jonathan Tennenbaum, "The Foundations of Scientific Musical Tuning," *Fidelio*, Vol. 1, No. 1, Winter 1992.
69. See *A Manual on Tuning*, *op. cit.*, chaps. 9 and 10.
70. Cf. *A Manual on Tuning*, *op. cit.*, chap. 11.
71. The attribution of musical notions to Cantor's work is ironically most appropriate. Cantor was an able amateur musician, of a musical tradition traced to his maternal grandfather *Kapellmeister* Ludwig Böhm, whose violinist brother, Joseph, was the teacher of the great virtuoso Joachim. (Adolf Frankel, *Das Leben Georg Cantors*, cited in *Georg Cantors Gesammelte Abhandlung*, *op. cit.*, p. 452.) It was this Ludwig Böhm who delivered the definitive performance of Beethoven's late string quartets on Beethoven's behalf.
72. See footnote 46 for Cusa's concept of species-evolution.
73. See, G.W. Leibniz, *Monadology*, trans. by George Montgomery (LaSalle: Open Court Publishing Co., 1989).
74. See footnote 3.
75. The, unfortunately, popularized myth of an "Hegelian" division of musical history, into successive "baroque," "classical," and "romantic" periods, should be simply ignored as nonsense. The work of *Classical composers* such as J. S. Bach, his famous sons, Haydn, Mozart, Beethoven, Schubert, Mendelssohn, Schumann, Brahms, *et al.*, is separated by a *moral principle of composition* from the contrasting, irrationalist principle of ascending chromatic eroticism adopted by such nineteenth-century *Romantics* as Berlioz, Liszt, and Wagner, *et al.*
76. Johann Sebastian Bach, "Musical Offering," BWV 1079 (New York: G. Schirmer, 1944).
77. Joseph Haydn, Opus 33, "Russian" string quartets (Mineola, N.Y.: Dover Publications, 1985), ed. by Wilhelm Altman.
78. Cf. Bernhard Paumgartner, *Mozart* (München: 1991), chap. 31, pp. 299-311; p. 548.
79. See *A Manual on Tuning*, *op. cit.*, chap. 12 *passim*, on the principled approach of Beethoven and Brahms to composing a set of variations on a theme.
80. Cited in Herbert Meschkowski and Winfried Nilson, eds., *Georg Cantors Briefe*, (Heidelberg: Springer Verlag, 1991), pp. 9-10, 478; from J. Bendiek, "Ein Brief Georg Cantors an Pater Ignazius Jeiler O.F.M.," *Französisch Kannischer Studien* 47, 1965, pp. 65-73. "Die modernen Mathematiker in ihrer Mehrheit durch den glänzenden Erfolg ihres stets sich vollkommenden Formalwesens, das immer mehr Anwendungen auf die mechanische Seite der Natur zulässt, in einen Siegesrausch hineingeraten sind, der sie zur materialistischen Einseitigkeit verkommen lässt und sie für jegliche objektiv-metaphysische Erkenntnis und daher auch für die Grundlagen ihrer Wissenschaft blind macht."
81. See footnote 28.

‘An Angelo for Claudio, Death for Death?’

Shakespeare’s *Measure for Measure* (written in 1604), was the first major production for 1992, of the National Shakespeare Theater in Washington, D.C. The setting of the performances in May and June during the agonizing days before and after the execution of Roger Keith Coleman in nearby Greenville, Virginia, had a visible effect on the spectators. Although the production was a very bad one, many in the audience were on the edge of their seats during the second half of the play, as on the stage decrees of execution of three different characters loom, are delayed with the help of a charitable jailer, and are then finally averted; those watching could not help thinking of the play as reflection of their present world.

So strong and beautiful a polemic about justice and mercy is *Measure for Measure*, that it can overcome

the poorest or most amateur performance. In fact, as the cultural media in the United States have done so much to return the barbaric spectacle of executions to public favor, so this Shakespeare play might undo that, if performed and broadcast far and wide.

In it, Shakespeare achieves a direct and completely truthful human confrontation between the “new dispensation” of Christianity, flowing from the Sermon on the Mount, and the fatalistic idea that retribution—revenge in equal measure (the “measure for measure” of the play’s title)—is justice.

“But go, and learn what this means: I desire mercy, and not sacrifice. For I have come to call sinners, not the just.” These words of Christ in the Gospel according to Matthew are the ground on which Shakespeare constructs *Measure for Measure*.

At the opening, the situation of one of the play’s protagonists, the Duke of Vienna, is like that of this nation a decade ago. Although the head of government has the affection and respect of the citizens, he has failed to stop an escalation of crime: in the case of the Duke’s Vienna, particularly crimes of license—prostitution,

public drunkenness, dueling, fighting, etc.

The Duke desires a “crackdown.” But thinking of his beneficent reputation and fearing to do it himself, he opens the play by making the kind of mistake which, in classical drama, creates tragic circumstances, and requires a true hero to avoid tragedy itself. The Duke decides suddenly to “leave” on an invented trip of state, appointing as his substitute a nobleman named Angelo, whom the Duke believes will be *rigorous* with the law, but who is actually *cruel*.

Angelo comes down with the whip on every petty madam and pimp. But he chooses to make an example of a young gentleman, Claudio, whom he sentences to immediate execution for fornication, because Claudio’s betrothed Juliet is pregnant, and they have not yet been married.

Thus the question of justice and retribution, of judicial murder, is first posed to the audience on the simplest level: can the state execute a man for a sin or crime so common and lacking in malice or forethought? Shakespeare lived in the condition to which our President and Congress would return us, in which a very wide variety of crimes were capital, carrying the penalty of death. Claudio is publicly displayed and then rushed to prison for execution the next day; his jailer, hoping Angelo will relent, says that Claudio “hath but as offended in a dream.” He warns Angelo as we warn those today who seek “expedited capital punishment” and an “end to constant delays”:

I have seen
When, after execution, judgement hath
Repented o’er his doom.

Shakespeare Quotes St. Augustine

Claudio’s sister Isabella, a convented novice, goes to Lord Angelo to plead for mercy, and Shakespeare directly



MEASURE, For Measure.

Actus primus, Scena prima.

puts into her words St. Augustine's celebrated rule of Christian correction: hate the sin, but love the sinner. Isabella says of her brother's crime,

There is a vice that I do most abhor,
And most desire should meet the blow of justice,
For which I would not plead, but that I must
I have a brother is condemned to die.
I do beseech you let it be his fault,
And not my brother.

In this famous scene, in which Angelo finally offers to pardon Claudio's fornication if Isabella will fornicate with him, Angelo first is shocked by his inability even to understand what she means:

Condemn the fault, and not the actor of it?
Why, every fault's condemned ere it be done:
Mine were the very cipher of a function
To fine the faults and let go by the actor.

In response, Angelo mouths the stoic fatalism which cloaks all attempts to base law and justice on mere procedure and "efficient" retribution. He claims that cutting off Claudio's "foul" life is what everyone needs (as we hear today, "so the others concerned can get on with their lives"):

I pity those I do not know,
Which a dismissed offense would after gall,
And do him right that, answering one foul wrong,
Lives not to act another.

But then, momentarily alone, he admits to himself that the real purpose of these procedures and rules of "efficient" retribution, is to create the mere scarecrow appearance of justice, the substance of which he does not desire:

O place, O form,
How often dost thou with thy case, thy habit,
Wrench awe from fools. . . .
Let's write "Good Angel" on the devil's horn.

Angelo tries to impose this fatalistic, procedural view of right and wrong on Isabella, as he makes her his offer:

I, now, the voice of recorded law,
Pronounce a sentence on your brother's life;
Might there not be a charity in sin
To save this brother's life?

And finally, when she threatens to expose him, he tells her that his power, his procedures, determine right and wrong, true and false:

As for you,
Say what you can, my false o'erweighs your true.

This is *administrative fascism* wielding the power and threat of execution. But it must be said that the National Shakespeare Theater's conscious attempt to use as its model the movie *Cabaret*, with its pornographic portrayal of nightclub debauchery in existentialist Weimar Germany, for portraying Shakespeare's attack on the core idea of fascist law, is a dramatic disaster. The effect is that the license of a sexual underworld is seen as the alternative to Angelo's repression; the company went so far as to add characters—female prostitutes—who are nowhere to be found in Shakespeare's play (so that Claudio's friend Lucio and others can writhe around on the floor with them), and to take other arrogant liberties with the text.

The real core of the performance's disorientation is that the company does not understand the Augustinian idea of mercy stated by Isabella; in fact, they show no understanding of the *heroic* character of Isabella at all. She is presented merely as an oppressed woman, and the characterization of the other major figures suffers like distortion. As can be imagined, the resulting production, particularly as Shakespearian acting, is very poor.

But a Convicted Murderer?

As the jailer and the disguised Duke try to stop the execution, Shakespeare raises his attack on judicial murder to another plane. The Duke—now disguised as a friar—and Isabella, trick Angelo into meeting his own rejected and lovesick former fiancée for a midnight tryst, Angelo thinking he has possessed Isabella instead. Angelo then demands Claudio's head anyway. The "friar" suggests that the jailer instead behead a convicted, hardened murderer—Barnadine—held nine years in the same prison, and send Barnadine's head to Angelo instead.

Here the audience experiences a strong tension and apprehension: the Duke, who we thought beneficent, is about to treat another man's life with the same callous expediency shown by Angelo, in order to save Claudio's life. But this is a convicted murderer, unrepentant and drunk in his cell, alive after nine years only because "his friends still wrought reprieves for him." The question of the death penalty is now confronted on a sharper level: may the friar—who is really the Duke, the state's true authority—now cause his immediate execution?

In a blunt, comic confrontation which is so abrupt that it raises tension as well as laughter, Barnadine staggers out and declares himself drunk and unprepared to die today, and lurches back to his cell. He is a parodied

extreme of the mentally retarded, those who we see being sent to the ultimate punishment without even understanding that it is coming. The “friar” admits to himself it’s wrong:

A creature unprepared, unmeet for death,
And to transport him in the mind he is,
Were damnable.

When the jailer bravely conceives of an alternative and takes responsibility for it, the Duke thanks heaven for providing a way out from killing a man for expedience, even in pursuit of justice for another.

The Duke’s poetry directly recalls Christ’s words in the Gospel according to St. Matthew, “For I say unto you that unless your justice exceeds that of the Scribes and Pharisees, you shall not enter the kingdom of heaven . . .” Shakespeare has the Duke’s speech break into a shorter poetic line, so that the audience knows he is speaking directly to them:

He who the sword of heaven will bear
Should be as holy as severe;
Pattern in himself to know,
Grace to stand, and virtue go;
More nor less to others paying,
Than by self-offenses weighing.

A Third Level

Now Shakespeare’s fight for the spectator’s idea of justice and mercy reaches its third and sharpest level. Isabella, and Angelo’s former fiancée Mariana, who has become her friend, believe that Claudio has been beheaded; yet they will try with the “friar’s” help both to expose Angelo, and to make him marry Mariana—a seemingly impossible undertaking.

The Duke now choosing to reappear as himself, the two women tell him the truth; yet because the Duke is trying to draw out Angelo, he appears to reject their exposé and orders them to prison. In the entire play, the Duke’s sudden and prolonged disappearance acts as a metaphor for the forcing of the heroine Isabella, and the others, into the necessity to act on behalf of human life and the rights of man. Their government has vanished; usurping irrational tyranny appears in its place; the sanctity of life is left in their hands. The Duke’s long delay, the uncertainty to the last as to whether he will restore justice, force the spectators to think what Isabella is thinking: that she, her brother, and her friends may all die before this evil is overturned and truth restored.

Ordered to prison, Isabella speaks to heaven and to future generations:

Then, O you blessed ministers above,
Keep me in patience, and with ripened time
Unfold the evil which is here wrapped up
In countenance. Heaven shield your grace from woe.

When Angelo is finally exposed before the Duke for all his cruel corruption of power, he, in his humiliation, asks to die:

No longer session hold upon my shame,
But let my trial be mine own confession.
Immediate sentence, then and sequent death
Is all the grace I beg.

One thinks then of those few on death rows today who actually *ask* to be executed on live television, sweeping themselves into the public spectacle of judicial revenge. Now Shakespeare has put the question of justice at the highest level: shall a cruel man, who has killed one person and degraded another, and who confesses and asks the penalty of death, be executed? (The spectators, who have the same “evidence” the Duke has, must also be thinking that, in fact, Angelo has not murdered Claudio or raped Isabella, although he thinks he has.)

The Duke decrees Angelo’s death:

‘An Angelo for Claudio, death for death!’
Haste still pays haste, and leisure answers leisure,
Like doth quit like, and Measure still for Measure . . .
We do condemn thee to the very block
Where Claudio stooped to death, and with like haste.

But then, when Mariana begs his mercy, the Duke leaves the decision to Isabella, who still believes her brother dead. She, the victim, does not seek to answer her grief with vengeance, as we are now told victims must do—a “solution” which must only fester and make grief worse as years pass. Instead, Isabella shows Angelo that she still hates the sin, but loves the sinner, and that love of God and sacred human life guide her. She tells the Duke,

Look, if it please you, on this man condemned,
As if my brother lived . . .
Let him not die.

Because of Isabella’s justice and mercy, the Duke may, at the play’s end, dispense appropriate judgments which force the various sinners to redeem themselves.

So, Shakespeare hears the only commandment which St. Matthew reports Jesus to have spoken twice, in just the same words: “But go, and learn what this means. I desire mercy, and not sacrifice.”

—Paul B. Gallagher

Society and Economy

(1671)

Gottfried Wilhelm Leibniz

IN THIS SHORT WORK *and in another, longer essay written in the same year—a translation of which appeared in the last issue of Fidelio*—Gottfried Wilhelm Leibniz developed a scientific conception of Christian economy. In this particular essay, Leibniz argues that the “entire purpose of Society is to release the artisan from his misery.” To accomplish this, Leibniz proposes that society play a positive role in fostering a harmony of interest among merchants and artisans through the development of national industry.

In the deregulated, free-market system of monopoly capital, in which artisans are kept in continual poverty and toil, they are relatively unproductive. However, in a society which considers artisanship “one of the worthiest occupations”—where “the highest rule shall be to foster love” and “the moral virtues shall be promulgated”—the work force will be more productive, to the benefit of society as a whole.

Moreover, a community of principle would exist among all countries in which such a conception were implemented, such that “no country . . . will be favored over the other; rather each shall be made to flourish in those areas in which God and Nature have allowed it to excel.”

These are the ideas which were later adopted by the American System of Economy, in opposition to the British System of Free Trade. It is for this reason that Lyndon H. LaRouche, Jr. has referred to Leibniz as “the first economic scientist, in the strict modern sense of science.”

Monopoly is avoided, since this Society always desires to give commodities at their fair price, or even more cheaply in many cases, by causing manufactured goods to be produced locally rather than having them imported. It will especially preclude the formation of any monopoly of merchants or a cartel of artisans, along with any excessive accumulation of wealth by the merchants or excessive poverty of the artisans—which is particularly the case in Holland, where the majority of merchants are riding high, whereas the artisans are kept in continual poverty and toil. This is harmful to the republic, since even Aristotle maintains that artisanship ought to be one of the worthiest occupations. *Nam Mercatus transfert tantum, Manufactura gignit.* [For trade can carry only as much as the factories produce.] And why, indeed, should so many people be poor and miserable for the benefit of such a small handful? After all, is not the entire purpose of Society to release the artisan from his misery? The farmer is not in need, since he is sure

of his bread, and the merchant has more than enough. The remaining people are either destitute or government servants. Society can likewise satisfy all the farmer’s own needs, providing it always buys from him at a reliably fair price, whether that be cheap or dear. We can thereby ensure for all eternity against natural food shortages, since Society can then have what amounts to a general grain reserve.

Through establishment of such a Society, we eliminate a deep-seated drawback within many republics, which consists in allowing each and all to sustain themselves as they please, allowing one individual to become rich at the expense of a hundred others, or allowing him to collapse, dragging down with him the hundreds who have put themselves under his care. An individual may or may not ruin his own family, and then may or may not run through his own and others’ funds.

Objection: Should money be invested in other countries? By no means. Each country shall, on the contrary,

supply itself with those necessary commodities and manufactured goods which previously came from abroad, so that it will not have to procure from others what it can have for itself; each country shall be shown how properly to use its own domestic resources. In a country which has sufficient wool, manufacturing shall be established for the preparation of cloth; a country with an abundance of flax shall occupy its populace with the production of clothing; and so forth. And thus no country among those which permit Society the proper degree of freedom, will be favored over the other; rather, each shall be made to flourish in those areas in which God and Nature have allowed it to excel.

Manufacturing, therefore, shall always take place at the commodities' point of origin; whereas commerce, in accordance with its nature, shall be located at the rivers and oceans—an arrangement which only becomes disrupted (manufacturing being placed near commercial centers, far from its raw materials) when the necessary Society and cohesiveness is lacking in many locations, especially where there are no republics.

A great drawback of many republics and countries is that many places have more scholars (not to mention idle people) than they have artisans. But this Society has something for everyone to do, and it needs its scholars for continual conferences and joyous discoveries. This Society can have others adopt the profession of assuming responsibility for providing for unfortunates—e.g., the confinement of criminals, which is of great benefit to the republic.

One might object that artisans today work out of necessity; if all their needs were satisfied, then they would do no work at all. I, however, maintain the contrary, that they would be glad to do more than they now do out of necessity. For, first of all, if a man is unsure of his sustenance, he has neither the heart nor the spirit for anything; will only produce as much as he expects to sell (which is not very much given his few customers); concerns himself with trivialities; and does not have the heart to undertake anything new and important. He thus earns little, must often drink to excess merely in order to dull his own sense of desperation and drown his sorrows, and is tormented by the malice of his journeymen. But it will be different there: Each will be glad to work, because he knows what he has to do. Never will he be involuntarily idle, as he is now, since no one will work for himself, but rather jointly; and if one has too much and the other not enough, then one will give to the other.

On the other hand, no artisan will be suddenly obliged—as he sometimes is now—to torture himself and his men half to death with excessive work, since the

amount of work will always remain more or less the same. The journeymen will work together, joyously vying with one another in the public factories, the masters themselves taking care of the work that requires more understanding. No master need be annoyed that an intelligent journeyman might desire to become a master himself, for how does this harm the master? Journeymen's room, board, and necessities will be provided free to all workers. No master will need to worry about how he is to provide for his children or marry them off respectably. The education of children will be taken care of by Society; parents shall be relieved of the task of educating their own children: All children, while they are small, shall be rigorously brought up by women in public facilities. And scrupulous attention will be paid that they do not become overcrowded, are kept clean, and that no diseases arise. How could anyone live more happily than that? Artisans will work together happily in the company's large rooms, singing and conversing, except for those whose work requires more concentration.

Most of the work will be done in the morning. Pains will be taken to provide for pleasures other than drinking—for example, discussions of their craft and the telling of all sorts of funny stories, whereby they must be provided with something to quench their thirst, such as *acida*. There is no greater pleasure for a thoughtful man, or indeed for any man once he becomes accustomed, than being in a company where pleasant and useful things are being discussed; and thus every group, including the artisans, should have someone to write down any useful remarks that may be made. But the Society's highest rule shall be to foster true love and trustfulness among its members, and not to express anything irritating, scornful, or insulting to others. Indeed, even rulers should eschew all insults unless nothing else is effective, since such behavior precludes the establishment of trust. No man shall be derided for a mistake, even if it be a serious one; rather, he should be gently admonished in a brotherly way, and at the same time, immediately and appropriately punished. Punishment shall consist in increased and heavier work, such as making a master work like a journeyman, or a journeyman like an apprentice.

The moral virtues shall be promulgated to their utmost and, as far as possible, according to the principle *Octavii Pisani per gradus* [of Octavius Pisa, by steps]. If it is observed that two people cannot settle their own dispute, they shall be separated. Lies will also be punished. *Sed haec non omnia statim initio publicanda*. [Let this, even though uncompleted, be published as a beginning.]

—translated by John Chambliss

Two Early Song Settings of Schiller's 'The Maiden's Lament'

The most famous of Franz Schubert's settings of the German poet Friedrich Schiller is his second version of "*Des Mädchens Klage*," ("The Maiden's Lament"). This four stanza poem was first published in 1798. The first two stanzas, slightly altered, are sung by the "beautiful soul" Thekla in the play *The Piccolomini*, first performed in 1799.

Schubert's song in C-minor, accompanied by chordal triplets over a

magnificently constructed bass-line, was composed in 1815, when he was only seventeen. It is in print in Band I of the Peters *Schubert Album*, and in the Dover *59 Favorite Songs* by Schubert.

Of all Schiller's poems, this was most often made into a song. There are two other settings by Schubert, one by Mendelssohn, and two by the Russian composer Glinka.

Mendelssohn's posthumous ver-

sion is a through-composed setting of only the first two stanzas, with a virtuoso piano accompaniment. Schubert's first try, around 1811-12, is also through-composed and highly declamatory with a high-C at the end! His third setting, strophic and in C-minor like the second, composed in 1816, seems to call for a dramatic soprano.

The two settings here were composed within a decade of the poem,

Des Mädchens Klage

Der Eichwald brauset, die Wolken ziehn,
Das Mägdlein sitzt an Ufers Grün,
Es bricht sich die Welle mit Macht, mit Macht,
Und sie seufzt hinaus in die finstre Nacht,
Das Auge von Weinen getrübet.

"Das Herz ist gestorben, die Welt ist leer,
Und weiter gibt sie dem Wunsche nichts mehr.
Du Heilige, rufe dein Kind zurück,
Ich habe genossen das irdische Glück,
Ich habe gelebt und geliebet!"

Es rinnet der Tränen vergeblicher Lauf,
Die Klage, sie wecket die Toten nicht auf;
Doch nenne, was tröstet und heilet die Brust
Nach der süßen Liebe verschwundener Lust,
Ich, die Himmlische, will's nicht versagen.

"Laß rinnen der Tränen vergeblichen Lauf,
Es wecke die Klage den Toten nicht auf!
Das süßeste Glück für die trauernde Brust,
Nach der schönen Liebe verschwundener Lust,
Sind der Liebe Schmerzen und Klagen."

The Maiden's Lament

The clouds are flitting, the oakwood roars,
The maid is sitting upon green shores,
The waves they are breaking with might, with might,
And she sighs out into the sombre night,
Her eyes are from crying grown turbid.

"The heart is now deadened, devoid's the world,
And ne'er again be my wishes fulfilled.
Thou holy one, summon thy child back home,
For I have the fortune terrestrial known,
For I have full lived and have loved!"

The tears running down do in vain their course take,
Lamenting, 'twill never the dead one awake;
Yet name it, what comforts and healeth the breast,
After sweetest love all its pleasure has lost,
I, the heavenly, won't be denying.

"Let run down the teardrops in vain do they break,
The dead one lamenting 'twill never awake!
The sweetest of balms for the sorrowful breast,
After beautiful love all its pleasure has lost,
Are but love's lamenting and sighing."

—translation by Marianna Wertz

both in E_b-major. They have not been available in popular editions since the early 1800's. Among other things, the angular "north German" style of the first contrasts to the more Italianate "south German" approach of the second.

This poem is one of Schiller's most succinct lyric expressions of his idea of the sublime: the simultaneous experience of intense happiness and

intense sadness, which points negatively to the fact that there is a higher, supersensuous principle in man, his capacity for freedom. Schiller identifies this with man's capacity for love, even if acting out of love conflicts with the natural instinct toward self-preservation.

Schiller paints a picture of a girl sitting in a stormy landscape, grieving for her dead lover. Her anguish

is answered by a heavenly woman (probably the Virgin Mary), who tells her that after love's pleasures, the greatest balm is love's lamenting and pain. The two contrasting emotions are mirrored by nature, as the roaring oakwood, and the mighty breaking waves, are set off against the maiden's sighs.

Berlin's J.F. Reichardt, Goethe's favorite composer, set many Schiller

Des Mädchens Klage

Etwas langsam, doch lebhaft deklamiert. Die zweite und letzte Strophe leiser als die anderen.

Johann Friedrich Reichardt

Der Eich - wald brauset, die Wol - ken ziehn, das Mägd - lein sit - zet an

U - fers Grün, es bricht sich die Wel - le mit Macht, mit Macht, und sie seuf - zet hin -

aus in die fin - stre Nacht, das Au - ge von Wei - nen ge - trü - bet.

poems, both as *lieder* and in anthem-like choral versions. His “*Des Mädchens Klage*,” published in 1811, exemplifies what Lyndon LaRouche refers to as Reichardt’s “simplistic, but rigorous scheme” [SEE page 42]. Choosing the four-stanza version, he sets it strophically, i.e., each verse has the same notes for the voice and the same accompaniment. But he specifies in his instructions: “Rather slow, but vividly declaimed. The second and last verses softer than the others.”

Note that he writes out the arpeggiated accompaniment in the first measure only, and after that only puts the chords, with the instruction “*segue*,” which tells the pianist to continue breaking the chords in the same fashion. This is just a step away from the old thorough-bass tradition, in which the keyboard player was only given a bass-line and, usually, a number indicating the harmonies to be filled in (“figured bass”) in a pattern appropriate to the taste of the piece and the voice being accompanied.

Reichardt builds up the drama by a series of descending lines, starting with the phrase that drops from the soprano’s second register on G to her low register. By the end of the first couplet, the foreboding quality has been enhanced by a shift into C-minor, the relative key, on the word *grün*. As Schubert did later, Reichardt raises the song to its strongest dynamic as the waves break “*mit Macht, mit Macht*” on the shore, and then, also as Schubert would do, he

puts the maiden’s “sigh into the night” on the highest but quietest notes of the piece, at the top of the soprano’s second register. Reichardt, whose songs for sopranos otherwise tend to be very high, may have chosen the first and second registers here to convey the tragic mood.

Johann Rudolph Zumsteeg is one of the most engaging minor figures in classical German music. A schoolmate of Schiller in the Karlschule in Stuttgart, he remained very loyal to his friend, composing many musical settings of songs in Schiller’s plays. Zumsteeg was the first to insist on staging Mozart’s operas in Stuttgart, and he wrote his own opera based on Shakespeare’s *The Tempest*. He died penniless in 1802, three years before Schiller. His Schiller lyrics and ballads, published at his own expense, strongly influenced the young Schubert, who often used Zumsteeg as the starting point for his interpretations.

As an opera composer, Zumsteeg used the two-stanza version of the “Lament” from the play, and attempted a through-composed (*durchcomponiert*) version which would change as the narrative unfolded.

Thekla is the daughter of the superstitious General Wallenstein, the central character in the *Wallenstein Trilogy*, which Schiller wrote about the Thirty Years War (1618-48), at a time when Europe was in the throes of the Napoleonic Wars. She sings at a turning point in the tragedy, foreshadowing the terrible death of her beloved Max Piccolomini, the other “beautiful soul” of the play. Max and Thekla were fictional characters invented by Schiller to complement the flawed historical personages. Through their love they triumph over death, and thus establish for the audience, a negentropic alternative in an other-

wise entropic world.

Zumsteeg provides a piano introduction like a miniature overture before the miniature tragedy begins: the melody, in the bass line, descends in a three-note phrase. After this is elaborated, the curtain rises—in G-major! The voice of Thekla enters, the tempo quickens to “moderately slow,” and she sings entirely in her second register, a line that rises from G to E \flat and then falls back to G in the first couplet. The second couplet reaches up into a third-register high-G as the waves break. Then the maiden “sings” (“*singt*”—Schiller altered the verb, which had been “sighs” in the poem) very softly, in her second register into the dark night.

For the second strophe, the song slows down, the triplet arpeggios in the piano turn into simple chords for the declaimed line: “The heart is now deadened, devoid’s the world.” After this, Zumsteeg makes his way back to a variant on the first verse, setting each line separately for theatrical effect. Thekla pleads, “Thou Holy One, summon thy child back home.” The last line, “I have fortune terrestrial known, for I have full lived and have loved,” Zumsteeg set in an almost cheery, operatically ornamented way that brings the curtain down with an echoing conclusion from the keyboard. In the trilogy, after Max’s death, Thekla “disappears,” we never know whether into physical death or into a cloister.

It is striking that Schubert, who may have known both Reichardt’s and Zumsteeg’s versions, chose the relative minor of their E \flat -major, C-minor. While his song has some things in common with both earlier attempts, it is above all the echo of Beethoven’s musical interpretation of the Sublime that lifts Schubert’s to the level of genius.

—Nora Hamerman

The study of classical settings of poetry is perhaps the most efficient way to learn the principles of poetic composition. Selections offered here are either previously unpublished, or no longer available in print.

Thekla

Johann Rudolf Zumsteeg

Langsam.

The first system of the musical score for 'Thekla' consists of a vocal line and a piano accompaniment. The vocal line is in 3/4 time and begins with a whole rest. The piano accompaniment starts with a piano (*p*) dynamic, followed by a crescendo (*cresc.*) and a mezzo-forte (*mf*) section. The piano part features a steady eighth-note accompaniment in the right hand and a more active bass line in the left hand.

The second system continues the musical score. The vocal line features a series of eighth-note passages, including a triplet of eighth notes. The piano accompaniment includes dynamic markings of *f* (forte) and *p* (piano). The piano part continues with its characteristic eighth-note accompaniment and active bass line.

Mässig langsam.

The third system begins with the vocal line in 2/4 time, marked mezzo-forte (*mf*). The lyrics are: "Der Eich-wald brau-set, die Wol-ken ziehn, das". The piano accompaniment features a piano (*p*) dynamic and includes triplet markings in the right hand. The tempo is marked "Mässig langsam".

The fourth system continues the vocal line with the lyrics: "Mägd-lein wan-delt an U--fers Grün, es bricht sich die Wel-le mit Macht, mit". The piano accompaniment features a forte (*f*) dynamic and continues with its eighth-note accompaniment. The tempo remains "Mässig langsam".

p

Macht, und sie singt hin - aus in die fin - stre Nacht, das Au - ge von

p

Langsamer.

p *all-*

We - nen ge - trü - - bet. Das Herz ist ge - stor - ben, die Welt ist leer, und

all-

p

mählich wieder in das erste Tempo zurückgehen!

f *p*

wei - ter gibt sie dem Wun - sche nichts mehr. Du Hei - - li - ge, ru - fe dein

mählich wieder in das erste Tempo zurückgehen!

f *p*

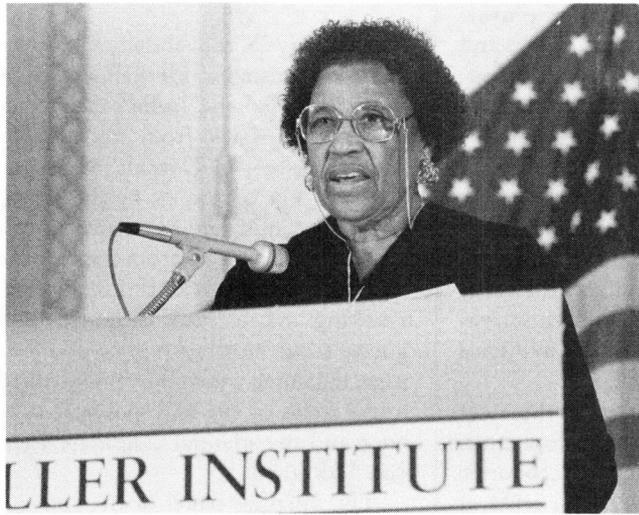
mf *p*

Kind zu - rück, ich ha - be ge - nos - sen das ir - di - sche Glück, ich ha - be ge -

mf *p*

lebt und ge - lie - - bet.

sf *p*



Call for worldwide day of prayer: Amelia Boynton Robinson (left), Helga Zepp-LaRouche.

Judge Denies LaRouche New Trial; World Day of Prayer for LaRouche Freedom

Despite overwhelming new evidence that the U.S. government suppressed exculpatory evidence in order to obtain the politically motivated conviction and imprisonment of Lyndon H. LaRouche, Jr., and in the face of growing international opposition to this violation of human rights by the U.S. government, Federal Judge Albert V. Bryan issued an arrogant and brutal decision on May 15 denying the motion for a new trial filed by LaRouche and two of his co-defendants.

Mr. LaRouche issued the following statement upon hearing of the decision:

“An appropriate comment in response to the denial of the 2255 motion in my case by Federal District Judge Albert V. Bryan is to cite Harvard professor Alan Dershowitz in *Der Spiegel*, where he compares the Supreme Court under William Rehnquist to Nazi judges of the Third Reich.”

Bryan’s 18-page decision characterizes the 2255 motion as “a reiteration

of assertions voiced at the trial, namely, that there was a ‘conspiracy’ to silence the political movement of defendant LaRouche and his associates; that the goal of the conspiracy, insofar as the trial in this court was concerned, was to destroy the movement through criminal convictions of the defendants; that it involved the destruction of the movement’s financial ability to repay loans which were the subject of the indictment. . . . The conspiracy in this scenario is said to have begun as early as 1982 and included among the conspirators the former Secretary of State, Henry Kissinger; the Director of the FBI; the President’s Foreign Intelligence Advisory Board; attorneys in the Department of Justice, U.S. Attorney’s office; officials of the CIA, IRS, and the FEC; agents and agencies of Loudoun County, Virginia, and other counties and states, including Virginia, Massachusetts, and New York; the Anti-Defamation League of B’nai B’rith; and the National Broadcasting Company and other media.

“Unable to prevail on this argument at trial, the defendants claim that new evidence developed since trial reveals a massive cover-up by the government and others. . . . As a consequence of this conspiracy, the defendants say they were convicted.”

Bryan puts in a footnote, “The notion that the movement’s significance would prompt such retaliation was characterized by the court at sentencing as ‘arrant nonsense.’ The term when transcribed appeared as ‘errant nonsense.’ Either word will do.”

Bryan then spends fifteen pages adopting the Government’s position on the evidence presented. He then concludes:

“If everything that the defendants now say should have been revealed at or before trial had been revealed, there is not the slightest possibility, much less the probability, that the result would have been different. This was not a close case. In their ranging attack on governmental behavior, characterized by seeing in a multitude of public and non-public figures acts of persecu-

tion, the defendants pay scant attention to the real issues in the case. . . .

"The evidence that these defendants never intended to repay the investors was overwhelming. To say that the government, or anyone else, caused the defendants to be convicted because it was motivated by a desire to destroy LaRouche's movement is to ignore the evidence in the case."

He concludes, "Nor will the court permit further discovery or an evidentiary hearing. After three years in which the defendants have had access to transcripts of numerous intervening state court hearings, had numerous investigators pursuing the histories of jurors and witnesses, and interrogated everyone remotely connected with the case, they have come up short. Further proceedings in this court are unnecessary."

World Day of Prayer

In response to this development Helga Zepp-LaRouche, LaRouche's wife and the founder of the Schiller Institute, and Amelia Boynton Robinson, civil

rights activist and recipient of the Martin Luther King, Jr. Freedom Award in 1990, issued the following call for a worldwide ecumenical day of prayer:

"The world is heading more and more towards an apocalyptic crisis, with conflict and war flaring up in many areas of the world. A horrible war is being waged in the former country of Yugoslavia, while terrible danger is looming in the Transcaucasus. Poverty, disease and starvation are taking an incredible toll, with twenty million people threatened with starvation in the immediate future in Africa alone.

"Also in the United States there are extremely worrisome developments. Because of a total lack of economic development, an accelerating crisis of the cities is emerging, of which the events in Los Angeles may only have been the foretaste. Judicial barbarism is reigning, as illustrated by the increasing number of virtually public executions, a travesty which cannot happen in a civilized nation.

"There is one man, who has devoted his entire life's work to overcoming the source of all of these problems, by fighting for a just New World Economic Order based on Christian principles in economics. Such a just economic order would allow the development of all human beings living on this planet, all of whom are created in the image of God with inalienable human rights.

"This man, Lyndon LaRouche, has spent the last three and a half years as a political prisoner in jail in the United States, despite the fact that thousands of legal experts and parliamentarians from around the world, have expressed their conviction that he is innocent. Now the court has refused to allow a new trial to present an overwhelming mass of new evidence. So all legal routes are exhausted.

"We therefore call for a worldwide day of prayer between the 5th and 7th of June, when churches, synagogues, mosques, and temples should designate one minute of silent prayer for the freedom of Lyndon LaRouche and ask all people of good will to pray to God to intervene."

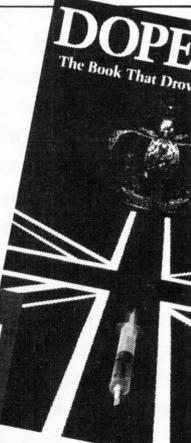
LaRouche Allies

On May 28, near the site where the conquistador Hernando Cortés first assembled the Indian army that won Mexico back from the hideous Aztec empire—in Tlaxcala, Mexico—a convention sponsored by the Ibero-American Solidarity Movement (MSI) drew together forces from most of the leading Spanish- and Portuguese-speaking nations of America and guests from North America and Europe, to launch a new movement allied to the ideas of the U.S. political prisoner and presidential candidate Lyndon LaRouche.

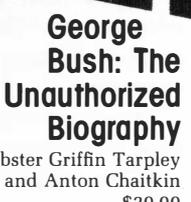
The opening panel of the convention must have sent shock waves around the world, as imprisoned leaders of the continent's resistance to the fascist austerity policies of the Anglo-American financial interests, and to their all-out assault on national sovereignty, expressed their support to the gathering. Speaking from their respective prison cells by written and recorded messages were **Lyndon LaRouche**; **Col. Mohamed Ali Seineldín** of Argentina, the hero of the Malvinas War who is serving a life sentence for having led a military action in December 1990 against the Menem government's betrayal of the nation; and prisoner of war **Gen. Manuel Antonio Noriega**, who was abducted, tried, and convicted by the U.S. government in a monstrous military invasion of Panama which trampled on international as well as U.S. constitutional law. In addition, the imprisoned **Commander Hugo Chávez Frías** of Venezuela, leader of the February military uprising against the corrupt "democracy" of President Carlos Andrés Pérez, was represented by his brother, Adán Chávez, who attended the convention, brought special greetings, and read the program of the insurgent patriots.

Warm greetings and a blessing were also given at the opening of the convention from the Catholic bishop of Anápolis, Brazil, Dom Manuel Pestana Filho.

Dope, Inc.
The Book that Drove
Henry Kissinger
Crazy
by the editors of EIR
\$16.00



GEORGE BUSH
THE UNAUTHORIZED
BIOGRAPHY
Webster Griffin Tarpley
and Anton Chaitkin

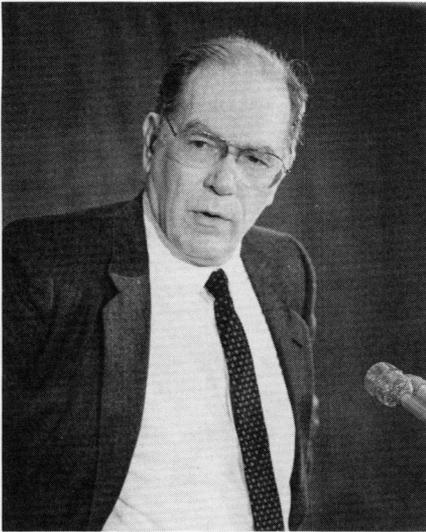


**George Bush: The
Unauthorized
Biography**
Webster Griffin Tarpley
and Anton Chaitkin
\$20.00

To Order
**BEN FRANKLIN
BOOKSELLERS**
107 S. King St., Leesburg, VA 22075
ph.: (800) 453-4108 ■ fax: (703) 777-8287

Shipping: ● mail ● UPS
\$1.75 first book \$3.00 first book
.75 ea add'l book 1.00 ea add'l book

Launch Continental Movement in Ibero-America



EIRNS/Stuart Lewis



EIRNS



EIRNS/Carlos Martínez

Convention messages from prison: Lyndon H. LaRouche, Jr. (left), Col. Mohamed Ali Seineldín (center), Gen. Manuel Noriega (right).

One of the three resolutions adopted called for the release of LaRouche and the other political prisoners, in order to defeat the strategic threat to the continent. Another resolution denounced plans advanced by the United States to raise a “Pan-American” multilateral military force to invade nations of the continent and impose so-called democracies willing to carry out Washington’s orders.

As Fernando Quijano, editor of *Benengeli*, a magazine of culture and statecraft associated with LaRouche’s ideas, explained in his keynote address to the convention at “La Trinidad” convention center, the Ibero-American Solidarity Movement must be continent-wide (hence *Ibero-American*); a *movement* rather than a political party, since parties were developed as a liberal British instrument *against* national sovereignty; and for *solidarity* because that concept rests upon the ideas in St. Paul’s two Letters to the Corinthians, which inspired the evangelization of the Americas starting five hundred years ago.

That evangelization was carried forward by the cooperation of soldier, explorer, and missionary—an alliance of sword, cross, and sextant which today’s oligarchs seek to destroy, by dis-

arming the continent’s military institutions, assaulting the Catholic matrix of its morality, and undermining the identity between reason and faith which inspired the voyages of discovery and the great city-building projects that ensued from them.

The convention was held under the banner, “On the Quincentenary of the Evangelization of America, Down



EIRNS/Javier Almaro

Adán Chávez presents greetings from his brother, imprisoned Commander Hugo Chávez Frías.

with the Black Legend!” referring by “Black Legend” to the British-authored lie that the Hispanic troops and missionaries carried out “genocide” against the indigenous Americans and that Catholic culture rather than neo-colonialism is the cause of the current genocidal level of Ibero-American poverty. The Black Legend is spread today by precisely those Malthusian, neo-colonialist forces, which, by imposing austerity in order to collect debt, and by protecting and nurturing narcoterrorism, are conspiring to impose a true genocide on Ibero-America. Its proponents, including official Washington, have become *de facto* apologists for the bloody Shining Path terrorists, who in the name of “indigenism” have declared total war against everything Western or Christian in Ibero-America today; and who were identified by conference speakers as the modern equivalent of the genocidalist Aztecs.

During the four days of the public sessions, May 17-21, over two hundred participants from a dozen countries heard and debated presentations on:

- the current world strategic panorama, highlighted by taped messages from Lyndon LaRouche and his wife, German political leader Helga Zepp-

LaRouche, and by a chilling report on the advance toward power of the unspeakably savage Shining Path band in Peru;

- the background of the evangelization of the New World in the Italian Renaissance; the Portuguese navigators; and the science and politics behind Columbus's successful crossing of the Atlantic in 1492; as well as the special contributions of Spain and the art, architecture, and music of Spanish dominions in the New World;

- a determined battle against the malignant lies of the Black Legend; and

- the science of Christian economy, developing especially the ideas of Lyndon LaRouche in his recent book, and amplifying these with discussion of the epistemology of science, music, the history of mercantilism in Ibero-America, and such key programs as LaRouche's project to colonize Mars and his "Operation Juárez" proposal to bury the International Monetary Fund and build a just, New World Economic Order.

At last!

A book about CFCs and ozone that presents scientific evidence instead of hysteria.

THE HOLES IN THE OZONE SCARE

The Scientific Evidence
That the Sky Isn't Falling

by Rogelio A. Maduro and
Ralf Schauerhammer

\$15 357 pages illustrated, with
index.

Send check or money order (U.S.
currency only) to

21ST CENTURY
Dept. F, P.O. Box 16285,
Washington, D.C. 20041.

Bookstores, write for prices on bulk orders.

UNCED Earth Summit Meets Opposition

The U.N. Conference on Environment and Development, dubbed the Eco-92 "Earth Summit," which took place June 1-12 in Rio de Janeiro, Brazil, brought into focus the battle between the forces of Western Christian civilization and those who are attempting to institutionalize an anti-human, extreme environmentalist New World Order. Fundamental to the issues raised, is whether man was created in the image of the living God (*imago viva Dei*,) and endowed with the responsibility to exercise dominion over the Earth and all other species, as proclaimed in the Book of Genesis; or, if we are only another species, whose multiplication and domination of the Earth is threatening the "biosphere" with extinction.

Crafted by the world's leading Malthusians, including Britain's Prince Philip, the Club of Rome, Jacques Cousteau, and the World Wide Fund For Nature, the conference was intended to bludgeon the developing-sector nations into adopting a policy of forced population reduction, while the advanced sector is made to slash its use of high technology for energy production and industry.

The summit did not fully succeed in its intent, however, because of the strong resistance of many developing-nation leaders, who smell neo-colonialism as the real motive of the so-called environmentalists; combined with the Vatican's staunch opposition to any measures regarding population control; and an aggressive organizing presence by pro-science advocates, including associates and co-thinkers of American presidential candidate Lyndon LaRouche.

Strong Resistance

The strongest intervention against the anti-scientific atmosphere dominating the conference was made June 6, at a press conference called by *21st Century*



Gov. Dixie Lee Ray

Science & Technology magazine, whose editors are co-thinkers of Lyndon LaRouche. Here, Dr. Dixie Lee Ray, former governor of Washington State, announced the publication of the newly released *The Holes in the Ozone Scare* [SEE review this issue]. Dr. Ray, who is also the former head of the U.S. Atomic Energy Commission and a marine biologist, presented the scientific evidence that contradicts the scare scenarios retailed by the world media, focusing on the natural causes of the ozone cycle in the atmosphere, and the real role of carbon dioxide in the so-called greenhouse effect. Her boldness in attacking these environmentalist shibboleths led the daily *Journal do Brasil* to label her "the big bad wolf" of Eco-92.

In a subsequent interview published in *O Estado de São Paulo*, Dr. Ray said, "We have to truly ask ourselves, what prevented development from occurring in the South?" Her answer: economics, and science and technology. The economics "involves the International Monetary Fund and development projects that were in fact controlled and directed by the interna-

EIRNS/Stuart Lewis

tional organizations." As to science, "what makes a country economically developed is industrialization and energy When I speak of energy, I mean electricity Nuclear energy is safe, economical, and the best way to produce electricity that we know of."

At her press conference, Dr. Ray reported that many scientists agree with her opposition to the Summit, as witnessed by the fact that 264 leading world scientists had issued a call, published June 1 in the Wall Street Journal, warning of the "emergence of an irrational ideology which . . . impedes economic and social development." The scientists' call asserts that "humanity has always progressed by increasingly harnessing Nature to its needs The greatest evils which stalk our Earth are ignorance and oppression."

Vatican vs. Population Control

The hardline opposition to population control measures exercised by the Vatican at the conference virtually nullified all attempts to ram those measures through. In its position paper for the summit, the Vatican denounced population control proposals as substitutes "for justice and development in the developing countries." Population growth is seldom the primary cause of environmental problems, the paper stated, and "economic aid for the advancement of peoples should not be conditioned on acceptance of programs of contraception, sterilization, or abortion." Such policies are a "violation of human rights" and "promote racist tendencies."

The document also made the following points: 1) War is an increasingly serious cause of environmental damage; 2) States have an obligation to ensure an equitable transfer of appropriate technology to developing nations; and 3) The goods of the earth are for the benefit of all, and all peoples have a right to fundamental access to those goods.

Kissinger and NSSM 200

The impact of the exposé by associates of Lyndon LaRouche of the program

of forced sterilization of Brazilian women—carried out under the aegis of Henry Kissinger's infamous National Security Study Memorandum 200—was reflected in a June 7 Washington Post wire from the summit.

"Don't say 'population control' around here," the article began. "'Control' bespeaks coercion, forced sterilization, and supposed First World fears of a dark-skinned planet. Don't even say 'population' too much—it's the word that never got credentials at the official Earth Summit."

Noting a leaflet issued by the Cam-

paign Against Population Control, the article stated, in part, "A throng jams into another tent to hear more horror stories about the dangers of population control. A Brazilian senator says such programs have resulted in the involuntary sterilization of Brazilian women. The sponsor of this panel discussion, the State Council of Women's Rights, distributes a flyer arguing that the sterilizations emerge from a conspiracy by Henry Kissinger and the National Security Council to limit the birthrate in the Third World 'so as to not [lead to the] degenerat[ion of] the Anglo-Saxon race.'"

European Parliament Denounces U.S. Executions

On June 11, the European Parliament in Strasbourg passed a resolution denouncing the "increasing number of executions over the recent period" in the U.S. The resolution expressed concern at the lack of leniency shown to persons who have committed crimes during adolescence or are mentally impaired, and shock at the May 21 execution in Virginia of Roger Coleman, "whose guilt has been put into serious doubt by many leading Ameri-

can figures." It stressed that, "many mistakes have been made in connection with the death penalty, [which] can never be rectified."

The resolution concludes by calling for the "revocation" of the death penalty in all countries of the world and urges all U.S. government officials "to prevent executions from being carried out" and all candidates for office in the U.S. "to set an example by rejecting the application of the death penalty."

LaRouche Thanks North Dakota Voters

After preliminary results in the June 9 North Dakota Democratic presidential primary indicated that he was the victor, Lyndon LaRouche issued a statement thanking the voters. He stated that the vote "means that the issues which I have raised in the course of the campaign, will be forced to the surface and must be debated and discussed at the highest level."

LaRouche drew particular attention to the world food crisis: "Reports are that only one-third of the world's population is properly nourished. That means, in fact that

two-thirds of the entire population of this planet, over 3 billion people, are not properly nourished. In fact, as I know, many of them are starving to death. And yet, powerful influences in the grain cartels, in the Agriculture Department and elsewhere in Washington and other locations, are savagely cutting the production of food."

Although the official vote tally later showed H. Ross Perot to be the victor with 28 percent of the vote, LaRouche nonetheless placed second with 21 percent of the ballots cast.

Christian Economics vs. IMF In East Europe

At a conference in Warsaw, Poland April 6-7, international political activists, parliamentarians, and economists met to discuss Lyndon LaRouche's proposed alternative to the murderous "shock therapy" program of the International Monetary Fund: the science of Christian economy. The meeting was organized by **Polish Rural Solidarnosc**, the Budapest-based **Working Group for a New Europe**, and the **Schiller Institute**. Participants came from Poland, Croatia, Romania, Russia, Slovakia, Ukraine, Hungary, Georgia, Germany, Indonesia, India, Italy, and the United States.

Opening the conference, the national chairman of Rural Solidarnosc Roman Wierzbicki documented the collapse of Poland's economy under the IMF program. Surely, he said, there must be some other solution. Twenty-eight percent of Poland's work force is employed in agriculture, he said, and since the beginning of the 1980's, farmers' incomes have fallen dramatically. In this country, rich in agricultural potential, there is now an absurd situation in which food is being imported, and the internal market is thereby being further undermined.

Dr. Tibor Kovats, the speaker of the Working Group for a New Europe, emphasized the necessity of orienting to the actual living conditions in other nations and coordinating possible mutual actions against the shock therapy of the IMF and against the GATT dictates.

Productive Credit

Helga Zepp-Larouche, president of the Schiller Institute in Germany, stressed in her keynote address that there is an irreconcilable conflict today between the international banking system and the rest of the planet. "It is the economy that must serve the interests of man," she said, "not the other way around. . . . As long as monetarist policies are followed, the global depression will continue to intensify." The only solution is "the concept of



Warsaw conference delegates deliberate over economic strategy.

political stabilization through economic development," she said. "The impulse for an upswing can only come from a dirigistic intervention from governments, which, through a process of creation of productive credit outside the scope of current budgets, give credits for specific projects, to overcome unemployment and get production going."

Dr. Jonathan Tennenbaum of the Schiller Institute spoke on the methods of productive credit creation, according to the system of political economy associated with Alexander Hamilton, Friedrich List, Count Sergei Witte, and Lyndon LaRouche. State credit creation cannot function without great investments in infrastructure, he said. As for the concept of "state dirigism," which many East Europeans reject because of their experience in the communist period, Tennenbaum stressed that it is neither good nor bad in itself; it is a question of what the state's intervention is directed toward. In the hands of political leaders who are guided by a Christian image of man, "state dirigism" is quite a sensible instrument. "The dirigism of the corporatist system of labor-intensive slave labor—and the ideas of Keynes and Schacht—have nothing to do with what the Schiller Institute is proposing."

Dennis Small, the coordinator of the Schiller Institute's work in Ibero-America, gave a report on the effect of IMF austerity conditionalities in that part of the world, and described the revolution that is beginning against this policy in Venezuela, Brazil, and other countries.

IMF Only Steals

Small shocked the audience by comparing the current situation in Peru to Auschwitz, as a direct result of IMF policies. Some found this hard to accept: "We agree that the IMF is bad, but we must get money from somewhere." Small challenged the Eastern Europeans present: You are under an illusion if you think that the IMF *gives* money; the IMF *only steals* money. You had the courage to get off the sinking ship of communism, and now we are telling you that the "free market economy" is a sinking ship too.

In the intense debate that ensued, Helga Zepp-LaRouche stressed that Eastern Europe must link up with Ibero-America to "sink the ship" of the IMF. Don't wait for the Western Europeans to give you aid: they won't do it. *You* must be the ones to demand a replacement for the IMF, based on Lyndon LaRouche's Paris-Berlin-Vienna "Productive Triangle" concept of infrastructure development.

His Beatitude Raphael I Bidawid, Patriarch, Chaldean Catholic Church in Iraq

His Beatitude Raphael I Bidawid is the highest authority of the large Catholic community in Iraq, and from this position serves as the spokesman for all Christians there. He has been an outspoken critic of the New World Order policy, and has been active in supporting relief efforts for the Iraqi population, starved by the ongoing embargo. Among these efforts is the Committee to Save the Children in Iraq, initiated by Helga Zepp-LaRouche for the Schiller Institute. His Beatitude Raphael I Bidawid was a co-founder of the Committee, together with Mrs. LaRouche and Dr. Prof. Hans Koechler, President of the International Progress Organization of Vienna. Muriel Mirak-Weissbach, who has coordinated work for the Committee since its inception last May 1991, was in Baghdad and met with His Beatitude at the Patriarchate on April 29 and 30, 1992. On that occasion, the Patriarch had the following to say.

Fidelio: Can you tell us something about the Christian community in Iraq and its relations to other communities?

Patriarch Bidawid: Out of a population of eighteen million, one million are Christians; eighty percent of them Catholics, and ninety percent of them, Chaldeans. We have the Patriarchate

here in Baghdad and eight dioceses, with churches in Al Basrah, Kirkuk, Sulaymaniyah, Arbil, Mosul, Al Kosh, Dora, Amadiyah, and Zakho in Kurdistan. Our relations with others are very good because we are one people; some became Christians, some later became Muslims, but we are the same



Committee to Save the Children In Iraq: Committee coordinator Muriel Mirak-Weissbach (right) holds press conference with Iraqi children arriving in the U.S. for medical treatment, April 1992.



EIFRNS

population. Therefore we live peacefully together, Christians, Muslims, and even a small community of Jews (about two hundred families). In addition to the Chaldeans, there are a number of sects, the Mandaeans, faithful of St. John the Baptist. This small sect, whose members say they are our cousins because St. John was the cousin of Christ, are the descendants of the Essenes, and live by rivers, because many of their rituals, including baptism, require ablutions with natural waters. There are even some so-called fire-worshippers, the Zoroastrians, who, because they intermarry, have limited descendants. They are often called "devil worshippers" and worship a metal peacock.

Fidelio: The Vatican's initiative to lift the embargo against Iraq has been widely publicized. I understand you had an important role in this.

Patriarch Bidawid: Yes. This embargo is being implemented against the population for no reason whatsoever. The war is over; so the embargo should be over as well. On March 23, I was received by His Holiness, Pope John Paul II in Rome, and briefed him on the effects of the embargo. Following that meeting, he sent Alois Wagner with a high level delegation

EIFRNS/Stuart Lewis



Committee to Save the Children in Iraq demonstrates against the embargo, Los Angeles, June 1991.

EIRNS/Jim Duree

to Iraq. They saw the situation with their own eyes, returned to Rome with a report on a Sunday, and on the following Wednesday, the Pope made a declaration in his weekly audience. The situation was so urgent that the Pope did not want to lose time.

We do the best we can, in political channels. Contacts with American and European leaders have continued, but they always run up against a wall. The only authority which remained close to Iraq was the Vatican. Even the Arab countries—with the exception of Jordan—did not move. Jordan was the only one to show a noble attitude, that of King Hussein, who made a famous speech, for which he was threatened. Syria betrayed us, for understandable reasons. The Vatican was the only authority which defended us against the war and against the embargo.

What I did was simply my duty, as head of the Christians in Iraq, to try to defend the population, and I mean the entire population, Christian and Muslim alike. They are all my brothers, a Muslim baby is like my baby. I tried to explain this to people recently in Germany, but they are full of preconceived notions. The Muslim versus Christian conflict which they have fixed in their minds, does not exist. I told them: there is no religious conflict.

I lived in Lebanon for twenty-three

years, lived through the whole war. What Israel did in Lebanon, what it did in Iraq, was to try to show the world that religious coexistence is impossible. When the president of Lebanon, in the name of all Arabs, gave the example of his country as a model for coexistence among Christians, Muslims, and Jews, Israel began the war against Lebanon, a war which created an abyss between Christians and Muslims. Israel says, "it's a chimera to think the religions can live together in peace." But Lebanon lived for forty years in religious peace.

Here in Iraq, the same thing. I am a Christian, but my lawyer is a Muslim, for example. Israel has a policy of encouraging emigration, and the Jewish people who left our country, claimed they were persecuted—because if they did not say so, they would not have been accepted. But they did not leave because they were persecuted. Why do Italians leave for the United States? Because they are persecuted? No, because they are seeking a better life or jobs. There is a worldwide propaganda campaign waged against Iraq, organized by Zionist institutions. The world does not understand this. I was in the United States, and said these things. One person asked me, "Aren't you afraid of speaking out against Israel? If I said these

things, I wouldn't dare walk outside." What a disgrace!

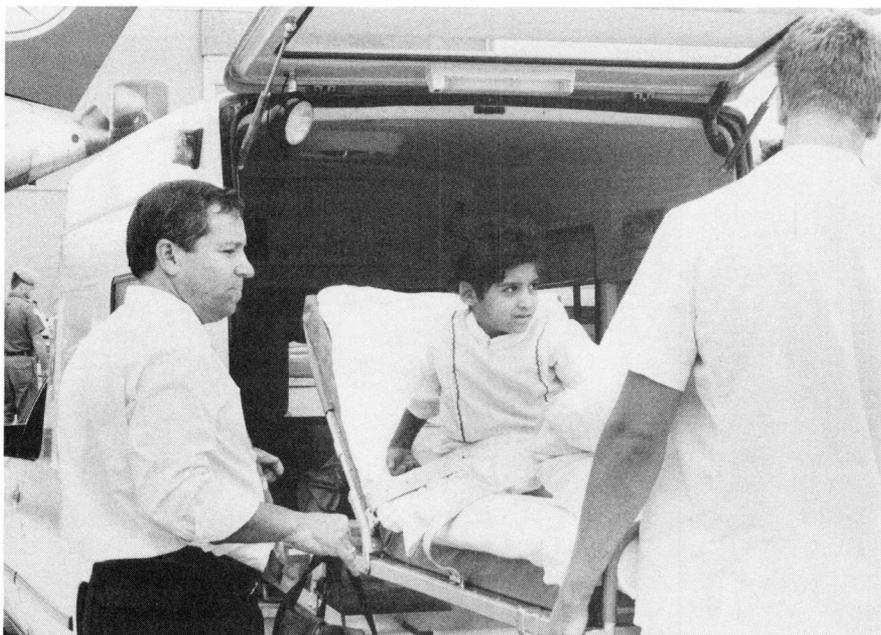
Fidelio: Can the Vatican intervene into the Israeli situation?

Patriarch Bidawid: The Patriarch of Jerusalem told us, at a recent meeting of the Patriarchs, that it is very difficult to imagine how bad the situation of the Christians in Israel is. If there were 100,000 before the war, now there are about 20,000 Christians there, and they are persecuted, degraded—not by weapons, but otherwise. It is possible that one day there may be no Christians left on the land where Christ was. The Patriarch is not well liked in Israel—he lives in Jerusalem—but he has a lot of courage. The West does not want to hear this.

Fidelio: But there are "peace negotiations" going on, at least officially.

Patriarch Bidawid: Israel will never accept Christians at the same level, but will continue to treat them as second-class citizens. All these negotiations are idle chatter. What sense does it make to negotiate, while Israel is continuing with new settlements? This is the New World Order of George Bush: Arabs are living there, then a Russian immigrant arrives, and the Arab is thrown off the land.

Saddam Hussein said he would



EIRNS

‘Saddam Hussein said he would withdraw from Kuwait, on condition that Palestine, Lebanon, the entire region, were discussed all together. But Baker said *no linkage*, and that led to the war. Now the world has to admit the injustice done to Iraq.’

Committee airlift brings children to Germany for medical treatment, July 1991.

withdraw from Kuwait, on condition that Palestine, Lebanon, the entire region with all its problems, were discussed together. But Baker said “no linkage,” and that led to the war. Now the world has to admit the injustice done to Iraq. The United States was the only one calling the shots; the U.S.S.R. no longer existed, and no one else even raised a finger. In Bonn, when I expressed this, a former ambassador told me, “Beatitude, I accept what you say completely, but, you know, I cannot say this, because others would say that I was going against the U.S.” They cannot speak against the U.S. or against Israel! I said the same thing to Giulio Andreotti, telling him, “You’ll pay dearly one day for this alliance with America, when one day Europe is united. You will see what that means, when America controls the flow of oil, and can turn on and turn off the faucet for oil flowing to Europe.”

Fidelio: Then what sort of perspective do you see?

Patriarch Bidawid: They accused Hitler of saying “might is right,” of using the principle of power as a principle of law, but they are worse than Hitler. We are in a situation now, where a former German ambassador tells me he cannot say such things. It

reminds me of a proverb we have, “You can’t tell the lion that his breath smells.” Why? Because he would devour you. No one dares tell the lion.

So, what are the perspectives? The Lord needs our help. We cannot do anything, if Europe remains passive. As for the U.S., the problem is one of moral degeneracy. When I was in the U.S., I saw a marriage performed on television, between two men! What can one expect from that kind of a world, where such perversion is legalized? It’s like the Roman Empire in its collapsing phase. And the tragedy is that Europe, which has a glorious civilization, lets itself be guided by people who have lost all moral sense.

Fidelio: Perhaps there is some hope that the U.S. situation will change through the elections coming up.

Patriarch Bidawid: There are always good people, who have the power of reason. But what influence do they have?

We talk about “democratic life,” but it does not really exist in practice. Take the example of Italy: it used to be Catholic, then it abolished religion, it took Christian teaching out of the schools, it legalized abortion and divorce, all through “democratic” means. “Democracy” in this case means doing evil. But freedom is the

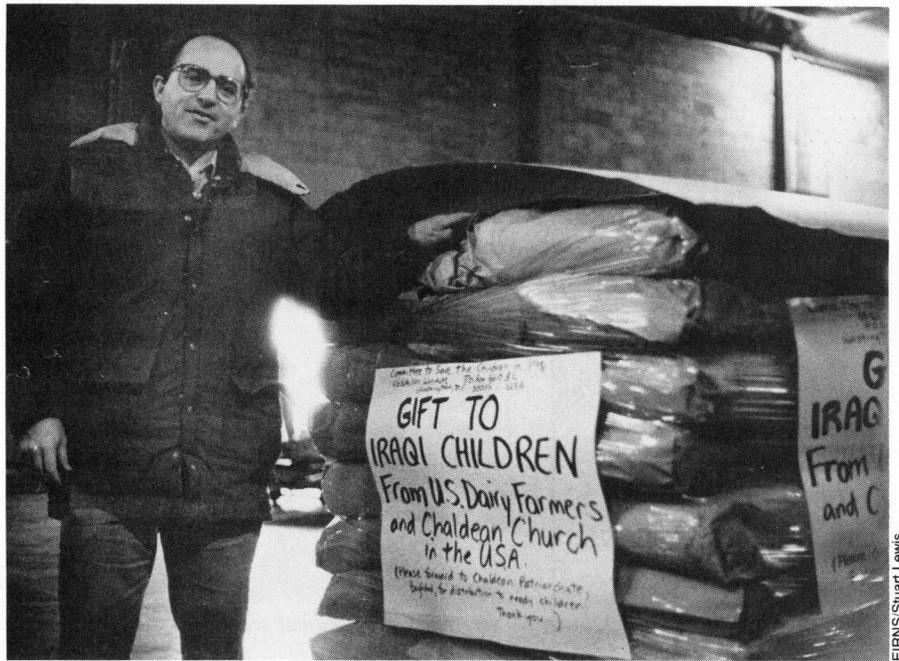
freedom to do good, not evil. In the West, there is no democracy, only the most abject slavery. One is ashamed to walk through the streets of Rome, to see the scenes one sees. I know an ambassador in Rome who fears for the well-being of his children, who may see such things. I have a nephew, who wanted to go to Paris to study at the Sorbonne. I said, that was crazy: he should study in Beirut, get a law degree, then, when he was older, married, he could go to Paris!

Fidelio: Regarding the political situation in the Arab world, clearly the kind of “democracy” we see now in the West cannot be appropriate, considering the history of the region and its culture.

Patriarch Bidawid: Yes, but even in Europe, it took a long time for democratic forms to evolve.

Speaking of democracy: Consider how people look at the Arab world. They speak of “Muslim fanaticism”—they never speak of “Islam.” Yet I have seen among Protestants, more fanaticism. For example, when the Pope wanted to nominate a bishop in Geneva, the Protestants were up in arms, saying, no, that’s Calvin’s city! And this was Switzerland, the most “democratic” country in the world. Or when the U.S. President wanted to nominate

'I tried to defend the population, and I mean the entire population, Christian and Muslim alike. They are all my brothers, a Muslim baby is like my baby. The Muslim vs. Christian conflict does not exist.'



EPHRAIM SUART LEWIS

an ambassador to the Holy See, American Protestants objected, saying the President wanted to sell America to the Vatican!

Now, the European model is difficult to impose here, where the history of the region is so different. Here there have been chiefs, caliphs, princes, who have ruled. People say here, that one needs a benevolent dictator, because there is no other way to govern. And you see dictators throughout: in Turkey, in Iraq, in Saudi Arabia, etc.

People outside our region see the ethnic problems here in a false light also. They talk of Kurds and Shi'ites, but who is who? There are many ethnic groups, including Iranians and Turks here. Before the war, the government of Iraq had prepared the draft of a constitution for discussion in Parliament, which would have regulated the creation of political parties. Now, that has to be altered, to conform to the altered situation.

There is a possibility that parties may be introduced, but in a controlled way—otherwise there would be chaos. Egypt has political parties, officially, but it is a farce; we do not want to repeat that. Iraq already had political parties under the monarchy, so there is a tradition that can be revived, but it needs time. It is a bit like the situa-

tion in Eastern Europe. The will of the government does exist, and the population does want more democracy, but we have to be cautious. We are not living in a vacuum. Iran, Turkey and Syria will not leave us in peace. The Gulf Arabs have no influence. But Iran, Turkey, and the Saudis, spend billions on building up war machines.

Fidelio: How do you view the phenomenon of Islamic movements in power, which are often termed “fundamentalist,” and their religious dimension?

Patriarch Bidawid: If there is no religious spirit, there is nothing. In Iran, the soldiers, even the young children fourteen years of age, went to war for religious reasons. They believed that with a key on a string around their necks, they would go to paradise if they fell in battle. Simple people believe in religious leaders, who can, if they want, do harm. In Iran today, we are back in the Middle Ages, with a figure like the “Pope-King” which existed in the medieval West, and which caused suffering for the Church. Here in Iraq, the Islamicists cannot take power, because the government is secular, and there is a separation between Church and State.

Fidelio: Yet much is said about the Shi'ites in Iraq, particularly in the south, as being a threat.

Patriarch Bidawid: A lot had been done for the Shi'ites in the south, before the war. Then, the U.S. and its allies tried to foment a rebellion and it failed. How can they expect the people to overthrow the regime, when the armed forces are in the hands of the party? A *coup d'état*, which is what the U.S. wanted, was impossible. What they got was just the opposite: they wanted to create ill-feeling in the population, but now the population is closer to the government, because it sees that the U.S. wanted its ruin. People say quite openly now: Better in Hell with Saddam Hussein, than in Heaven with the U.S. The Kurdish leader Barzani said, you instigated us to revolt, then you abandoned us. As for the Shi'ites and the Kurds, do you know what kinds of massacres they perpetrated? How can I imagine they should come to power?

Certainly, we can live together in peace, but only if the U.S. and the British leave us alone. Many in the army were Kurds, many governors are Kurds. And Shi'ites—there have been great Shi'ite prime ministers. We had no problem living together. It was the British and the U.S. who created the



EIRNS/Stuart Lewis

Committee to Save the Children in Iraq. Left: U.S. farmers send emergency powdered milk relief, January 1992. Above: Iraqi children arrive in U.S. for medical treatment, April 1992. Right: Medical supplies from Europe arrive at Red Crescent distribution center, Bagdad, July 1991.

problem. I am from Mosul, and I can tell you that we never had any problem between Christians and Muslims. But as long as there are foreign powers in the country, there will be no peace. If they leave the area, then in two months, everything will be all right.

I certainly hope that they let us live in peace, because we know how to live in peace. Whether or not they will lift the embargo is an open question: ask Bush!



EIRNS

Special Exhibits Bring Masters of Metaphor to U.S.

The current 1992-93 season offers many opportunities to Americans and visitors to the United States to come face to face with the art of great masters of metaphor in painting and sculpture. These opportunities, coming to most major cities, are afforded by special exhibitions as well as by the permanent collections of the major American museums, such as the National Gallery of Art in Washington, which has just undergone a two-year-long rehanging of its permanent collection of paintings from the thirteenth to the nineteenth centuries.

Classic and Classical Art

The year's most spectacular special exhibits are two which sharply pose the issue of Western civilization's heritage from Greek and Roman antiquity.

The first, now closed, is the grand retrospective of "Andrea Mantegna" which was held at the Metropolitan Museum of Art in New York from May to July. Andrea Mantegna (1430-1506), born in Padua in northern Italy, was the fifteenth century artist most preoccupied with antiquity, and he spread his reflections all over Europe, being the first artist of genius to occupy himself with engraving, the "mass media" of that era.

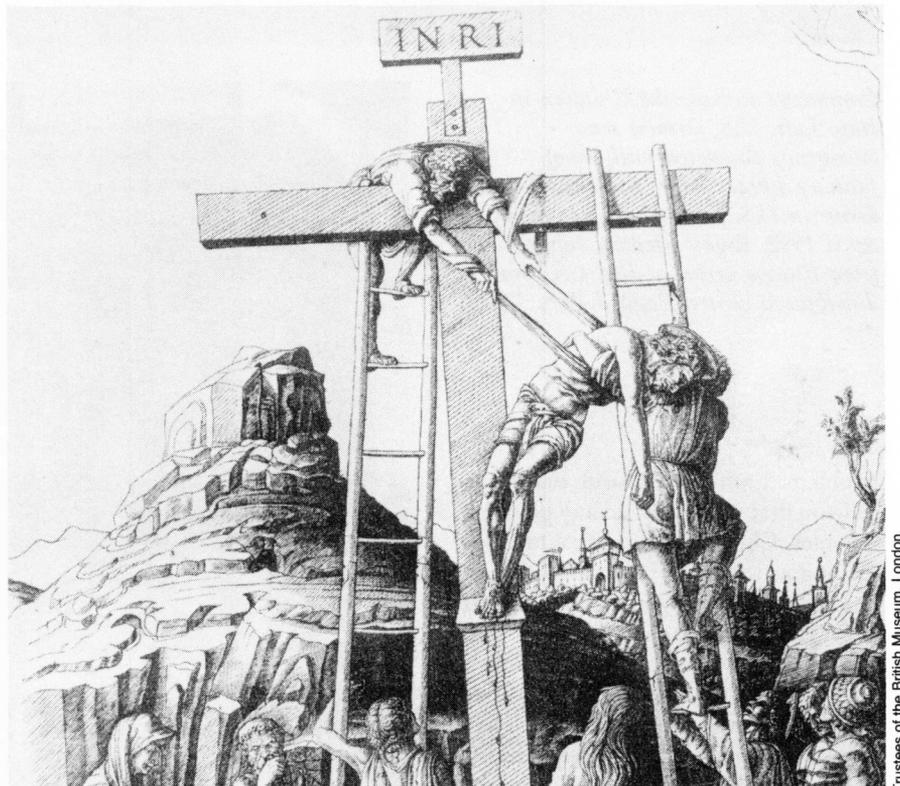
Mantegna was not only the first artist outside Florence to claim for himself the prerogatives of creative genius—demanding his work be counted as among the liberal arts, rather than mere crafts—but he was one of the greatest masters of classical tragedy in any medium, in any era. In his engraving of the "Deposition from the Cross," the despair of the apostles who gesticulate upwards at the foot of the cross is counterposed to the inert lifeless body and the dead weight of Christ's arm. These means, applied to Christian subjects, come from Mantegna's passionate study of ancient sculpture.

His sense of the importance of conveying weight in the "weightless" medium of two dimensional art should also be thought of in relation to the great scientific minds of the day—from Nicolaus of Cusa to Leon Batista Alberti to Paolo Toscanelli. They all wrote treatises on the subject of *weight*, both from the standpoint of engineering challenges, and as the means of conducting rigorous scientific experiments, such as Cusa's precocious proof of what later became known as photosynthesis. Cusa showed that something weightless—light—could turn into weighty living matter. Mantegna, the most lapidary of painters, used optical means to suggest weight, in order to point up the irony of the immaterial soul's overcoming ponderous flesh.

The second major exhibition in this

vein is called "The Greek Miracle, Classical Sculpture from the Dawn of Democracy, the Fifth Century B.C.," and will be held at the National Gallery in Washington and the Metropolitan in New York over the fall and winter of 1992-93. It will include twenty-two objects, most of which have never before left Greek soil, and eleven more from Europe's leading museums, "representing the great sculptural innovations and achievements in the depiction of the human form that followed the birth of democracy in Athens 2,500 years ago."

This show will present in sculpture the only surviving examples of the Greek ideal of humanity which directly and indirectly inspired the Golden Renaissance, since all the originals of famous Greek paintings have vanished.



Andrea Mantegna, "Deposition from the Cross," c.1495 (detail).

These two loan exhibitions involve the once-in-a-lifetime or once-in-a-generation gathering together of the work of a particular artist, or works which illustrate a particular theme or period.

A Glimpse of Dublin's Treasures

Another kind of loan show, to which this reviewer is very partial, takes a sampling of a great collection. It is like getting an almost-free trip to another country, and makes

one ask questions like, "How did these pictures get into this gallery? Who bought them? When did it happen?"

Such is the case for the show of "Mantegna to Goya: Master European Paintings From the National Gallery of Ireland," at the Chicago Art Institute until Aug. 9, which will go on to San Francisco (September-December), Boston (January-March 1993) and New York (April-June 1993). The Mantegna of the title is the small monochrome picture of "Judith and Holofernes," which was therefore not included in the New York Mantegna show although it is one of his masterpieces.

The Dublin gallery, founded in 1854, cannot compete with much older and richer institutions, but it has some unique treasures which are among the forty-four pictures lent for this show. The selection, while broad ranging, happily favors the human visage, whether simply portrayed in daily life, or as part of a sacred scene.

Several works are by Renaissance artists who specialized in portraiture, such as the quietly moving "Portrait of a Widower with His Two Children" by G.B. Moroni, painted around 1565. The comparison to the pompous superficiality of many of the eighteenth century portraits is telling—like the Irish aristocrats who blended into the British establishment, such as the fatuous "Earl of Bellamont" painted by Sir Joshua Reynolds in a tall plumed hat and pink satin cloak in 1773.



Diégo de Silva Velázquez, "Kitchen Maid with the Supper at Emmaus," 1618/19.

Courtesy of the Art Institute of Chicago

The "Portrait of a Musician" of c.1480, attributed to Filippino Lippi is worth the admission by itself. A musician is shown tuning a *lira da braccio*, a bowed, stringed instrument which is one of the ancestors of the violin, and which was used most commonly by poets who accompanied themselves while singing poetry (in his day, Leonardo da Vinci was the most famous virtuoso in this). The thoughtful expression on the musician's face, whose eyes do not focus on the spectator but on some distant object of thought, suggests that while he is tuning his *lira* to accord with the physical harmonies of the universe, he is also thinking about the composition of his poem. On the shelf behind him are a lute, another *lira*, musical scores, and two small wind instruments. These objects, implying other players, form a mute dialogue that enriches our concept of the unnamed musician's identity.

For its poetic depth, one of the most rewarding paintings in the traveling Dublin show is an early work by the Spanish painter Velázquez (1599-1660), "Kitchen Maid with the Supper at Emmaus," which would have been painted around 1618-19 while Velázquez was still a youth in Seville. The artist takes up the theme of the *bodegón*, a type of painting which combined still-life and *genre* in a kitchen or tavern setting. These were popular in Flanders and Spain.

Mannerist artists, a generation earlier in the sixteenth century, had often reversed their compositions, in order

to introduce arbitrary variety into a sacred subject. The major theme would be cast into the background, while purely secondary figures and objects loomed large in the foreground.

Velázquez inverts this Mannerist trick to create a true dialogue. The portrayal of the Moorish kitchen maid, who pauses at her work to listen to what is taking place in the background, connects the humblest daily activity to the miraculous. Christ's revelation of himself to two disciples in an inn at Emmaus was one of his appearances after the Resurrection, which made palpable the promise of eternal life to Christians.

Velázquez was a master of the science of optics; many books on this subject were in the inventory of his possessions when he died. He conveys the surface textures of glazed and burnished vessels by his handling of light in the foreground. The girl's face is divided into light and shadow, the brilliantly lit half of it turned toward the miracle behind her. There is a relationship between the natural light in the kitchen, and the "super-natural" light of the radiant Christ in the room at the back.

There were many slaves in Seville in the early seventeenth century who converted to Christianity. The painting would seem to imply not only that salvation is possible for this lowly slave, but indeed by her position in the picture, that for Velázquez she is the *primary* beneficiary of that promise.

—Nora Hamerman

Bach's St. Matthew Passion for Easter

J.S. Bach's setting of the Passion according to St. Matthew, is one of the most powerful statements of the principles of Christianity. Johannes Somary's 1977 Vanguard recording, just issued on compact disc by Omega, is among the few to have done justice to Bach's work.

The conducting is broad and strong, and the voicing is distinct, with both of the double choruses heard with clear separation. The different musical choirs represented by the soloists, the orchestra, and the two choruses are given plenty of room to breathe. The vocal soloists, including tenor Ernst Haefliger and baritone Benjamin Luxon, sing with tremendous poetic understanding.

The power of Bach's "Matthäus-Passion" derives from the power of Good Friday itself, the day of the crucifixion. Drawing on the Gospel according to St. Matthew, Bach demonstrates the responsibility of each person who seeks God's gift of eternal life to cleanse his heart, and in imitation of Christ to *act* out of love for the benefit of mankind as a whole.

Of particular significance in this regard is the way in which Bach gives meaning to the beatitude from Christ's Sermon on the Mount, in which he says, "Blessed are the clean of heart,

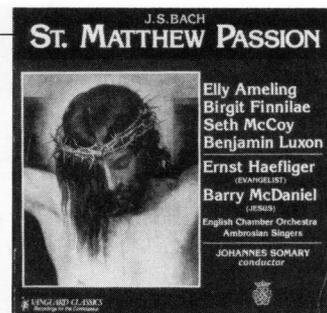
for they will see God." (Mt. 5:8)

Human Singing Voice

Bach accomplishes this by his use of the *registers* of the individual human singing voice. The best way to approach the whole work is from the final bass solo No. 65, "*Mache dich, mein Herze, rein.*" It is not only the last of many individual statements, but also Bach's final testament as to how the individual must view Jesus. Bach has therefore constructed many other movements of the Passion as variations of this aria, including the opening and closing choruses No. 1 and No. 78, which are based on it.

He gives this most profoundly beautiful song to Joseph of Arimathea, the follower of Christ, who begged Pontius Pilate for Jesus' body, so that he could bury him in his own tomb. "Make thyself, my heart, clean," Joseph tells himself, "for [there] I will bury Jesus."

Bach brings out the individuality of the human soul with his use of the bass's own specific registration. The bass shifts from its middle register, to its third or high register, which has a dramatically different sound, on the D above middle-C, which makes the bass totally distinct from soprano, tenor, or other voices.



Matthäus-Passion
by J.S. Bach, BWV 244
Johannes Somary, conductor
1977, Vanguard/Omega Classics
3 CD's, 4060-1-2, \$21.96

At first, Bach constructs a poetic dialogue, differentiating between Joseph and Christ. Joseph of Arimathea speaks of himself in the middle register, and then rises into the highest third register after repeated contemplation of Jesus (SEE Figure 1).

The aria continues at some length repeating these words, always reserving the few dramatic higher register notes for Jesus' name.

But, at the point where Joseph of Arimathea himself is transformed and makes a commitment to emulate Christ, Bach allows the "*ich*" ("I") of the singer to similarly rise into the highest register (SEE Figure 2).

Vanguard/Omega's Somary recording succeeds because conductor and soloists capture the poetry Bach's registers imply. Benjamin Luxon's Joseph gives precisely the right, understated but passionate poetic stress to the phrases highlighted by Bach as shown here, communicating the transformation of the individual soul.

He succeeds—as does most of the recording despite being at a pitch higher than Bach's—because he makes his voice match the poetry. Luxon is also a baritone, which is a higher voice than the bass for which Bach called, and so his voice registers match Bach's intentions.

Somary's generously broad tempo brings out Bach's orchestral bass continuo in such *legato* contrary-motion to singer and oboe da caccia soloists, as to make everything sound like the work of God.

—Kathy Wolfe



FIGURE 1. Aria "Mache Dich," opening. The grey boxes show where the voice rises into the highest register when singing of Jesus.



FIGURE 2. "Mache dich," conclusion. The singer's "I" finally rises to the high register.

Intellectual Honesty, Religious Bias

This book, which bills itself as the “first general study of Friedrich Schiller’s works to appear in English for over forty years,” contains some useful insights, owing to the author’s admiration for Schiller and her intellectual honesty, but is nonetheless flawed by her own academic and religious biases.

The book rebukes many misconceptions about Schiller, for example, that he was a Kantian. Sharpe writes: “From strict Kantianism he distanced himself quite specifically as early as in *On Grace and Dignity*. . . . Schiller constantly strove to overcome Kant’s dualism of nature and freedom, searching to express through Kantian terminology ideas which exceed its scope.”

Additionally, in her treatment of the play *Wilhelm Tell*, after quoting Schiller, who wrote that the central idea of the play is “How self-help can be necessary and just in a strictly defined case,” she insightfully points out that “the play can be and has been seen as a reply to Kant’s absolute denial of the right of rebellion.”

The book also correctly emphasizes the fact that Schiller’s work is philosophically in the “Christian and Platonic” tradition. The author points out that in his *Philosophy of Physiology*, Schiller begins by asserting that “man’s purpose is to strive toward the greatness of his Creator, to encompass the world with the same vision as the Creator.” The author also references the *Philosophical Letters*, where she says “we read that the universe emanates from God’s mind, that love binds creation together, and that all created things are destined to emulate the Creator.”

Politically, the book correctly reports Schiller’s disillusionment with the French Revolution and his sympathy for the American Revolution. Sharpe stresses that after the failure of the French Revolution “he loses confidence neither in reason nor in the

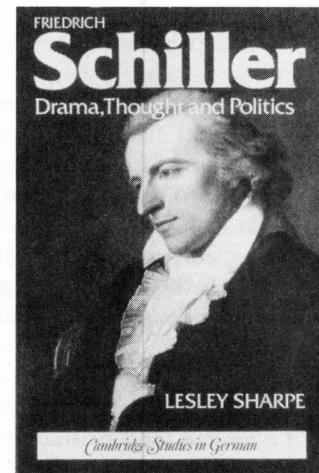
notion of man’s inalienable rights. This faith may in fact be due to the continuing impact of the American Revolution.” The book then correctly points out that the failure of the French Revolution prompted Schiller to look at the failure of the Enlightenment as a whole. And finally, the author correctly points out that through his friend Wilhelm von Humboldt, Schiller’s notion of the necessity of aesthetic education to achieve true political freedom, was directly incorporated into the Prussian educational reforms of the newly emerging German nation.

Academic Authorities

Unfortunately, despite these positive reflections of an appreciation of Schiller’s work, the book is flawed by a perceived need to propitiate British academic authorities and to counter the “long tradition of adoration of Schiller in Germany, with the attendant distortion of his works in the cause of nationalism.” This results in a lukewarm, emotionally detached critique, which the author characterizes as follows: “I have tried in this study to stress Schiller’s restlessness. . . . If I have succeeded in this, Schiller should have emerged as an extremely difficult poet to pin down.”

At the very end of the book the author suggests that in the context of the current political upheaval in Europe, Schiller illuminates the “difficulty” of the tasks of “shaping a political future and restoring congruence between the moral and the political realms” and “the nature of the choices they demand.” But because she has portrayed his aesthetical writings as only partially successful, “leaving ambiguities which are hard to explain away,” her book has the effect of blunting the answers Schiller offers.

The fact is that Schiller is not difficult to pin down. Rather, it is the author’s own attempt to impose established academic and religious



Friedrich Schiller: Drama, Thought and Politics

by Lesley Sharpe
Cambridge University Press,
New York, 1991

389 pages, hardbound, \$54.50

categories on Schiller’s work, which causes her the difficulty, which she erroneously ascribes to Schiller.

Sharpe reports that Schiller, in his *Letters on Don Carlos*, portrays the character Posa as an idealist who falls into despotism. Nonetheless, she rejects Schiller’s own analysis and argues: “In spite of Schiller’s seeming ambivalence toward Posa . . . he is vindicated.” She even goes so far as to say, “Schiller was less than just to Posa and to the play he had written.”

In her assessment of *The Virgin of Orleans*, she uncritically embraces the critics by writing, “in spite of the enthusiasm with which it was received . . . the play has consistently struck many critics as a failure.”

Perhaps the greatest weakness is the book’s treatment of Schiller’s poetry. The translations Sharpe uses of Schiller’s poems are primarily by the Isis worshipping British imperialist, Sir Edward Bulwer-Lytton, who consistently violates Schiller’s texts in order to make Schiller’s poems reflect his own diametrically opposed views. (One example among many: in the last line of Schiller’s poem, “The Power of Song,” Bulwer-Lytton deliberately mistranslates the word “nature” into “Great Mother.”)

Religious Bias

The key to Sharpe's own difficulty in understanding Schiller is her persistent effort to portray Schiller as anti-Catholic, despite having correctly identified him as a Christian. This is related to her erroneous portrayal of Schiller as an Enlightenment thinker, despite having correctly identified his rejection of the anti-Christian Enlightenment outlook of Rousseau, Voltaire, and Kant.

In both the *Philosophical Letters* and the *Kallias* correspondence, Schiller explicitly identifies the Christian commandment to love one another as the basis of his concept of beauty and of political freedom. By failing to comprehend this fact, Sharpe for example portrays the vision of the world espoused in *Don Carlos* by Posa as "Rousseauistic" rather than Christian, and argues that "history, viewed from the perspective of the Enlightenment, has vindicated his [Posa's] beliefs."

Although it is undeniable that Schiller, who was raised as a Protestant Christian and in his youth considered becoming a minister, was favorable to certain legitimate features of the Reformation, he was not uncritical of it, nor was he an anti-Catholic zealot. For Schiller, who in the *Kallias* letters bases his entire theory of aesthetics on the Good Samaritan parable of Christian love, the world cannot be reduced to a conflict of Protestantism versus Catholicism. Sharpe, however, would have him do precisely this.

For example, in the play *Mary Stuart*, Mary takes the sacraments of reconciliation and communion before being unjustly executed. Schiller had insisted on the retention of this scene and Sharpe recognizes that through it Schiller portrays the atonement Mary achieves through God's forgiveness. And yet Sharpe's anti-Catholic bias compels her to argue that "in no sense does he seek to glamorize the Catholic faith. Elsewhere in the play the Catholic church is presented as power-hungry and hypocritical. . . ."

Sharpe's bias also leads her to suggest that "the problem" with Schiller's treatment of Joan of Arc in *The Virgin of Orleans*, who is inspired by the Vir-

gin Mary, is that the heroine herself is a "curious mixture of Christian and Pagan."

Nor is she able to fully appreciate the ending of *Wilhelm Tell*. After first wishing that Schiller had devised a way of avoiding Tell's murder of the tyrant Gessler, she reluctantly recognizes that Tell's action is justified by natural law, i.e., "there is a limit to a tyrant's power." She also recognizes that, as Schiller himself wrote, Tell's murder is "resolved morally and poetically" by the contrast of his motives with those of Parricida, who killed the Emperor for personal reasons. But her anti-Catholic bias prevents her from even considering the importance Schiller attributes here, as in *Mary Stuart*, to atonement with God through the repentance and absolution of sins. In response to Parricida's plea to him for help at the end of the play,

Tell says:

Hear, what God grants my heart—
To Italy and to Saint Peter's city,
There cast yourself at the Pope's feet, confess
To him your guilt and thus redeem your soul.

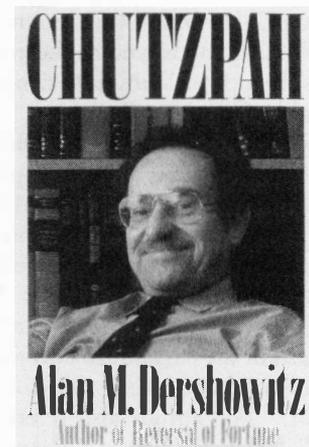
Thus, although less crude than other British academic treatments of Schiller, and offering many isolated insights, this book continues the British tradition of cultural subversion by means of distortion. In light of the positive role played by the Catholic Church in the fight for freedom in Europe and throughout the world today, the attempt to characterize Schiller as anti-Catholic is particularly destructive.

—William F. Wertz, Jr.

The Anti-Defamation League Organizes Jews Against Judaism

Over the last twenty-five years, Edgar Bronfman's World Jewish Congress and the B'nai B'rith's Anti-Defamation League have been on a rampage to eliminate all positive elements of Jewish tradition. For the most part, this campaign has not directly attacked Jewish theology, but has consisted of appeals to defend Jews and the Jewish state against anti-Semitism, terrorism, and former Nazis, or to revive the ethnic, rather than religious, traditions of Judaism. In his 1991 book *Chutzpah*, the Anti-Defamation League's favorite "civil rights" lawyer, Alan Dershowitz, opens a frontal assault against the Jewish religion and the Jewish idea of a universal creator God, which he declares to be enemies of the Jewish people.

Despite the superficiality and glaring inconsistencies of his arguments, Dershowitz ought to be taken as a serious representative of the New World Order's Jewish policy. He was personally a protégé of super-spook Arthur Goldberg, one of the founders



Chutzpah
by Alan M. Dershowitz
Little, Brown and Company,
Boston, 1991,
378 pages, hardbound, \$22.95.

of what is today called Project Democracy. During World War II, Goldberg headed the Office of Strategic Services espionage organization's effort to set up the international network of Anglo-American-controlled trade unions

which are today at the heart of the Establishment's covert warfare and dirty tricks operations. The network of Communist-turned-anti-Stalinist activists which Goldberg organized, evolved into what is today called the "neo-conservative" grouping. Dershowitz himself has become a media favorite, speaking on Zionist as well as civil rights issues. In addition to being a frequent guest on neo-conservative Ted Koppel's late-night television program, he was the subject of the recent Hollywood movie *Reversal of Fortune*.

Ironically, Dershowitz's recommendation to Jews, quoted below, ignores all Jewish tradition, and rather embraces the views expressed, for example, by Freemasonic propagandist Mark Twain in his 1898 article, "Concerning the Jews." In that paper, which the Anti-Defamation League reprinted in 1934, Twain recommended that Jews syndicalize in order to exercise political power. What Dershowitz doesn't report is that Twain compared his "benign" attitude toward Jewry in that article, to his admiration for Satan, and went on to describe Jews as money-grubbing cheats.

Dershowitz appeals to Jews not only to organize, but to renounce monotheism in favor of pagan cultism, including, perhaps, outright satanism:

"The holocaust caused many Jews to question the theological basis of Judaism. . . . [F]ew can doubt that the Holocaust altered the relationship between the Jewish God and his 'chosen people.' What, after all, had we been 'chosen' for? . . .

"If there can be one God, why can't there be many? Indeed, in some respects monotheism is a regression and an invitation to conflict. If there is only one true God, then all people must worship him. . . .

"Even monotheistic religions flirt with the idea of more than one supernatural force, whether it be the Devil or the Son of God or divine prophets."

A yeshiva student like Dershowitz should recognize his arguments, puerile though they be, as those of the Baalists (worshippers of the Golden Calf) against Moses and the Ten Commandments; he is embracing the 3000-year-

old adversary of Jewish thought. His pragmatic evaluation—what's in it for me?—of concepts such as "the chosen people" and "the Son of God," is an indication of the extent to which today's Jewish institutions and leaders have rejected the theological tradition they claim to defend.

The Anti-Defamation League finds it politically acceptable that any false god be worshipped—but not the One True God—regardless of what is true. Dershowitz describes his youthful rejection of the message of the thirty-seventh Psalm ("I was a child and then grew old, but I never saw a righteous person abandoned or his children asking for food"), by saying, "Indeed, the Holocaust, and the world's reaction to it, make it demonstrably clear not only that the observation is factually false, but also that it is morally unacceptable." In fact, the thirty-seventh Psalm is a poetic description of the consequences of turning away from truthfulness in favor of supposed material rewards, precisely as Dershowitz proposes we do now. I quote from the Jewish Publication Society's 1963 translation of the thirty-seventh Psalm, which I urge you to read in full, in this or another translation:

*Fret not thyself because of evil-doers,
Neither be thou envious against them
that work unrighteousness. For they
shall soon wither like the grass, And
fade as the green herb. . . .*

Commit thy way unto the Lord. . . .

Cease from anger, and forsake wrath;

*Fret not thyself, it tendeth only to evil-
doing. . . .*

*And yet a little while, and the wicked is
no more; Yea, thou shalt look well at
his place, and he is not.*

*But the humble shall inherit the land,
And delight themselves in the abun-
dance of peace.*

*The wicked plotteth against the righ-
teous, And gnasheth at him with his
teeth.*

*The Lord doth laugh at him; For He
seeth that his day is coming. . . .*

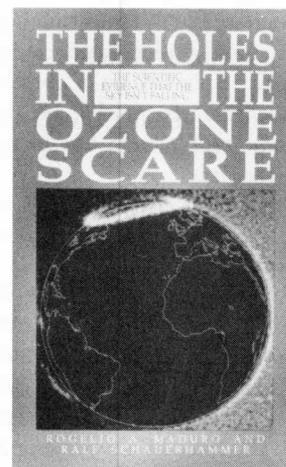
Only the fostering of human creativity, man's service in the image of God the creator, can sustain society. Only in such service does a man's life have lasting value. Those societies which have accepted Dershowitz's opinion, that any opinion but the truth is as good as any other, have become the subjects of archeology. Look in their place and they are not.

—Stanley Ezrol

Exposing the Environmentalist Fraud

How many dozens of times have you heard the media repeat that modern-day variant of Chicken Little's alarm: the Earth's ozone layer is being destroyed by human population growth and increasing industrial activity! Without it, we will all be burned to a crisp by the sun's ultraviolet radiation!

Under cover of this scare story, the radical environmentalists and their backers have accomplished the ban-



**Holes in the Ozone Hoax:
The Scientific Evidence
That the Sky Isn't Falling**
by Rogelio A. Maduro
and Ralf Schauerhammer
21st Century Science Associates,
Washington, D.C., 1992
346 pages, paperbound, \$15.00

ning of some of the cheapest, safest, and most useful chemicals known to man—the chlorofluorocarbons (CFC's) and their close relatives. These man-made chemicals play a key role in the world economy through such applications as refrigeration, industrial production, medicine, and fire-fighting. It will cost hundreds of billions of dollars to replace them; in some applications, it is impossible to replace them at all.

The ozone hole doomsday theory is a scientific fraud. But, up until now, it has been publicly challenged by only a few courageous scientists and publications. In early June, happily, 21st Century Science Associates released this comprehensive refutation of the ozone hoax, by their own Rogelio A. Maduro, and Ralf Schauerhammer of the Fusion Energy Foundation in Germany. Dr. Haroun Tazieff, the former French secretary of state for the prevention of natural and technological disasters, supplied a foreword to the study.

Myth and Fact

The ozone depletion theory holds that chlorine atoms, released in the stratosphere from the breakup of CFC's, attack and destroy the molecules of ozone (O₃) which form the layer shielding the Earth from much of the sun's incoming ultraviolet radiation. This scare is based on a number of media-perpatrated myths, say the authors, who tackle each one in turn.

For example:

Myth: CFC's rise into the stratosphere, about thirty kilometers above the Earth.

Fact: There is no scientific evidence that CFC's, which are heavy, complex molecules, rise in large quantities into the stratosphere. Consider the fact that freon, a CFC used as a refrigerant, sinks to the floor of a workshop when released from containment.

Myth: CFC's are broken apart in the stratosphere, producing chlorine atoms which attack and destroy ozone molecules.

Fact: The chemistry of CFC's in the atmosphere has never been observed, although 192 other chemical reactions and 84 photochemical reactions have

been. The ozone depletion theory was constructed on a computer.

Myth: The (allegedly) ozone-destroying chlorine atoms in the stratosphere are the result of the breakup of CFC's by ultraviolet light.

Fact: Natural sources produce much larger amounts of chlorine than do CFC's. Each year, the evaporation of seawater alone releases 600 million tons of chlorine into the atmosphere; another 36 million tons of chlorine are pumped into the stratosphere by volcanoes (both active and passively degassing). Biomass burning and ocean biota both release orders of magnitude more chlorine into the atmosphere than CFC's, which release, at the most, 7,500 tons per year.

Myth: The ozone hole over Antarctica was discovered by scientists during the 1980's.

Fact: British scientist Gordon Dobson, who pioneered the study of ozone in the atmosphere, documented the existence of the Antarctic ozone hole in 1956-57, *before the widespread use of CFC's*. (The chapter dealing with ozone from Dobson's 1968 book, *Exploring the Atmosphere*, is reprinted as an appendix in this volume.)

Scientific Rigor

Unlike the scare stories in the *New York Times* and other establishment publications, the Maduro-Schauerhammer assertions are meticulously documented by direct reference to the published scientific literature. Their book encompasses a rigorous and thorough review of the existing experimental and theoretical research on ozone in the atmosphere, and makes it easily accessible to the layman.

Perhaps even more important, Maduro and Schauerhammer answer the question: *Cui bono?* Who benefits from the ozone hole scare, and the banning of CFC's that has resulted? None other than the members of the global chemicals cartel which financed and supported the movement to ban CFC's from the beginning. The major players here are Great Britain's International Chemical Industries (ICI) and the Du Pont Company, which was taken over in 1981 by the now-bank-

rupt Bronfman empire. These giant chemical companies have already made more than \$6 billion in profits on CFC replacement since the 1987 Montreal Protocol which mandated the phaseout of CFC's.

Who Pays?

The next question posed and answered is: Who pays? The billions in new profits for the chemical cartel will be sucked out of the economies of the nations of the world. In the industrialized nations this will result in the tripling of the price of refrigerators and air conditioners—among other indirect, though steep, costs to the consumer. In the developing sector, which will be largely deprived of refrigeration facilities, the CFC's ban will result in the death of hundreds of millions of human beings. But, the authors assert, this is fine with the radical environmentalists and their oligarchical backers—such as Prince Philip of Britain—who are the leaders of the global depopulation lobby.

Finally, *Holes in the Ozone Scare* goes beyond presenting this frightening analysis. The book proposes an alternative: the overthrow of the murderous environmentalist regime now ruling our schools, government institutions, and media, and its replacement with an organized effort to accomplish global economic development to the benefit of all nations and people. The global Great Projects infrastructure-building program advocated by presidential candidate Lyndon LaRouche is laid out in detail here.

Thus, the authors conclude on the optimistic note: "With our work on these great projects here on Earth under way, man can then raise his eyes to the Heavens, and begin the great project of space exploration and colonization begun in the 1960's, but sadly aborted. Eventually we shall carry out great projects on Mars, to transform it from a dead desert into a beautiful garden, fit for billions of human beings.

"What honest nature-lover could object to that?"

—Christina N. Huth

Witte: Eurasian Development vs. the Versailles System

Currently, the world is facing the worst strategic crisis of the century. That crisis is not a little tied up with the events of the 1862-1915 period, which was the span of Count Sergei Witte's active political life within the Russian Imperial government under the Romanovs. Witte was more than an "actor" in those events: strategically speaking, he actively organized against the creation of the Versailles System, which was crystallized from 1914 to 1918, but had its roots much earlier than that. Witte, as one of the great statesmen of Europe, worked to move Eurasia in a direction away from war, and towards a lasting and progressive peace. Consequently, the publication of his complete *Memoirs* in English, is a welcome event, particularly for those who are trying to understand how the world got into its current mess and what might be the way out of it. And, of course, it is indispensable for Russians who are now struggling with the question of "whither Russia?" in the coming weeks and months.

This first full-length English edition of the *Memoirs*, has been ably translated by the noted historian Sidney Harcave.

Witte tells his story, not, as Harcave's footnotes would try to persuade us, with an eye to self-aggrandizement, but with an eye to posterity. By the time the *Memoirs* were written (1907-1912), Witte could see where the follies of Czar Nicholas II were leading, and he also could see World War I looming on the horizon. His hope was, that by writing the *Memoirs*, he would not merely set the record straight regarding his role in Russian government, but that a future generation might learn from them.

The *Memoirs* have as their continuing theme, the difference between policies which lead to war, and those which can lead not only to war avoidance, but to an economic Grand Design for the entire land area known as Eurasia.

Witte's ability to make proposals on

such a grand scale to the various Czars, to Bismarck, to Kaiser Wilhelm, to the French, and to anyone else who would listen, was due to his mastery of the economics of the American System through his study of the works of Friedrich List, which he also translated into Russian. Although Witte is best known for his proposal for a railroad system which would extend from Paris to Vladivostok, and for the planning and construction of the Trans-Siberian Railroad, his discussion with Kaiser Wilhelm demonstrates the quality of thought which Witte exercised in his diplomacy:

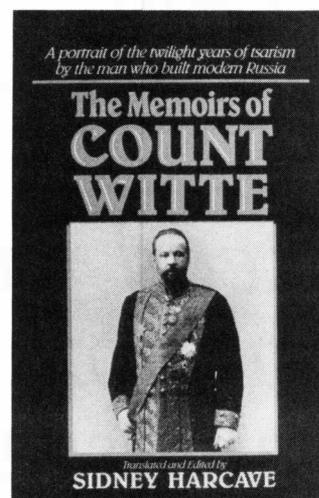
"Imagine, Your Majesty, the European countries united in one entity, one that does not waste vast sums of money, resources, blood, and labor on rivalry among themselves, no longer compelled to maintain armies for wars among themselves, no longer forming an armed camp, as is the case now, with each fearing its neighbor. If that were done, Europe would be much richer, much stronger, more civilized, not going downhill under the weight of mutual hatred, rivalry, and war.

"The first step toward attaining this goal would be the formation of an alliance of Russia, Germany, and France. Once this were done, the other countries of the European continent would join the alliance."

Unfortunately, Witte's program was not heeded, either by the Kaiser or by the Czar, and soon Europe was on the path to World War I.

Witte also gives us an insight into court life, and how the creation by Nicholas II of a reactionary court camarilla based on favoritism and personal prejudice—something which, Witte notes, neither Alexander II or Alexander III would have tolerated—led Russia's last Czar to make the decisions which resulted in tragedy both for his own family and for Russia.

The court camarilla, as reported by Witte, had Nicholas' tacit approval for its anti-Jewish pogroms, as well as its assassinations and attempted assassinations against leading figures who



The Memoirs of Count Witte
translated by Sidney Harcave
M.E. Sharpe, Armonk, N.Y., 1990
885 pages, hardbound, \$39.95

had in some way displeased either the extreme right or the Czar. It was this grouping which also played on Nicholas' personal vanity, to convince him that Witte was out to depose him and take over as prime minister of a constitutional government. The word "constitution" was such anathema to Nicholas, that when Nicholas did agree in the aftermath of the 1905 Revolution to certain reforms, Witte had to call the first attempted Russian constitution, "Fundamental Laws." Even then, Witte knew Nicholas would take the first opportunity he had, to either weaken those laws, or renege on them completely.

It is not often that the memoirs of a great statesman, one as self-conscious about his responsibility to his nation and the world, as well as to posterity, as Witte, are made available in such an extensive form. Witte's method of solving Russia's problems and his profound commitment to peace based on economic development for the world, are a lesson to be learned by those searching for solutions in a world in which the British-inspired Versailles System no longer functions.

—Denise Henderson

The American Renaissance has begun . . . At the Schiller Institute! Just as in the 15th century, publication is at the center of this Renaissance. Here are some of our recent offerings.

Read them and Join the Renaissance!

Friedrich Schiller: The Poet of Freedom

Three volumes of new translations by
Schiller Institute members

Selections include:

- William Tell
- Don Carlos, Infante of Spain
- The Virgin of Orleans
- On Naive and Sentimental Poetry
- On Grace and Dignity
- The Aesthetical Letters
- The Ghost Seer
- Ballads and Poetry

Vol. 1: \$9.95 retail.

Vol. 2: \$15.00 retail.

Vol. 3: \$15.00 retail.



To Order

Ben Franklin Booksellers

107 S. King St.
Leesburg, VA 22075
ph.: (800) 453-4108
fax: (703) 777-8287

Visa and Mastercard accepted

Shipping:

- mail
- \$1.75 first book
- .75 ea add'l book
- UPS
- \$3.00 first book
- 1.00 ea add'l book

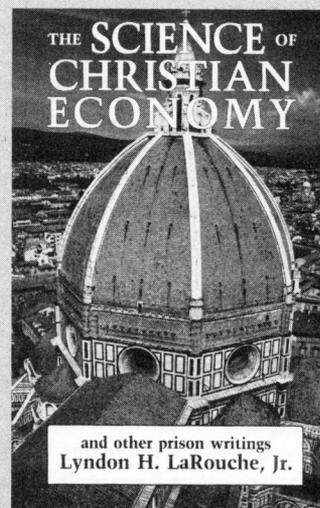
The Science of Christian Economy and other prison writings

by Lyndon H. LaRouche, Jr.

In this work, Lyndon LaRouche, economist, statesman, and political prisoner, presents the means by which humanity may emerge into a new Golden Renaissance from the presently onrushing dark age of economic, moral and cultural collapse.

Includes
In Defense of Common Sense,
Project A, and
The Science of Christian Economy.

\$15 retail.



Bridge Across Jordan

by Amelia Platts Boynton Robinson

"An inspiring, eloquent memoir of her more than five decades on the front lines . . . I wholeheartedly recommend it to everyone who cares about human rights in America."

—Coretta Scott King

For her courage and leadership over 50 years in the civil rights movement, Amelia Robinson was awarded the Martin Luther King, Jr. Foundation Freedom Medal in 1990. This is the story of her life.

\$10 retail.

Bridge Across Jordan



Amelia Platts
Boynton Robinson

—Pre-Publication Notice—

A Manual on the Rudiments of Tuning and Registration

Vol. 1: Introduction and The Human Singing Voice

This book is designed to create a new generation of Beethovens—watch this magazine for news of its arrival!

‘At Present We See Indistinctly, As in a Mirror, But then Face to Face’

Rembrandt’s “Self-Portrait as the Apostle Paul,” shown on the cover, was painted in the year 1661. It is clear from this self-portrait, among numerous other paintings Rembrandt did of the Apostle, and from the fact that he named his only son Titus after St. Paul’s assistant, that the painter very much identified his own creative mission in life with that of the Apostle Paul. In this painting, it is as if the painter were saying that he conceived his activity as an artist, as dedicated to the same purpose as that which St. Paul fulfilled in writing his epistles.

Through his decision to portray his own creative activity to his viewers as in imitation of St. Paul, Rembrandt communicates an array of thought-objects, the ordering of which leads the viewer ultimately to a higher thought-object, that is, the necessity to imitate God. In his epistle to the Ephesians, St. Paul calls upon his readers to imitate him in his imitation of Christ, the Son of God: “So be imitators of God, as beloved children, and live in love, as Christ loved us and handed himself over for us as a sacrificial offering to God for a fragrant aroma.” (Eph. 5:1).

The process of perfection through the imitation of Christ is communicated in the painting primarily through the contrast of light and darkness. In Ephesians, Paul writes, “For you were once darkness, but now you are light in the Lord. Live as children of light, for light produces every kind of goodness and righteousness and truth.” (Eph. 5:8-9)

In the painting, Rembrandt’s face is illuminated by a light which descends from the upper left-hand corner. The light also shines on the book which Rembrandt as St. Paul is holding, and in which he is writing the truth revealed to him by God: that we are justified by faith working through love and that without love we are as nothing.

Throughout the New Testament, as also in the works of classical Greece, the image of light is used to represent God’s love metaphorically. Thus, although the source of light in the painting—God—is invisible, it is through that which God has created in the visible domain, as Paul points out in his epistle to the Romans, that we are led to the unseen, to “that real, unseen universe, hidden behind the metaphorical imageries of our sense experience,” as Lyndon LaRouche writes in *On the Subject of Metaphor*. Thus it is that Paul writes in his first epistle to the Corinthians, “At present we

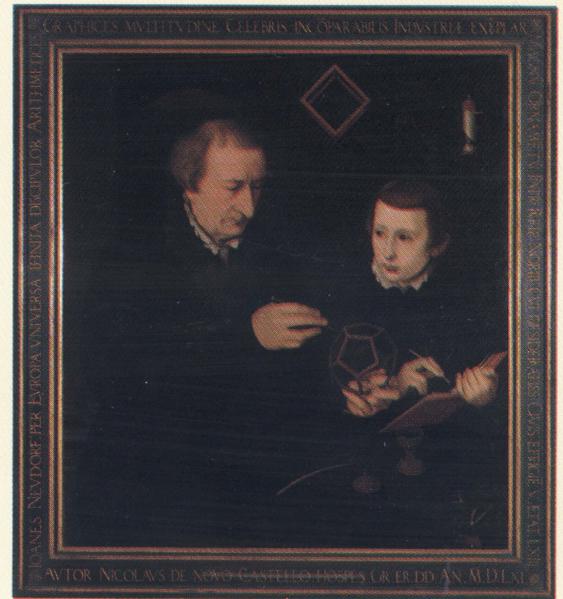
see indistinctly, as in a mirror, but then face to face.” (1Cor. 13:12)

If the viewer imagines Rembrandt looking at his own image opposite him in his self-portrait, he sees that Rembrandt is portraying himself as in a mirror—which is, literally, the only way an artist can paint a self-portrait. Rembrandt is looking at God as He is reflected indistinctly in his own face, insofar as he himself, through imitation of Christ in St. Paul, is in the living image of God.

—William F. Wertz, Jr.

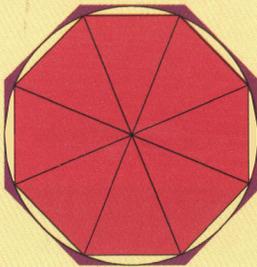
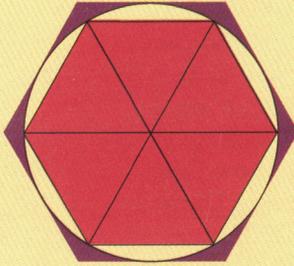
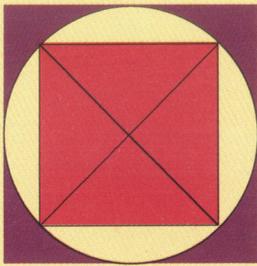
The Essential Subjectivity of Science

In Nicolaus Neufchatel’s “Portrait of Johannes Neudorfer and His Son” (1561), the father instructs his son in the geometry of the dodecahedron, from whose construction are derived all five Platonic solids. In *On the Subject of Metaphor*, Lyndon LaRouche uses the example of geometry to



Germanisches Nationalmuseum

demonstrate that it is human creativity, which is the determinant of scientific truth. Of the significance of the Platonic solids, and the dodecahedron in particular, LaRouche writes that, “the Golden Section is located as a *necessary*, (intrinsic) metrical characteristic of negative spherical curvature, as nothing other than the characteristic distinction of the spherical generation of a subsumed, constructed dodecahedron . . . [T]he *spherical action*, of different, higher species than any polyhedron, bounds externally, and thus determines, the constructible existence and metrical characteristics of the species of polyhedra in general.”



On the Subject of Metaphor

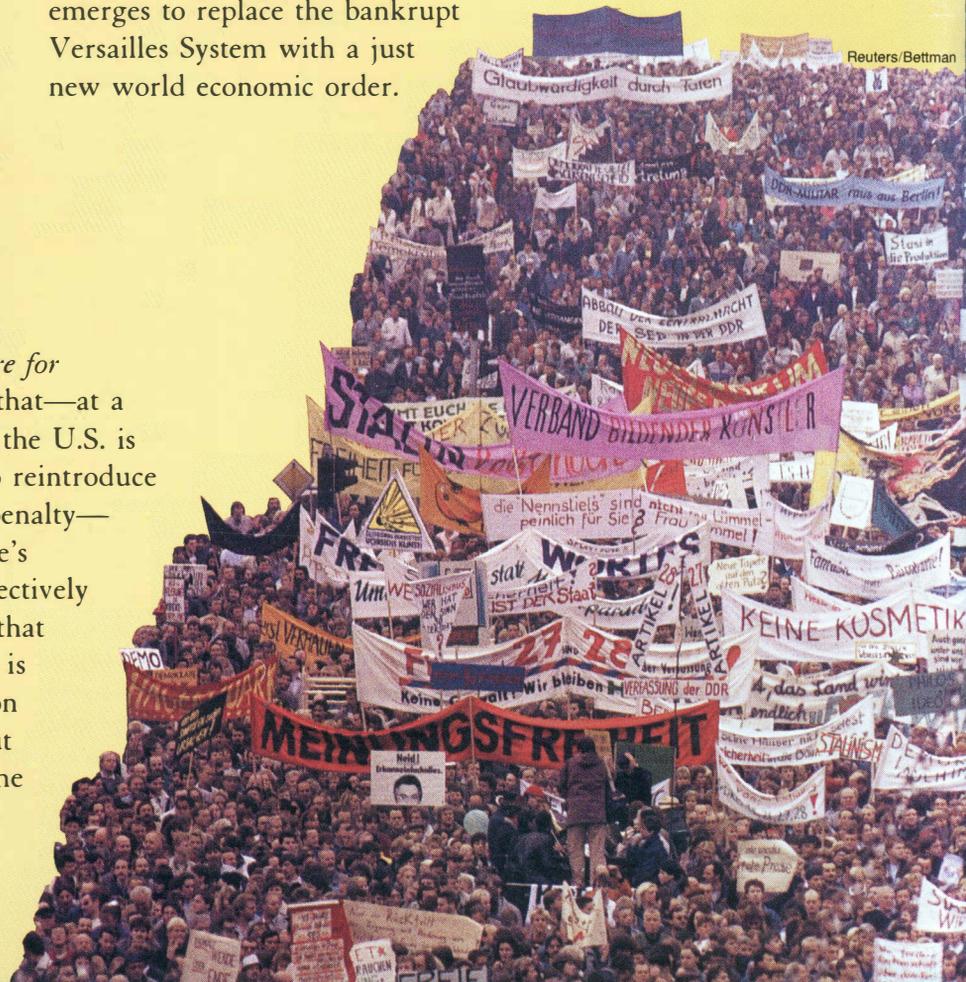
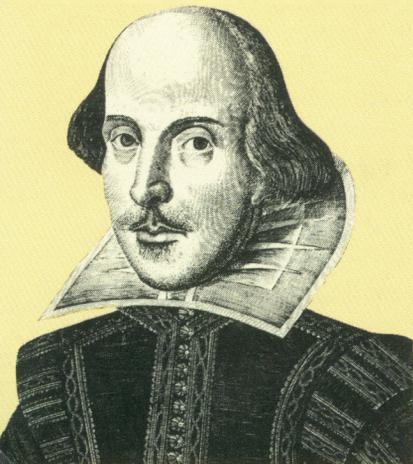
Addressing the damage done to the mental capacity of our citizenry over the last twenty-five years, Lyndon LaRouche demonstrates in this ground-breaking essay why all communication relating to significant ideas is necessarily metaphorical. "We cannot say what we mean; but we can render our conceptions . . . intelligible to other minds, by aid of a rigorous regard for the fact that information so-called is never more than metaphor."

Why We Need an International Coalition For Peace and Development

More than two years have passed since the peaceful revolutions in Eastern Europe. Was the hope that filled the people who streamed into the streets chanting, "We are the people!" merely an illusion? No, answers Helga Zepp-LaRouche, founder of the Schiller Institute. The peaceful revolution must now enter a phase in which a world coalition emerges to replace the bankrupt Versailles System with a just new world economic order.

'An Angelo for Claudio, Death for Death?'

In his review of Shakespeare's *Measure for Measure*, Paul Gallagher emphasizes that—at a time when the U.S. is hell-bent to reintroduce the death penalty—Shakespeare's comedy effectively establishes that true justice is based not on revenge, but rather on the Christian concept of mercy.



Reuters/Bettman