

FIDELIO

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China's Three Gorges Dam Project

The most spectacular Great Project in China is the construction of the Three Gorges Dam on the giant Yangtze River. The taming of the Yangtze will eliminate the threat of flood disasters to 15 million inhabitants living in endangered areas, where floods have repeatedly claimed tens, or even hundreds of thousands of lives in the past. In addition to its being the largest hydroelectric project in the world,

the dam will extend ship transport on the Yangtze by 700 km through a five-level system of locks, and will provide water, via canals, to the dry north of the country.

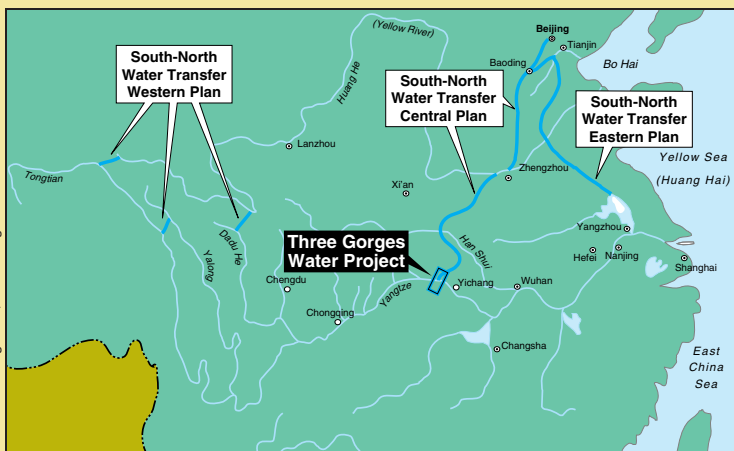
As early as the pre-war years, Guomindang leader Chiang Kaishek sought advice from experts of the Tennessee Valley Authority (TVA) concerning the Three Gorges project. In fact, the Three Gorges Dam is as



Xinhua Photo/Xue Tiejun

important for the development of China, as the TVA project of the 1930's was to the United States. President Franklin D. Roosevelt succeeded in pushing the TVA project through against major opposition from the international financial oligarchy, and China will require defeating today's British-run I.M.F. system.

Three Gorges Dam project construction sites: Top left, Yingzizui water treatment plant, provides drinking water for the area's left bank. Top, early stage of excavation, left bank of river. Bottom, temporary (initial stage) ship lock.



EIRNS/John Sigerson, Göran Haglund

Planned water diversion projects in China.

Artist's depiction, Three Gorges Dam.



Three Gorges Project Development Corporation

FIDELIO

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

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

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On the Cover
Su Han-ch'ên, *Winter Play* (detail) (c.1130-60's). SEE page 89 for discussion. (National Palace Museum, Taipei, Taiwan, Republic of China)

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It Is the Poets Who Shape History

This issue of *Fidelio* features the political initiatives of the Schiller Institute on behalf of a New Bretton Woods conference and the construction of the Eurasian Land-Bridge; while, at the same time, it emphasizes the quality of mind required in the arts and sciences to bring about the universal Renaissance needed to realize these undertakings.

In February, at its semi-annual conference, the Institute adopted an “Urgent Appeal to President Clinton To Convene a New Bretton Woods Conference,” to replace the bankrupt International Monetary Fund-dominated monetary system with a new system committed to fostering economic development. The Appeal, which is reprinted immediately following this editorial, calls for the building of the Eurasian Land-Bridge, as the cornerstone of a global economic development program which can bring peace to every corner of the world.

Schiller Institute founder Helga Zepp LaRouche—whose efforts have earned her the appellation “the Silk Road Lady”—has made clear in speeches delivered over recent months in Washington, D.C., New York, Vienna, Stuttgart, Munich, and Rome, that the construction of the Eurasian Land-Bridge is the most important strategic question facing the world today. Its construction, initiated by China, is key to overcoming the underdevelopment of the so-called Third World; to stopping the genocide in the Great Lakes region of Africa; and to bringing an end, forever, to the power of the financial oligarchy centered

today in the British (Commonwealth) Empire.

In this century, two World Wars and the Cold War were essentially caused by the strategy of the British Empire—based upon the geopolitical theories of Alfred Milner and Halford Mackinder—to prevent the development of what they referred to as the “Eurasian heartland.” Today, the geopoliticians are intent upon creating a “clash of civilizations” between the West, China, and Islam, which, if successful, would lead the world into a New Dark Age. The irony is, that the West, rather than playing the historical role appropriate to its Platonic-Christian, Renaissance heritage, is collapsing, and is attempting, as it collapses, to impose its wrong-headed policies on the rest of the world; whereas China, having recognized the errors of the Maoist Cultural Revolution, has now emerged as the greatest contributor to global peace based upon economic development, the principle so eloquently expressed in Pope Paul VI’s encyclical *Populorum Progressio*.

As Zepp LaRouche emphasizes, if the world is to have a positive future in the immediate period ahead, then the West must imitate China, drawing conclusions analogous to China’s rejection of the Cultural Revolution, to correct the false axiomatic assumptions which have underlain its own disastrous policies of the last thirty years.

This year is the 200th birthday of the great composer Franz Schubert, and we have devoted much of this

issue to the principles of Classical composition upon which such a Western political policy correction must be based. In 1992, the Schiller

EDITORIAL

Institute published Book I of *A Manual on the Rudiments of Tuning and Registration*. This first volume addressed the basis for music in “that mode of use of the human singing voice, the which combines the Florentine *bel canto* method of voice-training, with the development of well-tempered polyphony by Johann Sebastian Bach.” Here, we present Lyndon LaRouche’s “Behind the Notes,” the Introduction to the forthcoming Book II—the volume which will address the “application of those principles of vocal polyphony to performance of those Classical compositions, and perfected folk-song, both vocal and instrumental, which conform to the standard of *motivic thorough-composition* which Wolfgang Mozart developed, in Vienna, during the first half of the 1780’s.”

The problem in the West today, is, that our political

and cultural institutions have accepted the false, axiomatic assumption of entropy. It is this false assumption of entropy, which underlies the paradigm shift of the last thirty years, towards a post-industrial, Malthusian world order, and the pervasive “culture of death” that grips the West. It underlies the very concept of geopolitics, which posits an “inevitable,” Hobbesian “clash of civilizations,” rather than mankind’s building upon the universality of the human spirit, through the method of *agapē*.

The beauty of LaRouche’s “Behind the Notes,” lies in its identification of the agapic, anti-entropic quality of creativity, which is essential both to Classical music and other art forms, and also to progress in science, technology, and society in general. We violate this quality of agapic anti-entropy at our own peril, because it is this quality of “upward-directedness,” which is the very nature of the universe and of man himself. As LaRouche writes: “This emotional quality, termed *agapē*, is the distinctive essence of the human individual, the creative power which Moses’ Book of Genesis identifies as man and woman made in the image of God, the qualities which the Latin of the Augustinian tradition names *imago Dei* and *capax Dei*.” For this reason, all human progress—as against the forces of entropy which have destroyed numerous societies throughout history—must arise from no less a well-spring than the nurturing of Classical poets and musicians. The question of musical composition, therefore, is no impractical diversion: Reviving great Classical art is the key to preventing a New Dark Age.

Since its very first edition, printed December 1991, *Fidelio* has devoted itself to the exoneration of Lyndon LaRouche and his political associates, five of whom still remain incarcerated in the Commonwealth of Virginia, serving prison sentences of between twenty-five and seventy-seven years. The very name *Fidelio*, was selected because LaRouche, like the figure Florestan in Beethoven’s great opera, was imprisoned for no other reason, than that he “dared to speak the truth boldly”—and had therefore accumulated powerful enemies.

The fight for Lyndon LaRouche’s exoneration has now reached a critical inflection point. Despite continuing efforts to cover up the corruption in the Department of Justice, on April 30, a statement signed by eighteen prominent U.S. state legislative office-holders was entered into the official record of the D.O.J. oversight hearing conducted by the U.S. Senate Judiciary Committee. Based upon the findings of the Mann-Chestnut

The Maid of Orleans

The noble image of mankind to sully,
Contempt doth roll thee in the deepest dust;
Wit wagheth war eternally on Beauty,
In angel and in God it holds no trust;
To rob the heart o’ her treasures it intendeth,
Illusion it besets and faith offendeth.

Yet, like thyself, from childlike generation,
A shepherdess like thou of piety,
To thee doth poetry extend her godly sanction,
To the eternal stars she swings with thee;
Within a halo she doth thee encircle—
The heart form’d thee! Thou wilt live on immortal.

The world doth love, the radiant to dirty
And the sublime to drag i’th’ dust below;
Yet have no fear! There still are hearts of beauty,
Which for the high, the glorious do glow.
The noisy market Momus may make mirthful,
A nobler mind loves forms which are more noble.

—Friedrich Schiller

Independent Commission, which had investigated D.O.J. corruption in 1995, the statement—entitled “Enough is Enough! Clean Out Department of Justice Corruption Now!”—demands that the Senate Judiciary Committee hear all the relevant evidence in the cases investigated by the Commission, including “the railroad of Lyndon LaRouche and his associates; a case that former U.S. Attorney General Ramsey Clark described as ‘representing a broader range of deliberate cunning and systematic misconduct, over a longer period of time, utilizing the power of the Federal government, than any other prosecution by the U.S. government, in my time or to my knowledge.’”

How will we win LaRouche’s exoneration, which is so crucial to the policy transformations identified above? At a recent seminar aimed at sparking continent-wide opposition to the British-run genocide now sweeping Central Africa, Lyndon LaRouche provided the answer: “Mankind is often pushed by calamities, to act. Otherwise the universe acts, to purge itself of the disease that civilization has become. This is the time to act. We must see what is required from the mountain-top, and use our knowledge of the very horror, as a *lever* to force people to discover the passion to do what is necessary, to save all humanity.”

Urgent Appeal to President To Convene a New Bretton

The following Appeal to President Clinton was adopted by acclamation at the Presidents' Day conference of the Schiller Institute and International Caucus of Labor Committees, meeting in Reston, Va. on Feb. 15-17, 1997. The first two signers of the call are the founder of the Schiller Institute, Helga Zepp LaRouche, and Ukrainian economist Natalya Vitrenko, member of the Supreme Rada (Parliament) of Ukraine. The Schiller Institute has been circulating the call worldwide for endorsement by government and other leaders; to date, two former Presidents, Gen. (ret.) Joao Baptista Figueiredo, former President of Brazil (1979-1985), and Godfrey Binaisa, former President of Uganda (1979-1980), have signed the appeal, along with prominent individuals from the U.S. and around the world. [SEE page 73 for news coverage]

The world economy, with the exception of China, is faced with an accelerating collapse of industrial capacity and the skyrocketing of unemployment, which has led to a political mass-strike process, shaking the foundations of many governments and social institutions around the world.

The unavoidable bursting of the international derivatives bubble, or any relevant political event, could trigger a chain-reaction of stock market crashes and banking crises in many countries, leading toward the vaporization of the international financial system within a matter of days. The political, social, and military consequences of such a systemic crash would be incalculable.

Meanwhile, the tragedy of the so-called I.M.F. reform policies in the former Soviet Union is now playing out, in the form of a monstrous collapse of production, a demographic disaster, and an unprecedented criminalization of society, which has resulted in an even worse and more rapid catastrophe than has already occurred in Ibero-America and Africa. If the present course of these international policies is not changed, entire nations will vanish from the map of the Earth, as is already demonstrated in Africa. And, as the conditions in Bulgaria and Albania illustrate, even Europe can plunge into a new dark age in a very short time. Germany, for example, has reached de facto the same level of unemployment as

when Hitler came to power.

Thus, many governments, parliamentarians, and leaders of social institutions are confronted with the unacceptable dilemma, that if we are to fulfill the conditionalities of the I.M.F., or such requirements as those of the Maastricht Treaty or the Balanced Budget Amendment in the United States, we would have to act against the most vital interests of the people whom we represent. But the international financial institutions have no right to require that the debt to them be paid with a pound of flesh of each of our citizens.

The U.S. Declaration of Independence states: "When in the course of human events, it becomes necessary for one people to dissolve the political bands which have connected them with another, and to assume among the powers of the Earth the separate and equal station to which the Laws of Nature and of Nature's God entitle them, a decent respect to the opinions of mankind requires that they should declare the causes which impel them to the separation."

In this spirit we say, that not for "one people," but for the peoples of the world, it has become necessary not to dissolve the political, but the financial bands with the presently hegemonic financial institutions.

Clinton Woods Conference

In the Declaration it is further stated: “But when a long train of abuses and usurpations, pursuing invariably the same object, evinces a design to reduce them under absolute Despotism, it is their right, it is their duty, to throw off such Government, and to provide New Guards for their future security.” Such a condition has emerged, threatening to throw our entire human civilization into chaos and barbarism.

Therefore, we appeal to you, President Clinton, to use the Powers of the Presidency of the United States, to convoke, on an emergency basis, a new international Bretton Woods conference, to replace the present bankrupt monetary system with a new one. A global debt reorganization, the establishment of fixed-parity exchange rates and a new set of trade and tariff agreements, are the absolute precondition for stability in world economic and financial relations, which are required for a return to economic growth.

It is also required that sovereign governments have exclusive responsibility for the emission of currency and the creation of credit and that, in the tradition of President Franklin D. Roosevelt’s bold anti-Depression programs, they make available cheap and long-term credit lines for large-scale investments in infrastructure, industry, and agriculture.

The outline of a new world economic system is already taking shape. Led by the initiative of the Chinese government, several countries of Asia are currently engaged in the construction of the “New Eurasian Land-Bridge.” By integrating all of the Eurasian continent economically, a similar “Land-Bridge” development is planned which will soon

also connect the U.S., via the Bering Strait, and Africa, via the Near East, bringing economic development and prosperity to all previously landlocked areas of the world.

As a cornerstone of this global reconstruction program, the economist Lyndon LaRouche has emphasized what he terms the “Machine-Tool Principle.” This principle is the recognition that the economy must be based on the fact, that it is solely the creative reason of the individual which is the source of wealth in society. It is the continued ability of creative reason to formulate adequate hypotheses about the laws of nature, which leads to scientific and technological progress. These discoveries are applied in the form of new, improved machine tools and in upgrading the skills of the labor force, resulting in increasing productivity of the productive process. The global economic reconstruction must therefore put absolute priority on Classical, universal education and the strengthening of the creative powers of the individual.

The building of the Eurasian Land-Bridge as the cornerstone for similar infrastructure and economic programs for Africa, Australia, and the Americas, is the only way that economic development can bring peace and stability to all corners of the world. Such a policy is therefore in the strategic security interest of the United States. It is also in the tradition of the Founding Fathers, as a policy for a community of principle among nations.

We appeal to you with the utmost urgency to take the necessary steps, so that your Presidency does not mark the beginning of a new dark age, but that of a new golden era of mankind.

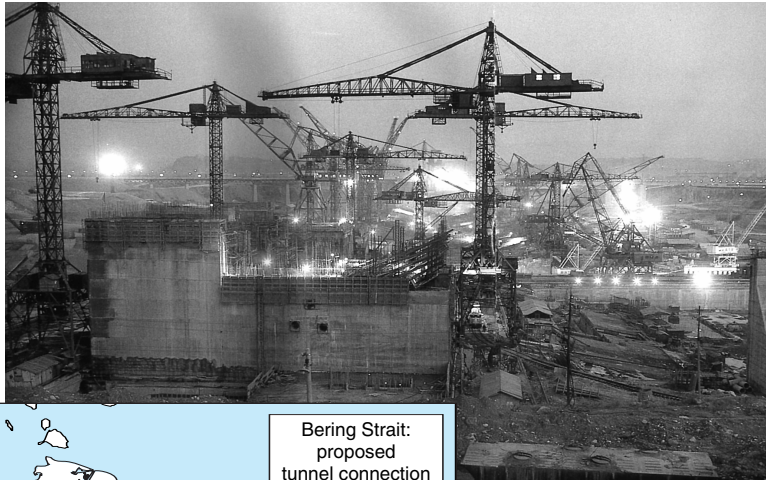
The Eurasian Land-Bridge: The Most Important Strategic Question Of Today

by Helga Zepp LaRouche

No matter what the media say or don't say, the European/Eurasian Land-Bridge is the most important strategic question of today. *The success of the economic integration of the Eurasian continent, on a high-level technological basis, will determine the fate of mankind.* This is not a question far ahead in the distant future; but, considering the different strategic parameters, the question of whether the Clinton administration takes a positive attitude to make the Eurasian Land-Bridge a foreign-policy strategic interest of the United States, to support the success of the Land-Bridge, or remains indifferent, passive, or worse, will indeed determine whether mankind plunges into an incredible catastrophe—of which the developments in Africa give us a small foretaste—or whether instead, we stand on

Construction of a new railway bridge on the Eurasian Land-Bridge rail line in China.





Construction of the Gezhou Dam in China.



FIGURE 1. *The Eurasian Land-Bridge, main routes and selected secondary routes.*

the threshold of the biggest economic miracle in world history.

These alternatives are immediately before us, and the reason this *is* the most important question, is fairly obvious. If you look at the population-density in the world today, you can see very clearly that the largest concentration of the world's population is in China and Southeast and South Asia, with very thinly sprinkled concentrations elsewhere. And this part of the world—South Asia,



Lianyungang Eurasian Land Bridge Working Office

Container port of Lianyungang, at the eastern terminus of the Euro-Asia Continental Bridge.

West Asia, Southeast Asia—is going to be the area of the greatest population growth in the next century.

China currently represents 1.2 billion people. It is presently the most populous nation in the world, and it has had, without any question, the most intense positive economic development of any country on this planet in the last twelve to seventeen years, averaging ten, even twelve percent annual growth.

The fascinating thing right now is that, despite rather hysterical mis-reporting by the international press, the European/Eurasian Land-Bridge, and the economic

This article has been edited from a speech delivered by Schiller Institute founder Helga Zepp LaRouche, to an FDR-PAC policy forum on the Eurasian Land-Bridge, held on Feb. 5, 1997, in Washington, D.C.

The Eurasian Land-Bridge: The End of Oligarchism

The construction of the Eurasian Land-Bridge, as the precondition for the infrastructural and economic integration of the two continents, is key to overcoming the underdevelopment of the so-called Third World, and therefore, implicitly, to the end of oligarchism. It is exactly this potential, which was recognized by the British Empire towards the end of the Nineteenth century, when this integration started to take practical forms. The construction of the Berlin-Baghdad railroad, and the Trans-Siberian Railway from Paris to Vladivostok, were the concrete expression of a policy which was pursued by the French Foreign Minister Gabriel Hanotaux, German industrialist circles around Siemens, as well as the Russian Finance Minister, Count Witte.

The British Empire saw its domination of the seas threatened through the construction of the Land-Bridge, and answered with the geopolitical theories of Milner and Mackinder: Whoever controls the *Eurasian heartland*, would control the world, and with that, the power of *the Atlantic Rim countries* would be broken. Great Britain, and especially Edward VII, Prince of Wales, and later King, reacted with a whole combination of geopolitical destabilizations, to destroy the potential of the Eurasian cooperation. To start, France was maneuvered, through the Fashoda crisis, into, first, capitulation, and, then, the *Entente Cordiale*. Later, Russia, after the Russo-Japanese war, was pulled into the Triple Entente. And, finally, after the Balkan wars of 1912, the chessboard for World War I was prepared, in which the main interest of the British Empire, was to destroy the economic potential of Germany, if possible, forever.

The Versailles Treaty was also completely based on the actions of geopolitics. Germany was supposed to nev-

er recover economically from the draconian reparations payments—at least, not for the entire century—a policy which led not only to the hyperinflation of 1923, but also to the taking of power by the Nazis, which was supported by certain Anglo-American circles, and, ultimately, to World War II. And then, the agreement of Yalta was entirely in the spirit of geopolitics, also: Eurasia was supposed to be divided forever, through the Iron Curtain.

The construction of the Eurasian Land-Bridge, which now has been initiated by China, represents the opportunity to overcome the underdevelopment of Africa and Ibero-America also, through the same land-bridge conception, driving development into the previously non-developed areas of the world.

It is necessary to consider the entire history of the Twentieth century, if one wants to understand the character of the present British anti-China campaign in all of its aspects. Among those, are, on the one hand, the effort of the so-called “Prague Initiative”—Thatcher, Kissinger, Brzezinski, Lord Chalfont, and the Mont Pelerin crowd—to build up China as the new enemy-image after the collapse of the Soviet Union; and, on the other, the sudden epidemic of anti-China books, beginning with Sir Caspar Weinberger’s *The Next War*, up to Samuel Huntington’s *Clash of Civilizations*, and, finally, Bernstein and Munro’s *The Coming Conflict with China*. The effort to pull President Clinton into a “China-gate,” comes from this same design of British geopolitics; as do the efforts of Gerald Segal and the International Institute for Strategic Studies, to promote destabilizations in Tibet; Xinjiang; around the Hong Kong integration; and by pushing Taiwan independence.

It must absolutely be understood, that the entire destiny of mankind in the coming years, and especially in

development of China—and, in a new way, of India, too—has been the most debated topic over the last couple of days at the Davos World Economic Forum.

It is very funny that, for a long time, my husband Lyndon LaRouche was like a lone voice calling in the wilderness, warning of the imminent collapse of the financial system, advocating the Eurasian Land-Bridge, while the international media basically denied *both* realities; not reporting about the true condition of the world financial system; but, equally, absolutely not reporting about the emerging alternative reality, in the form of the

Eurasian Land-Bridge. Now, all of a sudden, at the Davos summit, both realities have popped out, and are on the table. Because, the two issues which were debated there by some of the leading world financial and economic political leaders, were, on the one hand, the imminent financial crash of the speculative bubble (possibly triggered by the crisis in Japan, or other factors)—the systemic crisis of the system as a whole—and, on the other, the Eurasian Land-Bridge. In fact, some people there were completely annoyed by the self-confidence with which the Chinese representative and the Prime

the next century, depends on a positive relationship between the United States and China. Because the collaboration of these two vast nations is crucial, if a successful reorganization of the bankrupt world financial system is to occur. It must also be understood, that the reason that the Western financial system is collapsing, is due to a policy which was based on the wrong axioms of the post-industrial utopia over the past thirty years—and this, in contrast to China's being presently the only country in the world whose economy is prospering.

It is most useful to study the fact that China is presently the only country in the world, which drew out the consequences of its having based its policy, for a while, on wrong axioms—namely, those of the Great Proletarian Cultural Revolution, which lasted from 1966 to 1976. Under the leadership of Deng Xiaoping and the present Chinese government, China consequently corrected those wrong axioms; and therein lies one of the reasons for its present success. If the West would draw similar conclusions, and correct its wrong axioms of the past thirty years also, then it, as well, would have the opportunity to overcome its current problems.

The future of the world will be a positive one, only if the United States, and the West in general, return to the axioms of its 2,500 years of Platonic Christianity, and collaborate with China, which is presently searching to find the best in its 5,000-year history, especially the Confucian and neo-Confucian tradition.

The success of the Eurasian Land-Bridge would mean the end of geopolitical manipulation forever—and that is exactly what is needed.

—HZL

Minister of India presented the development perspectives of their respective countries.

The Coming Crash

Let me first, give you a taste of what the debate is, especially in Europe, about the imminence of the financial crash, because I don't think that those of you who watched President Clinton's State of the Union address last night, got the full flavor of what this debate is right now.

The director of the Institute for International Economics in Washington, C. Fred Bergsten, did make a speech at the Davos conference, warning of the new dangers to the financial system coming from Japan, triggered by the yen crisis, plus the overall economic situation in Japan, which would pose new threats to the international system. He said there was the danger of a vicious circle, a weakness of the financial system in Japan, combined with a restrictive Japanese monetarist policy, which could lead to a continuous fall of the yen. Panic selling on the stock market could hit Japan, and then banks would have no other choice than to liquidate their foreign assets. This would then have devastating consequences on foreign markets. And then, in addition, you could have new Mexico-style crises in the emerging markets at any moment, most likely in Brazil and Argentina, and that could then trigger a chain reaction all over the world.

His was not the only voice. Simultaneously, you have European conservative financial dailies, like the *Neue Zuercher Zeitung*, which is *the* paper of Swiss banking and conservative circles, on Jan. 24, asking in a big banner headline: "Are the Stock Markets Heading for a New Crash? Comparison of the Present Development with That of 1929 and 1987." In this article, Prof. Gerhard Aschinger, of the University of Freiburg, describes his scenario for the coming crash, which he divides into six phases, leading up to a market crash. He says, that we are presently in the fifth phase, passing into the sixth. The fifth phase is characterized by euphoria and irrational behavior by those people speculating in the market, in terms of mass psychology. Then, in the sixth phase, a panic erupts, and the bubble bursts.

According to Prof. Aschinger, the transition from the fifth to the sixth phase, can be triggered by events and news which are not so important in themselves, but, because they lead to an upset in the expectation of making just a little bit more profit from speculation, mass psychology will then turn into a panic. He says, that the fact that the Dow-Jones has risen by seventy percent from the beginning of 1995 to the end of 1996, can only be compared to the speculative bubble of the 1927-29 period. And he also completely agrees with Lyndon LaRouche, that the longer the bubble continues to grow, the greater will the crash implosion be.

These are not individual voices. Here are some more, to show you that there is currently an entire chorus of people warning about the impending crash—something which, up until recently, only LaRouche and our organization said.

- On Jan. 15, in Frankfurt, the president of the German savings and loan association, Horst Koehler, warned that, overnight, waves of chaotic currency speculation

could erupt.

- On Jan. 19, at a seminar of the Protestant Academy of Tutzing, the former chief economist of the Bavarian Hypo Bank, Volker Hoelterhoff, said that the world financial markets are incredibly endangered.
- The arch-monetarist of Deutsche Bank, Norbert Walter, said that the world financial markets are decoupled completely from the real economy. Especially dangerous are the derivatives, and the breathtaking volume of these derivatives is absolutely frightening.
- On Jan. 20, the *Frankfurter Allgemeine Zeitung* predicted that the stock market hype in New York and in Europe, is nothing but a buying spree predicated on the assumption that the party will soon be over.
- On Jan. 21, in *Le Monde*: “Is the financial world going up in flames?” They have a three-page supplement on the danger of a financial blowout, basically saying that, “During the first nine months of 1996 alone, \$1,195 billion of stocks and bonds were issued.” That is, \$1.1 trillion worth of stocks and bonds were issued; in which context, they quote the U.S. stockbroker Charles Schwab, saying, “How can anyone not tremble when imagining the consequences of the eventual brutal displacement of such masses of capital?”

This gives you the setting, of why there is no way this world will survive, unless we do, very soon, the kind of reorganization LaRouche has proposed; of why we need a new Bretton Woods system; and, of why, after the reorganization of the world financial system, the Eurasian Land-Bridge must be the cornerstone of a global reconstruction of the world economy.

Let me give you, briefly, the history of the emergence of this concept.

LaRouche’s Development Proposals, 1975-1996

In 1975, Lyndon LaRouche gave press conferences in Milan and Bonn, in which he predicted that the present, or then-existing, international monetary system of the I.M.F., would inevitably go bankrupt, and should be replaced by a different credit-creating institution, namely, an International Development Bank (I.D.B.), to facilitate long-term, low-interest credit for capital investment and capital-goods transfer from the industrialized sector to the so-called developing sector, in order to overcome the underdevelopment of Africa, Latin America, and large parts of Asia.

This proposal, by the way, was then adopted by the Non-Aligned Movement in 1976, in their Colombo reso-

lution demanding a Just, New World Economic Order.

Because powerful forces prevented this from being implemented, LaRouche proposed, in 1978, that the then-existing European Monetary System become the cornerstone of such a reorganization of the world economy. In 1982, in the famous “Operation Juárez” proposal, he called for an urgent debt reorganization of the Third World, cancelling most of the debt, and a reorganization of the world banking system, centering on the economic integration of the Latin American continent—something which López Portillo, the President of Mexico at that time, began to implement.

Then, in 1984, LaRouche, with associates, wrote a study for the fifty-year development of the Pacific Basin, which proposed large infrastructure programs for India, for the Mekong Delta, for South China, the Kra Canal, and for other places. If you compare the present policies of the Chinese government, and reflect on the shift which China has made away from the policies of the Cultural Revolution, you find at least very interesting parallels between these two approaches.

In 1988, LaRouche made the famous proposal for a soon-to-become-real unification of Germany. He was, to my knowledge, the only Western economist and statesman to predict the collapse of the Soviet Union more than a year before it happened. He was *the only one* who predicted the unification of Germany, at a point when all German politicians called the unification of Germany the “lie of the century,” they said people should forget about it, and so forth. But LaRouche said, “Let’s take a unified Germany, and use Western technologies to develop Poland, and make that the model for how you can transform the economies of the Warsaw Pact with Western means, into a modern economy.”

Then, in 1989, at a point when—you all remember the pictures on TV—the Berlin Wall came down at the beginning of November, people were happy. There was an incredible historical moment. And, I must say, given the fact that I and my friends were on the scene, busily trying to shape history: there was not anyone, not Kohl, certainly not from the U.S. administration, or anywhere else, who had any idea of what to do, of how to capture the historical moment of the fact that the Wall dividing the Eurasian continent would come down for, really, the first time since the Versailles Treaty—except Lyndon LaRouche, who proposed the famous program of the “Productive Triangle.”

The Productive Triangle was the idea of taking the triangular territory between Paris, Berlin, and Vienna, which is about the size of Japan, and which, to the present day, includes the world’s greatest concentration of industrial capacity and skilled labor power (it goes

LaRouche's Proposals for World Development Based on Monetary Reorganization, 1975-1997



Since 1975, Lyndon LaRouche has devised successive programs for global economic development, based on a new international monetary system, to rescue the nations of the world from the death-grip of the oligarchy's I.M.F.

through Saxony, Bohemia, parts of the former Czechoslovakia), and combining, for the first time, the industrial centers of France, the Ruhr, Saxony, and Bohemia, into one coherent unit.

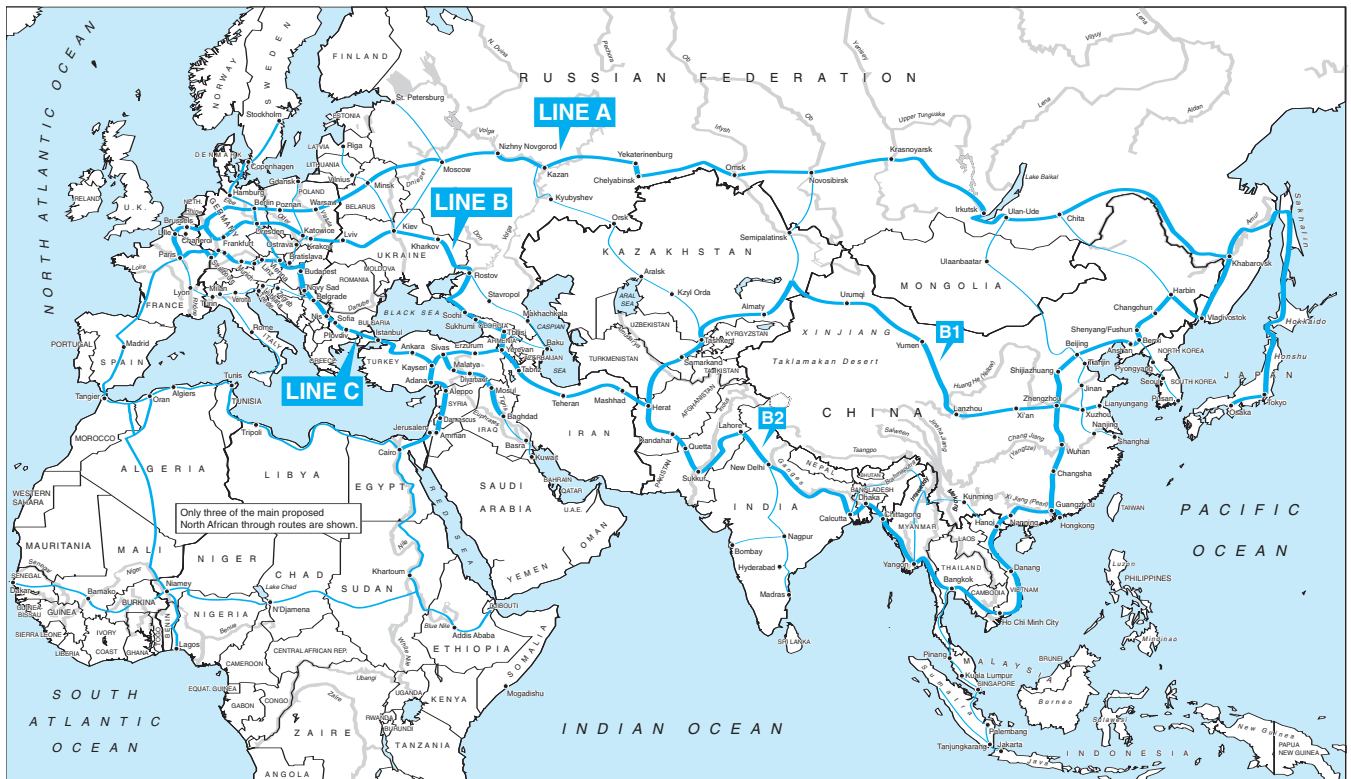
LaRouche proposed that this territory should be upgraded, essentially, through the most modern infrastructure network, including the “maglev” (magnetic levitation) train, the Transrapid, and other investments in cutting-edge technologies, to make it into the most powerful locomotive for the recovery of the world economy.

We put this proposal on the table in November 1989, to the Kohl government, to all the European governments, East and West. We proposed that Eastern Europe should be integrated through development corridors; namely, through the building up of transport lines, one corridor going from Warsaw to Moscow and St. Petersburg, another to Kiev, another to the Balkans and the Black Sea, another to Sicily, bridging into Africa, and another to the Iberian Peninsula, reaching into Africa.

The “Productive Triangle” report was published in all

European languages in 1990. We presented it at many conferences and seminars in Warsaw, Minsk, Moscow, in Kiev, in Poland, in Prague, Bratislava, Vienna, Zagreb, Sarajevo, many other places. What would have been necessary, was an approach whereby the economies of the Warsaw Pact (admittedly not up to world standard) would not have been dismantled, as happened under the I.M.F, but would have been used to build up the infrastructure of Eastern Europe, to provide the absolutely necessary precondition for industrial and agricultural development. Because, one of the inherent flaws of the communist economy, was a complete neglect of infrastructure. The Soviet Union, for example, used to lose forty percent of its agricultural harvest, just owing to a lack of infrastructure. If you remember the famous *Autobahn* in East Germany, it was like a bumpy road; there was the horrible condition of the trains; you remember that lack of infrastructure was one of the key problems.

The idea, was to generate wealth by using up the obsolete technologies of Eastern Europe, to reach the



EIRNS/John Sigerson, Göran Haglund

FIGURE 2. Eurasian rail network plan as first presented by LaRouche's associates in 1992.

condition where, with Western help, one could have a kind of Marshall Plan for the East, using these corridors (about whose functioning I will say more) to drive the economic development of Western Europe into Eastern Europe; to raise the level of the republics of the former Soviet Union, and fulfill their aspirations to join the First World, which is what the people in Ukraine, in Poland, in Lithuania, and in Russia, wanted. They wanted to be part of the advanced West; you all remember this.

Well, we know that history took a different turn. The key banker in Germany who was thinking a little bit in the direction that we were, Alfred Herrhausen of Deutsche Bank, was assassinated. Just recently, Deutschlandfunk, the official German radio, has pointed to certain Anglo-American financial interests as being behind the murder, rather than the Baader-Meinhof gang. (It is also now being argued, that the “third-generation Baader-Meinhof gang” never even existed!) Herrhausen was assassinated for geopolitical reasons, and I’m afraid that everyone of rank in Germany knows the details and reasons for this.

So, Germany, rather than going in the direction we proposed, and taking Europe’s historic opportunity, capitulated to the British campaign of Margaret Thatcher, George Bush, and François Mitterrand (but especially, the British); namely, that if Germany did that, it would become the “Fourth Reich.” So Kohl, rather than taking

the historic opportunity, capitulated, and today we are witnessing a complete collapse of Western Europe, with the end of the Kohl era visible in the very immediate period.

But we, however, continued to organize for the realization of this program.

In 1992, we presented a proposal for a Eurasian infrastructure alliance, because, at that point, the Soviet Union had collapsed. We proposed to combine the Productive Triangle, situated in Western Europe, through infrastructure lines, all the way to China, with Line A being the northern route, the Vladivostok Trans-Siberian Railroad, Line B going through Ukraine, Kazakhstan, China, and Line C from Turkey, Iran, Kazakhstan, China. [SEE Figure 2]

So, we proposed to integrate the Eurasian continent into one unit. And, again, we held many conferences about this, in Moscow and in other places. And, especially because China at that point was still involved in a very dangerous mixture—on the one hand, a state-planned economy, but, on the other, it was also being absorbed into the speculative bubble—we, fortunately, put out many warnings against “financial AIDS” (that is, speculation in the economy), warnings which were published widely in China.

And so, by 1993, the Chinese government consciously turned away from the bubble economy, put more empha-

sis on a dirigist policy, and there was a clear revival of the famous policy of the founder of modern China, Dr. Sun Yat-sen, who, in the 1920's, had written a beautiful document, called the "International Development of China." Figure 3 shows a map he developed, which includes a very elaborated system of integrated railways, water projects, and other infrastructure programs.

Dr. Sun at that point proposed a 100,000-kilometer rail system, one million kilometers of new roads, large canal projects, and projects for the control of the Yangtze and Yellow rivers, the construction of many new cities, all of which are on this map.

Then, in 1993, Jacques Delors, of the European Union, put out his famous Delors White Book, which included practically all the original Productive Triangle transport lines (minus the railway from Munich to Zagreb, because they assumed that the Balkans war would continue for a long time). But, Delors' White Book was completely ignored, and is now hidden somewhere in Brussels, or I don't know where.

In 1993-94, there were further important changes in the economic policy of the Chinese government, to reduce the bubble, both in the real-estate and other markets. They implemented more dirigistic measures, put more stress on the Eurasian Land-Bridge, and announced that they intended to develop the northeast regions of China, and to improve relations between Chi-

na and Europe, as well as the rest of Asia.

In May 1994, the Vice Minister of the State Commission on Science and Technology, Hui Yongzhen, gave an exclusive interview to *Executive Intelligence Review (EIR)*, in which he said that the Eurasian Land-Bridge would be the central feature of China's international and economic foreign policy.

In August of 1994, representatives of *EIR* participated in a conference on cooperation for the development of the Eurasian Land-Bridge, held in Lanzhou. And, in May 1996, I myself, together with a delegation from the Schiller Institute, participated as a speaker at the Beijing conference, which was entitled "The Development of the Economic Regions Along the Eurasian Land-Bridge."

This May 1996 conference was a watershed, because the Chinese government there announced their strategic, long-term perspective for China up through the year 2010, which has now already been written into government legislation. And, they have no less a goal, than to bring the entirety of China up to the level of the rest of the world, as quickly as possible.

Different spokesmen, whose speeches you can read in the Special Report published by *EIR*,* announced that a new era of mankind had started, namely, the Land-Bridge era, where, for the first time in human history, there would no longer be regions of the world which would be disadvantaged because of their geographical

positions; but, because of the Land-Bridge conception, development could be brought into all areas of the globe. And the land-locked areas, especially, would participate in the same kind of advantages which, previously, only maritime cultures, or civilizations based upon rivers, had.

The most important thing was, that this conference, in which I believe thirty-four nations participated, expressed an incred-

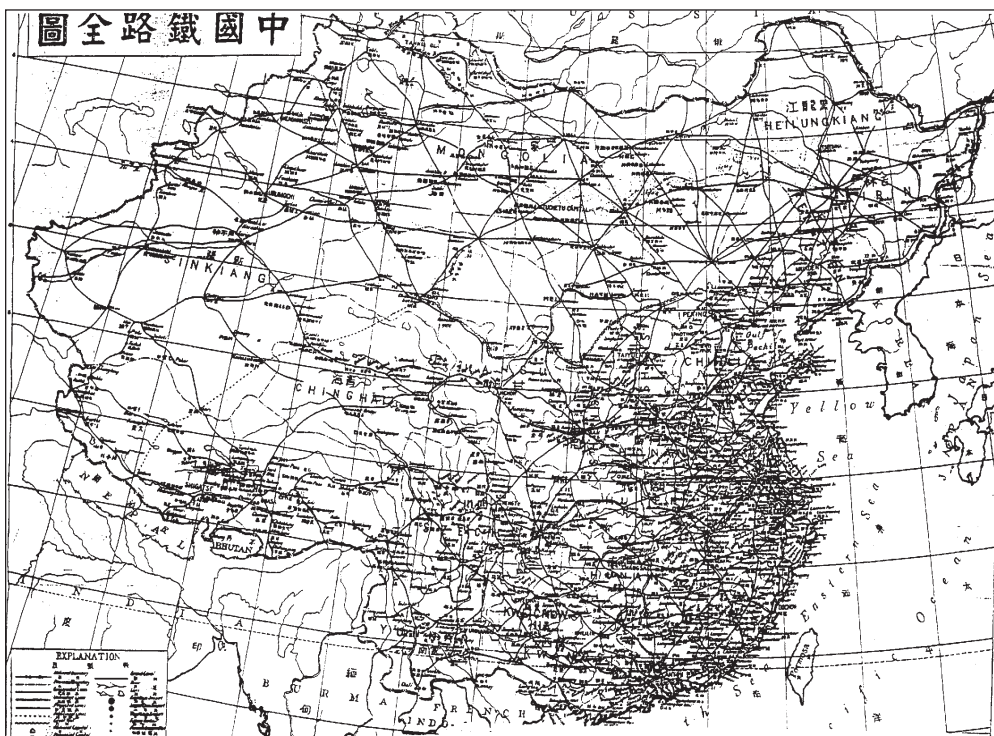


FIGURE 3. Sun Yat-sen's great railway plan.

* *The Eurasian Land-Bridge: The "New Silk Road"—locomotive for worldwide economic development*, EIR Special Report, January 1997, by Dr. Jonathan Tennenbaum et al. (Washington, D.C.: Executive Intelligence Review, 1997).



Three Gorges Project Development Corporation

FIGURE 4. *Artist's representation of the Three Gorges Dam project.*

ible cultural optimism, an optimism which you do not find in the United States, in Europe, and certainly not in Russia. People were just completely filled with the idea that the underdevelopment of mankind was coming to an end. (Although, once again, the international press has not reported this. Except for one or two tiny articles, there has been an absolutely deafening silence about the fact, that the majority of the world had come together to decide to overcome underdevelopment!)

Since that May conference, an incredibly breathtaking development has taken place, namely, a very wide array of economic agreements and deals (again, mostly blacked out by the press). Beginning in January of this year, eight developing countries met in Istanbul, Turkey, forming the so-called D-8, the Development Eight, as a counterweight to the industrialized nations' G-7. This was under the leadership of Prime Minister Erdogan of Turkey, and with the participation of the Foreign Ministers of Iran, Indonesia, Malaysia, Nigeria, Bangladesh, Pakistan, and Egypt, representing, again, about 700 million people. The D-8 announced that they would be open for additional members.

The aim of the D-8, which they announced, was to help its members in their development goals, to function as a partner in cooperation with other organizations, and to be an equal partner with the G-7. This all goes back to a vision of Erdogan's, and Indonesia's B.J. Habibie, the organizer of its "strategic industries" state sector, when both of them studied as young students at the University of Aachen in Germany, where they planned this. (I think this will make you optimistic: Sometimes you have a

good plan, and it takes thirty or forty years, until you are in a position to realize it.)

So, Erdogan, the moment he became Prime Minister, travelled to Iran, Pakistan, and Malaysia. And, in Teheran, he signed an agreement: large pipeline agreements between Iran and Turkey which, for twenty-three years, is supposed to deliver natural gas from Turkmenistan and Iran, to Turkey and beyond. They also agreed on completing the missing railway link between Tabriz and Bonn, and they have planned the founding of this organization, the D-8, for June of this year.

China's Vast Infrastructure Projects

Let me give you a couple of the elements of what is going on in China, why it is currently the world's fastest-developing country, so you will get the sense that, while, on the one hand, we are witnessing the collapse of the financial system, rising unemployment in Europe, collapse of economies, there is, meanwhile, a completely different process underway, where economic development is taking place—a process which actually represents hope for mankind as a whole.

China is presently involved in absolutely gigantic infrastructure projects. These include:

- They want to increase their railroad network, by the year 2000, by 11,000 km, and by 2010, it should be almost doubled, to 90,000 km.
- They want to have completed the first 300 km of a high-speed railway between Beijing and Shanghai,

also by the year 2000.

- They want to increase the road network by 12,000 km.
- They want to build fourteen large subway systems in the next five to ten years; one hundred airports; one hundred ports.
- In the next twenty to thirty years, they want to build two hundred cities with a million or more inhabitants each, because they expect a population increase of 200 million people, and they want to supply adequate housing.
- Gigantic hydroelectric plants.
- Large-scale canal and irrigation projects, to divert water from the water-rich south to the dry north.
- Four nuclear power units come on line in the next years, and many more are planned, and the first High Temperature Reactor (HTR), is under construction.

Then, there are two so-called “Projects of the Century.” One is the famous Three Gorges Dam project. Figure 4 shows an artist’s painting of what it could look like when it’s finished. The major aim of this project, is the taming of the Yangtze River, and also, using the reservoir water gained, for energy and irrigation.

And, the second “Project of the Century,” is the new Eurasian rail development, linking the Chinese coastal area, through their enormous interior regions, to Europe.

There are a whole array of ambitious projects along the Yangtze River, comprising this Yangtze River development project. There are also projects for the Pearl River delta in the southeast; for the region along the Bohai Bay in the northeast, including the Beijing and Tientsin region; and then, the development corridor along the Eurasian rail line, and the modern Silk Road.

But, of all of these projects, the most spectacular is the Three Gorges Dam on the Yangtze River. [SEE Figure 5]

The construction

of this began in 1994, going back to the idea of Dr. Sun Yat-sen. This is a typical example of the hypocrisy of the environmentalists and the World Bank in the West, incidentally, who have loudly denounced this project, claiming that it will hurt the environment, and so forth. Let’s not forget, that in the last flood disaster in this area alone, 33 million hectares of farmland were flooded, 1,000 people died, 800,000 houses were destroyed, and 2.8 million homes were damaged. And that was already after the Chinese government had taken measures to limit the damage; because, in previous centuries, there were many flood catastrophes in which tens, or even hundreds of thousands of people died.

Now, this dam is supposed to be completed in the year 2010, and then the danger of these floods will be eliminated. It will also produce 85 terrawatt hours *per* year of hydroelectric power; but, most importantly, it will eliminate the threat to fifteen million people living in this area. It will cost \$30 billion, but, in the long term, it will be incredibly profitable. The hydroelectric power plant, with a maximum capacity of 17,680 MW, will produce thirteen times the amount a standard nuclear power plant produces. It will be the most powerful hydroelectric plant in the world, and it will be a key element in China’s energy grid, at least until nuclear energy is developed.

Part of the Three Gorges Dam project will be a five-level system of locks, which can lift 10,000 GRT’s (gross registered tons), enabling ships to travel upstream as far

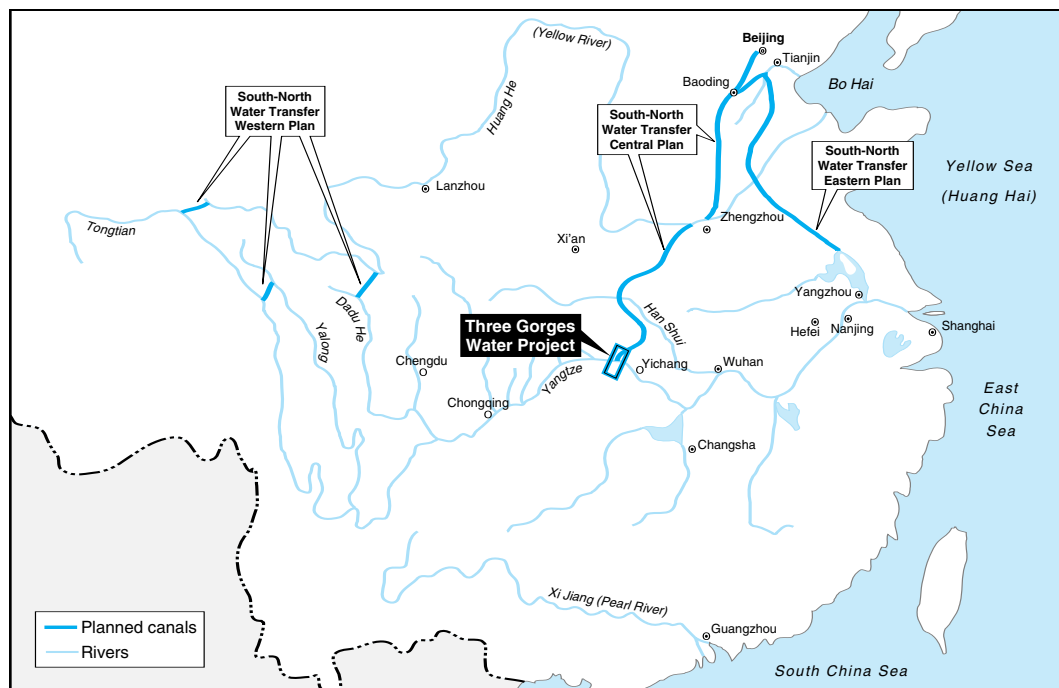


FIGURE 5. Planned water diversion projects in China.

EIRNS/John Sigerson, Göran Haglund



FIGURE 6. China railways and Bohai Strait project.

as the city of Chongqing, which will make 700 km of the Yangtze navigable. Then you will have, in China, a river like the Rhine in Europe, and all of you who have ever been in Germany or Holland, have seen what a beautiful thing the Rhine is, which is completely regulated. You have one ship after another, freighters, passing continuously. Every time my husband sees that, he says, “This is infrastructure! That’s what it should look like!” So, China is going to have its own Rhine very soon.

Through the dam, the volume of freight will be increased from, presently, 10 to 15 million tons, and the cost will be reduced by one-third. Naturally, it will also create a gigantic reservoir. Through a canal which is yet to be built, the water will be transported to the north, for irrigation. This will open up a territory in the north larger than Germany, for infrastructure development and agriculture.

In September 1996, an agreement was signed between the U.S. Tennessee Valley Authority (TVA) and the Chinese government, to collaborate in building these dams, power plants, and canal systems; to tame the Han River, which flows into the Yangtze, through this canal system, into the north, and, also, the Li River, to contain flooding there too.

Through the year 2000, it is also planned to increase, and modernize, and continue the development project at the mouth of the Yangtze, near Shanghai. This will be a \$100-billion investment program, planning a new port, modern communication from Shanghai to Chongqing, a new airport, an oil refinery, two auto plants, a nuclear plant, increasing the steel production to about 48 million tons—which, by then, will be half of Chinese steel production, improving the roads and railways from Shanghai to the cities on the upper Yangtze, building four new railroads alone, and eight new highway bridges over the Yangtze, as well as the 1,300-km high-speed railway between Beijing and Shanghai. [SEE Figure 6]

The region of the Xi Jiang river delta and Guangzhou (Canton), is also one of these development zones. Everything right now is prepared for the economic integration of Hong Kong.

Probably the largest development project in the world right now, is the famous Bohai project. This is the region at the mouth of the Yellow River, in the northeast of China, and it includes four regions: Shangdong, Shaanxi, Hebei, and Liaoning. It includes Beijing and the port of Tianjin, parts of inner Mongolia, and it will probably be the richest development region of the world in a fairly short period of time.

The Bohai region is the center of Chinese industrial concentration. It contains only twelve percent of China’s

The project to divert water from the Yangtze to the Yellow River, through the modernization of an existing canal, makes use of the fact that the mouths of the rivers are not very far from one another. So, you can put the water of the Yangtze through a canal system, feeding the irrigation system of the north of China. This means that, fairly soon, the Gobi Desert will be a blooming garden.

Through the year 2000, it is also planned to increase, and modernize, and continue the development project at the mouth of the Yangtze, near Shanghai. This will be a \$100-

territory, but twenty percent of the Chinese population live there, who are responsible for one-fourth of the country's total production. It is the center of Chinese heavy industry, and the machine-tool industry. It represents the second-largest oil and gas revenues of China, the third-largest chemical production, and a gigantic economic potential which sits, basically, in Beijing's backyard. And, it is also an economic zone which joins together China, Japan, North Korea, South Korea, and the Far East of Russia.

In the coming years, seven large ports are planned to be constructed, or enlarged. To better connect this region to the highlands, many roads and railways are planned. Key to the new development, is a bridge over the Bohai Bay, which will connect the two peninsulas of Shangdong and Liaoning. This will be the largest sea-bridge in the world, 57 km long, and it will shorten the travel distance along the coastlines by 2,000 km. It will be an ideal connection of the northern Eurasian Land-Bridge lines (Lines A and B1 in Figure 2), joining these two different routes.

The project will include several additional bridges and one tunnel. It will be completed by the year 2010. Until then, a modern railroad ferry is being used between Dalian, the main port of Liaoning, and Yantai in Shandong.

In the entire Bohai region, in the next fifteen years, 3,600 infrastructure projects will be built, including roads and railroads, heavy and light industry, nuclear plants, new cities, and so forth. The concept underlying these projects, is nothing less than the idea of connecting the developed coastal regions with the undeveloped interior regions and Europe; and of using the development of the coastal area as a driver to overcome the underdevelopment of the interior

regions.

It should be remembered, that the Eurasian Land-Bridge already exists. In 1990, the 4,131-km-long railroad was completed at Alataw Pass between China and Kazakhstan, and it was opened in 1992 for container transport. The last part of the 11,000-km-long line, going from China through Turkmenistan to Europe, was opened in May 1996: the famous segment between Iran and Turkmenistan.

Turning these infrastructure lines into industrial corridors—and I will explain what that means in a second—is already Chinese policy. It is part of the present Five-Year Plan, and their strategic, long-term planning. This includes the port of Lianyungang, which is located between Shanghai and Qingdao, and which currently represents what one could call the “natural end” of the Eurasian Land-Bridge. Other ports will be built there—



FIGURE 7. Far East infrastructure projects and the Tumen development region.

for example, Rizhao; Qingdao will be modernized, as well as Tianjin and Shanghai, Shenzhen, and Guangzhou (Canton).

The idea is to integrate this existing rail line, with an electricity grid, oil and gas pipelines, and the installation of an optical-fiber net, which will begin operating in April of this year, and will be 27,000 km in length, the longest in the world, connecting Frankfurt in Germany to Shanghai, supplying twenty countries along the way.

The idea is, also, to have industrial projects along this line, to process the rich natural resources along the Eurasian Land-Bridge; petrochemical complexes, for example. For the next twenty to thirty years, the Chinese government has planned the construction, mostly along this line, of two hundred new cities, which is a gigantic project.

A very interesting strategic development project is also located in Tumen, the Tumen Economic Zone. This is a region representing an area of 10,000 sq km at the mouth of the Tumen River, including the border region between Russia, China, North Korea, and Vladivostok, which is the end of the Trans-Siberian Railroad, and is a triangle between Vladivostok, Yanji in China, and Chongjin in North Korea. [SEE Figure 7]

The key is a rail connection from Nanjing in North Korea, to Posiet in Russia, over Chinese territory, to the city of Chita, which will shorten the distance to Europe by 1,700 km. A connection is also planned to South Korea, and this is supposed to be a \$30-billion investment program for the next twenty years, with an Economic Zone composed of a system of ports and industrial production, comparable to Rotterdam in Holland. So, it will be a gigantic port, trade, and industrial complex, obviously for the purpose of peaceful collaboration of the countries involved, which will be absolutely crucial.

Development of Southwest and Central Asia

Now, to look at some of the other pieces of the Eurasian Land-Bridge, namely, the southern corridors. The revival of the old Silk Road as a concept was pushed mainly on the impulse of China and Iran. But, it now involves very active participation of Turkey, the Central Asian republics, Russia, Pakistan, and India. Obviously, the whole concept of what this region is all about, is to be changed from an area of continuous instability, geopolitical manipulation, and so forth, into a region of economic cooperation, to the mutual benefit of all those involved.

On May 13, 1996 in Teheran, there was the opening of the 300-km rail line from Mashhad to Sarakhs and

Tedzhen, with the participation of twelve heads of state, fifty nations, and 1,500 delegates. This concluded the missing link of the transcontinental railroad between China, Turkey, and, therefore, Europe, on the southern route. President Rafsanjani of Iran praised this revival of the historic Silk Route as a “symbol of East-West relations,” the bridge for the region and the world. [SEE Figure 8]

Chinese Prime Minister Li Peng, meeting in Beijing with the Iranian Deputy Foreign Minister, spoke of the creation of the “Silk Road for the 21st Century,” and represented there the extremely close collaboration between China and Iran.

In the meantime, a flood of bilateral and multilateral agreements for the region have been concluded. In August of last year, Prime Minister Erbakan travelled to Iran with 102 Turkish businessmen, inaugurating a new era in Turkish-Iranian relations: a \$20 billion natural gas deal, a new pipeline, new rail lines, the integration of the energy grid, and the fostering of many other projects in the region.

Now, one of the reasons why Turkey, despite all its economic problems, has had relatively interesting economic development in the recent period, was the Southeastern Anatolia Project, which is an area of 75,000 km, which includes 22 dams, 19 hydroelectric plants, and irrigation of an area of 1.7 million hectares. This is planned to increase the national income of Turkey by twelve percent, and it should be noted that all of this was done without international financing, and without international help, but by Turkish engineers alone.

China, in the meantime, in the summer of 1996, gave credits of \$270 million to Iran, to help to build the Teheran subway, with Chinese participation, and put many more projects on the table, to which the Foreign Minister of Iran, Ali Akbar Velayati, showed the policy direction of his government, by saying: “We cannot have a peaceful country in a region plagued by instability, and we cannot have a rich country in a region of poverty.”

So, I think that it is extremely important for the United States, to reconsider its policy towards Iran. First of all, there has been a very important shift in Iran, which I can only compare to the change which has occurred in China. China has very consciously turned away from the Cultural Revolution, and decided to go in the opposite direction, of maximum technological progress, and maximum development of the interior regions. In a similar way, Iran has had its own experience with the revolution, with the war with Iraq, and they, like China, are thinking about how can they accommodate their people, their growing population, which will be 100 million by the year 2000, with appropriate living conditions.

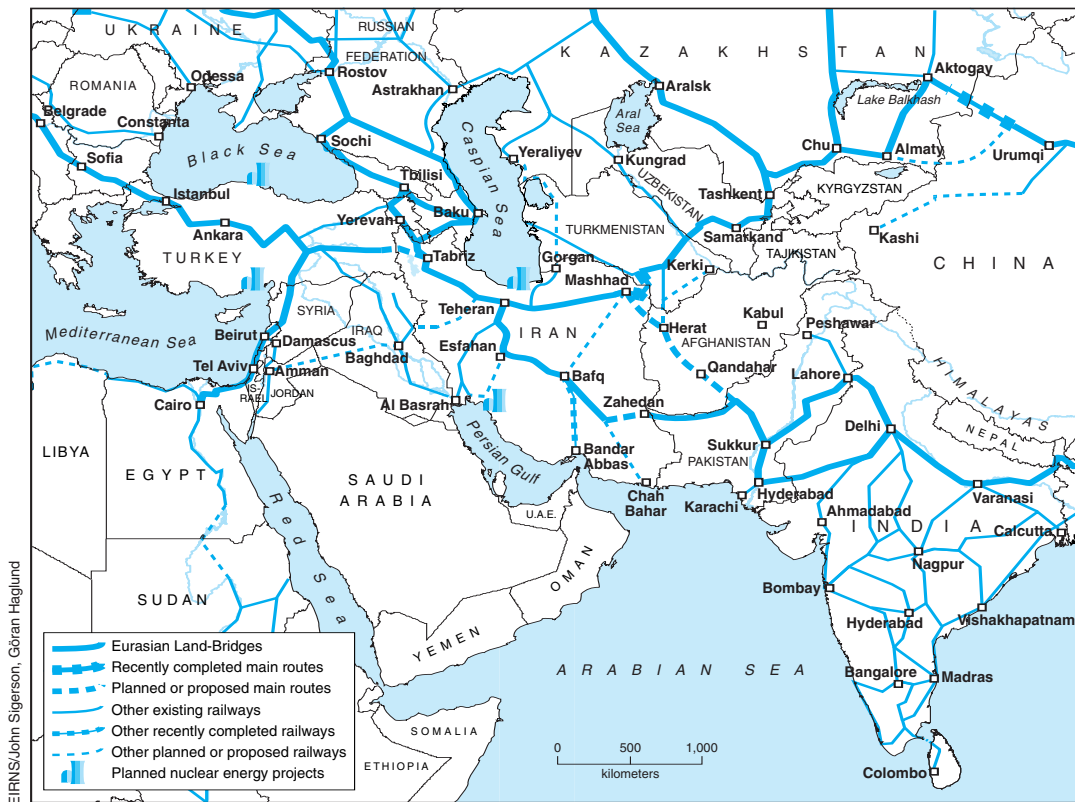


FIGURE 8. Southwest Asia rail routes and nuclear energy projects.

There are massive, giant projects for the common exploitation of the enormous oil and gas resources around the Caspian Sea. And, obviously, there are many projects in which Iran is participating. For example, in Azerbaijan, in the Shakh-Denic consortium, where the idea is to have Iranian natural gas transmitted to Nakhichevan in Armenia, continuing to Georgia and Ukraine. There is also an oil swap with Kazakhstan: to save transport costs, Kazakhstan will export oil to northern Iran, and then Iran will sell oil to be exported to the benefit of Kazakhstan. There will be a pipeline between Iran and Pakistan, part of the Eurasian pipeline network, and it will then be possible to ship oil directly from the Caspian Sea and the Gulf, not only to Europe, Russia, and Ukraine, but also to Pakistan, India, China, and Southeast Asia. So we are looking at a Eurasian *energy* bridge, too.

Caspian Sea oil and gas resources are obviously the center of a lot of international attention these days. But, it should be noted that Iran wants to move from its dependency on export of these natural resources, to favor in-depth industrial development, based on science and technology, to increase the productivity of its labor force.

Thus, there is an important change going on, in which Iran consciously wants to redefine its role, to become the gateway between East and West, and North and South.

There are massive state investments going on: eight major dams built between 1989 and 1994, twenty-five new dams under construction, and seventy in the planning stages. The first plans for the use of water power, for Iran, by the way, were thought out in the United States, in the 1950's, by the U.S. TVA, and reflected Franklin D. Roosevelt's plan to develop the postwar world. People should remember that there was a time when the United States had quite a different policy towards Iran, not least in the period of the Shah.

Iran is also making major investments in its own fertilizer industry. It wants to double its internal electricity production, and has massive investments in the metal industry, machine-tool, shipbuilding, aerospace, steel, and refining and petrochemical industries, which they want to double in the next five years, to surpass those of Saudi Arabia.

For the Central Asian republics, the Silk Road is the only hope for the future. I'm talking about Kazakhstan, Turkmenistan, Uzbekistan, Tajikistan, and Kyrgyzstan—an area twice the size of Europe—which are in the very interesting geographical position between China, Russia, India, and Europe.

Most people don't know this, but this is a region with a very rich cultural tradition. It would take too long now to go into that, but one of the greatest thinkers of mankind, Ibn-sina, was born in Bukhara, which is today in Uzbekistan, just to mention one individual.

This region has an enormous wealth of raw materials, but they are relatively poor. The reason for this is, that during the period of the Soviet Union, there was relatively one-sided development: cotton monoculture in Uzbekistan, Turkmenistan, and Tajikistan. The Soviet Union got ninety percent of its cotton from there, and, for this production, they used an enormous amount of water for irrigation, out of the rivers which flood into the Aral Sea. As a consequence, the water level of the

Aral Sea sank dramatically; the sea has shrunk by half, and there is now a great danger of an ecological disaster, with sandstorms and enormous amounts of salt flying around. In fact, there is a danger that the sea may disappear completely.

During the period of the Soviet Union, there was already a plan to direct water from western Siberia to the Aral Sea through a canal, which would then be used, basically, for irrigation of this entire region. This would require large pumping stations, where the water would be pumped over the division between western Siberia and the Aral Sea basin, and from there, it would flow by gravity, all the way to the southern end of the canal, feeding a large reservoir. This canal could be built in fifteen years, and would cost \$18 billion. Gorbachov, by the way, was the one who abandoned that project.

Currently, this region is gripped by a rather severe economic crisis. All sorts of multinationals are stepping on one another's toes in a raw materials grab. There is a danger of a repetition of the old British "Great Game" in the region, and it is very clear that only a crash program of infrastructure development of the European/Eurasian Land-Bridge, will make it possible to solve its problems.

The main rail line of the Eurasian Land-Bridge goes from China to Kazakhstan, over the Alatau Pass between Aktogay and the Kazakh border town of Druzhba, then along the main corridor through Almaty (the former Alma-Ata), Dzhambul, to Tashkent, at which point it divides. One route goes to the northwest, to Arabakh and Orenburg, Kubichev, Moscow, and Europe, and the second route diverges there in Tashkent, to Samarkand, Bukhara, Tashkent, Mashhad (in Iran), Turkey, and Europe.

It is this second route, this southern route, which is actually the old Silk Road.

Now, these rail lines are planned and, in part, completed, but obviously they must be fully built up, to become infrastructure development corridors. The richness of the raw materials in this region is an advantage, but they must be used to overcome the dependency on these raw materials. And, therefore, these corridors must be fully developed, not just as transport lines, but as functioning agricultural and industrial production complexes, which is not impossible, because, for example, in Kazakhstan, you have the advantage of a very qualified labor force from the old military-industrial complex of the Soviet Union.

On Feb. 4 of this year, *Le Figaro* had an article titled "Caucasian Participation in the Eurasian Land-Bridge: Countries of the Caucasus Decided To Reopen Old Silk Road." The article quoted people from the region, saying that now, after the collapse of the Soviet Union, they

intend to exploit their geographical position. As one representative put it, "God has given us a strategic position, at the crossroads of two great routes. One north-south axis, from the Scandinavian countries and Russia to Iran or Turkey. An east-west axis, from Central Asia into Europe."

Iran is building the connection between Kerman and Zahedan. From Zahedan, the Iranian railroad is already connected to the Pakistani rail network via the border town of Mirjaveh. The last step is the rail connection from India, to Bangladesh, to China, to Southeast Asia.

China recently built an important railway bridge from Ruili, a town in China, to Maoshweli in Myanmar. And, from there, it's supposed to build a 250-km railway to the northwest, to connect to the Rangoon-Mishna line. This will then become the connection to Nanking in South China. It will include the Greater Mekong sub-region. It will connect China, Myanmar (Burma), Thailand, Laos, Cambodia, and Vietnam. [SEE Figure 9]

In a further development, a high-speed railway is planned from Kuala Lumpur to Singapore, and, eventually, a railway all the way down to Jakarta, at which point you will have one railway from Rotterdam to Jakarta, and you will be able to travel by train from Holland to Indonesia, in the very near future. I find this absolutely exciting, because I personally do not like airplanes.

Let me present, very briefly, several of the theoretical aspects which are absolutely critical to making this project function, because the new Silk Road must lead, unquestionably, not only to a recovery of the world economy, but to the greatest economic miracle in history throughout the entire Eurasian continent, reaching out from there to all parts of the world.

What is absolutely key, therefore, is the concept of *development corridors*, which are intended to bring development into those less developed areas. The location of these corridors depends, first, on geographical considerations, but also on principles of physical economy, of which Lyndon LaRouche is the most advanced spokesman and theoretician today. Let me first go to the geographical aspects.

The famous "Silk Road" of old, which linked the ancient civilizations of India, China, the Middle and Near East, Europe, and Africa, was a network of trade routes, connected through cities. These trade routes spread knowledge and culture. It is very interesting that the present distribution of the population along the lines of the old Silk Road, which are large rivers, coastlines, channels, roads, and railroads (even though thousands—to be precise, about 2,200—of years, have passed)—nevertheless, twenty-five percent of the population of Eurasia, and seventy percent of its urban population, is still

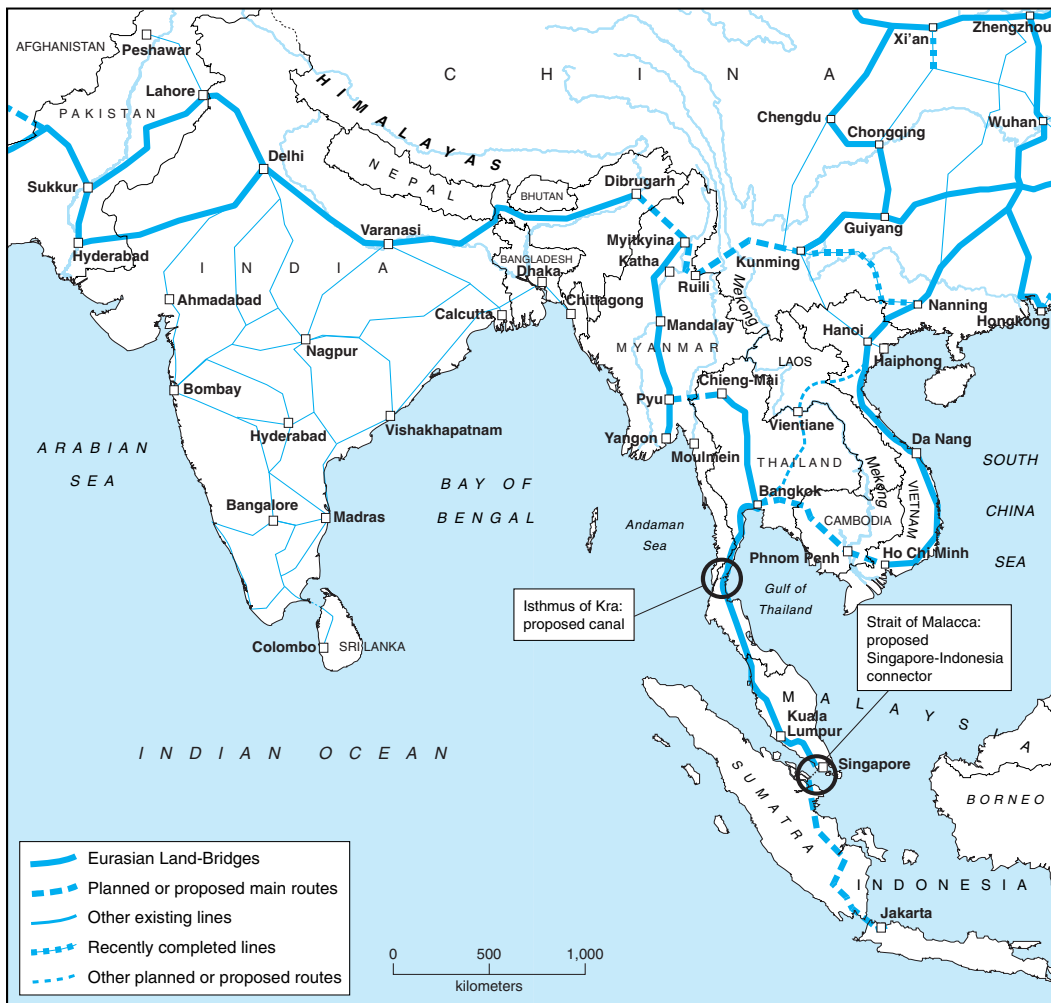


FIGURE 9. Railways, and Kra Canal, in South Asia.

living only along these transport corridors. You have a very heavy population density along these corridors.

The development of railroads is key for the development of Eurasia, because it becomes possible for the first time to open up its vast hinterlands. Lyndon LaRouche has pointed to the example of the United States, where, in 1869, the first transcontinental railroad in the world was built. At that time, people got the idea of an intercontinental railway network, to include Africa, Europe, and Asia. But, we all know that the British Empire was completely determined to prevent this from happening, and regarded it as *casus belli*. This was one of the key reasons for World War I and World War II, and decades of the Cold War.

As a result of this interruption in completing what seems to be so naturally in mankind's interest, after a hundred years—namely, a hundred years after the first transcontinental rail line in the United States—there is only *one* continuous rail line in Eurasia. Or rather, there was only one continuous railway in Eurasia—which was the Paris-Vladivostok Trans-Siberian rail line—until last

year, when this other, southern line was completed in May.

At many different places in the other routes, there are segments under construction, a railroad here, a canal there, although, up to the present, many gaps still exist. One can definitely say that the May conclusion of the Mashhad-Sarakhs line, represented a turning point in this development. Now, there are three major rail connections, the northern, the middle, and the southern routes, which connect the 500 million people of Europe, to the four billion people in East Asia and Southeast Asia.

It is very clear, that one has to look at these transport lines as transporting far

more goods in the near future (because of population growth) than what is happening now. So, we are looking at the beginning, only, of a gigantic development. Several nations participating in this are, right now, modernizing the existing lines, or building new lines, and are engaged in the modernization of the track transfer at several of the borders, because the tracks are of different gauges.

There are massive plans in India right now, to improve the northern routes, via the island of Sakhalin, to Japan. There is a plan to build a tunnel under the Bering Strait to the United States. [SEE Figure 10]

High-Technology Infrastructure Development Corridors

If you look at a map of population concentration in the world, you will see that the only areas which have a population-density comparable to that of the Productive Triangle region of Europe, are, first, in China, in the river valleys along the Yellow and Yangtze rivers; then, parts

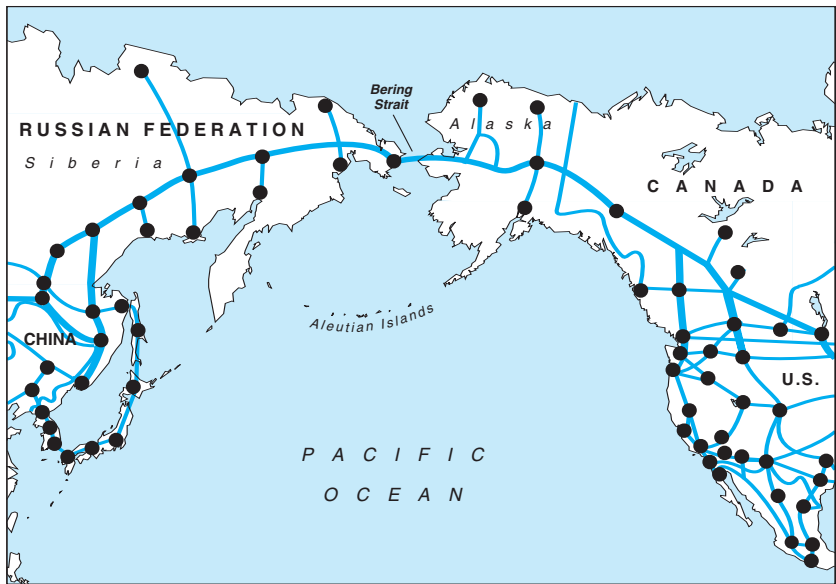


FIGURE 10. **Top:** Plan for tunnel connection between the Bering Strait and Alaska. **Bottom:** Future global rail connections as seen from the North Pole.



of Korea, parts of Japan, Java in Indonesia, parts of India and Bangladesh; the Northeast coast of the United States, and the area around the Great Lakes in the U.S. Midwest.

The reason that this is important, from the standpoint of physical economy, is because—contrary to the idiots of the environmentalist movement and criminals like Lester Brown—low population-density is actually a negative economic factor. What you have to look at, is the cost *per capita* for the specific living standard and level of production. And a large factor in that, is the basic infrastructure cost.

Basic infrastructure cost involves: roads, railroads, public transport, production and distribution of energy, a supply of usable water, canalization, communication, health care, and education. If you think about that, it is clear that the average cost, for example, for one million

people in a well-planned city, is much less than for one million people who are spread over a rural area. Cities represent a much higher efficiency, because, first of all, you have a much shorter distance to overcome for persons, goods, and services to be supplied. You have a higher intensity of use of all the systems—for example, transport, education, and so forth—and, you have a better use of the technologies in urban centers. You have a higher energy-flux density, and a higher power density of machines. Therefore, you can do more useful work, with a relatively small expenditure of labor, materials, and land area *per* unit output.

This parameter, by the way, the energy-flux density, coheres directly with the increase of population-density. In other words, the more people you have, the higher the density of the production process must be. Therefore, advances in technology always lead to an increase in the potential population-density. Conversely, an increased concentration in population-density, stimulates the progress of technology. This is not only true for cities, but also for populations along rivers, trade routes, and so forth.

Compare the relative energy efficiency of the United States, France, and Japan, in the time before the crisis erupted, let's say, 1980; they had a roughly comparable standard of living, health services, and industrial activity. Japan required the *least* expenditure of energy *per capita*, but they had the highest density of energy use *per* square kilometer. So, there is very clearly an advantage of greater density.

The typical infrastructure corridor along these transport lines, should be imagined as follows. You have a corridor approximately 100 kilometers wide, which includes a rail line, a high-capacity electric power line, oil and gas pipelines, water supply lines, fiber-optics communications lines, and so forth. [SEE Figure 11]

The most essential preconditions for *any* industrial, agricultural, and urban construction, are these infrastructural arteries, which, once built, can then branch out, and eventually cover the entire territory. You must start development from these arteries, and then branch out into the less developed areas.

Along these arteries, you also want to have new cities

(Which, parenthetically, must be built beautifully, not like Houston! There are very many beautiful architectural models in the ancient cultures of Eurasia, and people should use the fact that, nowadays, it's so much cheaper to build, to not neglect beauty. Just think about the beautiful cities of China, of Korea, of Thailand, and other places, and there are many ideas for how these places can be built beautifully.)

The infrastructure corridor model is important, because, if you build a rail line merely to connect location A to location B over a long distance, then that railway is nothing but a cost factor. But, if you have this kind of an approach, then, through the dense agricultural and industrial activity, the line from A to B becomes an economic multiplier, and the larger the density of the economic activity along the route, the more efficient the investment into the initial railway becomes. What you want to create is both large markets, and large suppliers of goods, so that the connection from A to B has the role of a gigantic production line.

Clearly, this approach is the unique way to overcome the disadvantages of unfavorable natural conditions, let's say of Arctic Siberia, the deserts of Central Asia, and all landlocked areas in principle. And, it is also clear, therefore, that the continuous development of a corridor is more advantageous than, let's say, islands of economic activity which have no immediate connection.

Let me review very briefly some of the absolutely necessary technologies needed to make the Eurasian Land-Bridge succeed. The need exists to use cutting-edge technologies in these corridors. Once you use them in the corridors, they will be distributed to the participating nations of the Land-Bridge. In this way, the corridors become the transmission belts for scientific and technological progress in all of Eurasia.

If the Eurasian Land-Bridge is supposed to become the locomotive for the world economy, it is important to apply the principle of physical economy in selecting the most important technologies for transport, energy, water, and communication.

Since the average parameters of performance of infrastructure in the Eurasian corridor must surpass those in Japan before the crisis, in all categories—for electricity, heating fuel *per capita* and *per square kilometer*, supply of households, industrial production, agricultural production, water, and so forth, the performance of transport systems in ton-kilometers and value-ton-kilometers *per hour*, *per capita* and *per square kilometer*, communications systems, and health and education systems—therefore, the selection of technologies must be based on the relatively highest density of performance, in terms of the infrastructure performance *per unit* of land area, *per employed worker*, and *per other resources* consumed, by the given infrastructural system.

The higher performance correlates broadly with the energy-flux density or power density of that technology, as measured in watts *per centimeter* of power flow through the crucial work surface of the process involved.

The technological quality of the energy system, therefore, must increase. For example, there must be a growing role of electricity versus thermal power, of high-temperature heat versus low-temperature heat, increasing the speed in passenger transport, and so forth.

The infrastructure

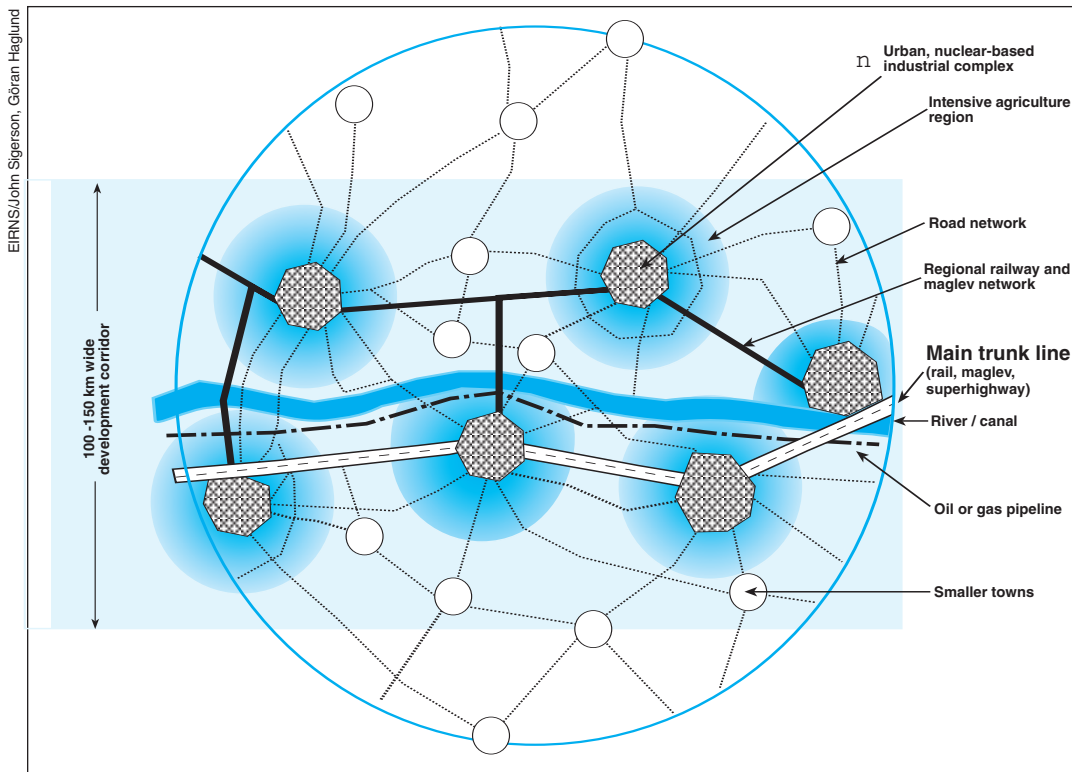


FIGURE 11. Graphic representation of a "development corridor."

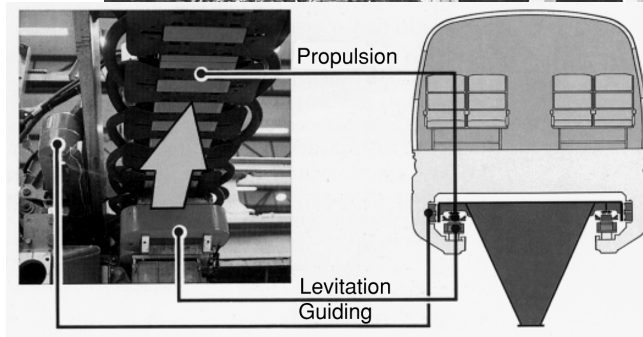
projects must also be designed in advance, to anticipate the introduction of more advanced technologies when the corridor is developed. The integration of all means of transport—water transport, railroads, planes, and trucks—must also be included, including the containerization of freight transfer from one mode to the other. Since there is a dramatic increase in global demand for multi-mode transport projected, it is crucial to anticipate now how to overcome the bottlenecks.

There already exist engineering designs for fully automated freight transfer stations, so-called Combi-terminals. In France, the first generation of “rapid transfer” systems is already in operation, the so-called “Commuter” facility near Paris. The presently conventional, state-of-the-art system involves the use of portal-cranes, which run 700 meters along tracks parallel to the train tracks. Then, to unload a typical container train of 600 meters in length, carrying 40 containers, such a crane normally requires at least 70 minutes. With the first generation of automated rapid-transfer systems, this can be reduced to 15 minutes or less. For example, in Germany, Krupp is presently developing such a system, called the Fast Freight Transfer Facility.

The Eurasian Land-Bridge must combine all major modes of transport, but the reason that rail transport must play a central role, is because it requires much less energy, and less labor, as well as being less affected by climate and weather, than road or ship transport.

Existing systems are the French TGV, at 300 km *per* hour, and 150 km or more for new high-speed freight lines. Although the existing Eurasian Land-Bridge is based on conventional railroad technology, it is absolutely crucial that magnetically levitated (maglev) ground transport play a decisive role in the future. One existing model is the German Transrapid, which can go 450-500 km/hr, and, hopefully, will be built by the year 2005 between Hamburg and Berlin, if present resistance can be overcome, and will then eventually extend to a Europe-wide network.

With this Transrapid, you could go from Paris to Beijing in six or seven hours, so that you could easily leave in



Development corridor transportation systems will incorporate magnetic levitation (maglev) technology. Above: Transrapid prototype travels at 450-500 km/hr. Left: Maglev eliminates mechanical contact between vehicle and track.

the morning, and in a leisurely way do your work on your computer terminal, work on the telephone, and by the afternoon, you would be in Beijing, well-rested, secure, without air turbulence, and so forth. Japan is only slightly behind Germany, building a different system, and, also, China is working on one. There is a very interesting model presently being worked on by some Ukrainian scientists.

This kind of travel is revolutionary. It eliminates vibration and friction, because it is not connected to the ground. This technology will be very efficient in all of Eurasia. It will replace short- and medium-distance flights, because it is completely ridiculous, to go from New York to Washington, by spending two hours getting to the airport, one hour in the air, and two hours getting from the airport. With this, you will have one hour's travel, and be where you want to be.

The total investment for the maglev system, of the type of the Transrapid, of a total length of 100,000 km, will be approximately \$1 trillion. That sounds like a lot of money; but, it's only \$220 *per capita* of the Eurasian population, in a span of ten to fifteen years. And, for about ten years, it requires an investment of only one percent of the GNP of the respective countries. And, think what a change this will mean.

Transport by sea, which is still the most efficient method for bulk goods and goods which are not dependent on timely delivery—namely, raw materials, semi-finished products, fuels, grains, heavy machinery, and so forth—will also expand many times as the world econo-

my begins to grow again. We will therefore need a massive expansion of harbor facilities, and major improvements of inland waterways, and new inland shipping canals. Many breakthroughs have been made in the recent period—for example, in high-speed, gas turbine-powered catamarans, which are currently in use between Sweden and Denmark, and which can travel at approximately twice the speed of normal ferries. These can be used all over the world; Indonesia, especially, is a place where natural “water roads” offer themselves for this technology.

Contrary, again, to what the environmentalist movement says, the world economy will be much more energy-intensive in the future. There will be an enormous energy requirement for the economic exploitation of mineral resources, for example, where technologies such as plasma processing will be used. And we will need a lot of water projects in the large-scale desert regions in the Near and Middle East, in North Africa, Central Asia, and in China, for pumping, reprocessing, and desalination of water.

We will have to provide large amounts of cheap energy, of which electricity today is the highest quality of energy, because you can easily distribute it on a large scale. And, we will also require large amounts of industrial process heat for buildings and industry, fuels for internal combustion engines, and so forth.

Despite the enormous quantity of fossil fuels in Eurasia, the technology which has the highest energy-flux

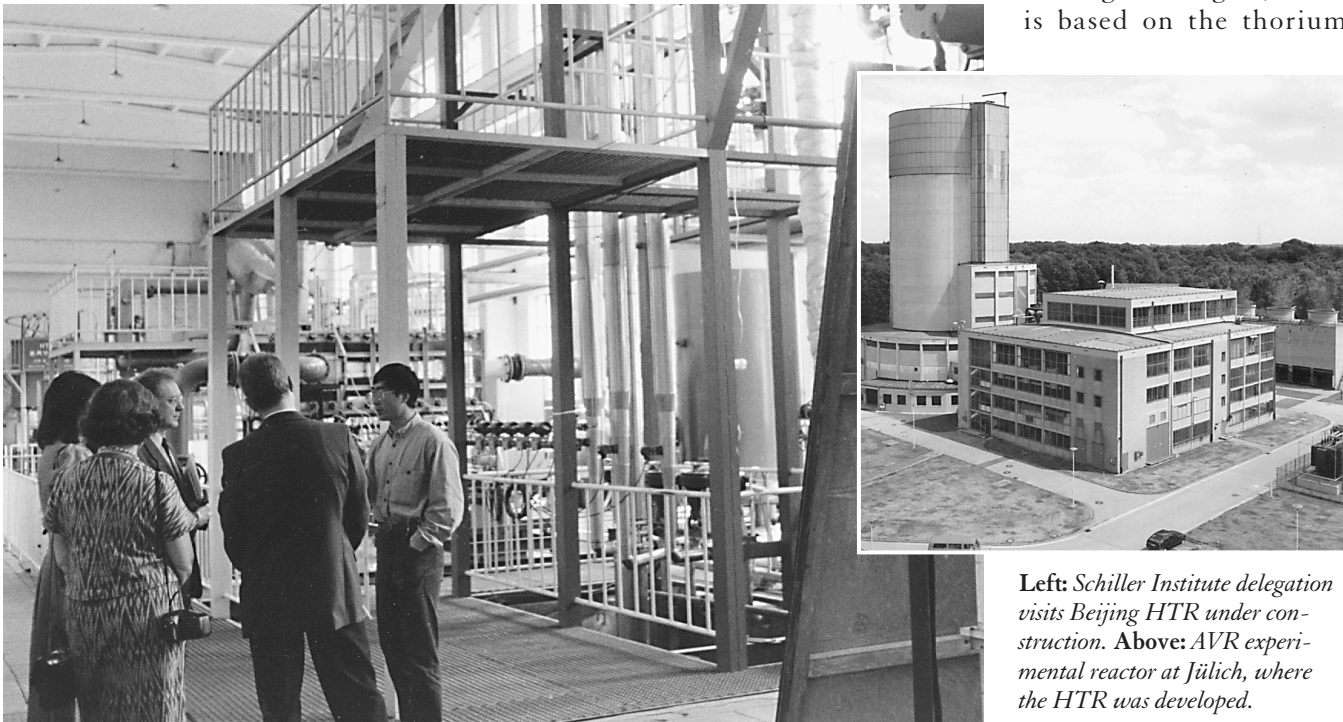
density is, in the future, nuclear fission, and, hopefully very soon, nuclear fusion. There are, right now, extensive nuclear power programs in Japan, South Korea and North Korea, China, Vietnam, Indonesia, Iran, Turkey, and India. Presently, the light-water reactor of approximately 1,000 MW, is in use in many countries. France, for example, gets eighty percent of its electricity nationally from this reactor type.

But, what we propose, is actually a much more attractive model: the high-temperature reactor (HTR) developed by Professor Schulten of the Jülich Laboratory in Germany. The only currently existing HTR in the world is under construction near Beijing, which we visited in May of last year. A similar reactor is being developed in the United States and Japan. The HTR is much more efficient than the light-water reactor, because, among other things, it also produces process heat for industrial and other uses.

The HTR is inherently safe, because the possibility of a meltdown, or major release of radioactivity, is ruled out by physical mechanisms. So, without complex safety systems or human intervention, this reactor is safe, mainly because of the encapsulization of the nuclear fuel within multiple layers of a special high-temperature ceramic, the so-called “Siamant,” which prevents the release of radioactivity, even under extreme conditions.

The HTR is, therefore, a robust and easy-to-operate reactor, especially safe in densely populated areas, and as a component of the “nuplex” cities which have to be built.

One big advantage is, that it is based on the thorium



Left: Schiller Institute delegation visits Beijing HTR under construction. Above: AVR experimental reactor at Jülich, where the HTR was developed.

cycle, of which India has large reserves.

I could say many more things, but I just wanted to give you a glimpse of the gigantic construction activity underway or planned, on the one hand, and, on the other, the physical principles this effort *has to have*. I invite you to study in depth the *EIR* Land-Bridge study which we have produced.

Significance for Russia and Germany

Let me conclude with two final aspects briefly, just to give you an idea.

You probably realize that I did not mention Russia, although Russia is, obviously, a crucial centerpiece within the Eurasian Land-Bridge. And, I can assure you that, without doing what Leibniz said three hundred years ago—that is, taking Europe and China, with Russia as a mediation between these two cultures, and bringing the development from both sides—there is no way that we will avoid a terrible catastrophe in Russia.

Right now, as a result of the reform policy, the industrial production of Russia has collapsed in the last five years to twenty percent, on average, of what it was in 1991. General Lebed and others have warned that we are looking at a danger this coming spring, because of a serious supply crisis.

Fortunately, there is currently—this is not represented by Yeltsin, Chernomyrdin, as such—a growing group of scientists and other people in Russia, who are absolutely fascinated by, and who want to integrate Russia into, this Eurasian Land-Bridge. Lyndon LaRouche gave a seminar there in April last year, organized by the famous economist Leonid Abalkin, with the participation of former Prime Minister Pavlov, and with forty prominent Russian economists, about this perspective. The proceedings were just published in Russian, and are circulating widely in government and other circles, along with a document which LaRouche wrote for the Russian Duma.

When Gen. Lebed was in Germany just two weeks ago, he—very surprisingly and very positively—announced the need for Russia to go back to the policies of Count Sergei Witte, which was exactly the same approach as we are proposing now, and to use the German model of machine-tool *Mittelstand*, middle-level industry, to transform Russia.

Clearly, this is very urgent, and no time is to be lost.

As a last point, let me mention the German situation. Those of you who know Germany and love it as I do, are probably crying right now, over what is happening to this beautiful country. Rather than using the historic chance of 1989 to transform the East through technological means, Germany, having been really hoodwinked by the

Anglo-Americans—by Thatcher, by Bush, by Mitterrand—is now collapsing. It is falling apart at a rate which people cannot imagine.

There are at this moment, officially, 4.5 million unemployed. But, if you include hidden unemployment, Germany has well above eight million unemployed. That is a higher percentage of the workforce than in 1932 or 1933, when Hitler came to power, and the country is in a very, very dangerous situation, even though there is no Hitler present today.

Germany has lost, in the last five years, *twenty-five percent* of its industrial employment. This, for Germany, is a catastrophe, because the German economy, even despite the present collapse, is unique. For example, in 1995, Germany's exports were still DM 728 billion; 87% of that was industrial goods, mainly capital goods; 112 billion in exports in machine tools, 11 billion of those machine-tool design; 126 billion in vehicles; 96 billion, chemical products; 96 billion, electrical equipment; 13 billion, precision and mechanical and optical goods; 15 billion, aviation and space vehicles.

The only other country which has a similar situation is Japan. But, they're more focussed on the Far East, whereas Germany has a broader, worldwide distribution. There is no country in the world which is as dependent on the prosperity and stability of other regions in the world, as Germany is.

But, since unification, we have seen in Germany a dramatic collapse of export-oriented jobs: 700,000 jobs were lost in this area alone. So, the situation is absolutely dramatic, and, if Germany is to be saved, the means is obvious: Germany can produce everything which these development corridors need. It is a crime to destroy those industries.

The German government, which is absolutely *mad* to fulfill Maastricht—a conception which was designed by Thatcher and Mitterrand to contain and weaken Germany, to destroy it for geopolitical reasons—is, right now, in the process of turning Germany into a rubblefield.

We are determined to put the Eurasian Land-Bridge on the table as an alternative.

The reason Germany has to play a crucial role, is that Germany not only has this export-dependency, but the reason for that, was that Germany has a very large component of machine-tool production and *Mittelstand*. This is extremely important for all the other economies as well, because, contrary to what the economists of the monetarist school of Adam Smith *et al.* say, the source of a country's wealth is not its natural resources. It's not oil, gas, strategic minerals, and all these other things. And it's not speculation; it's not stocks; it's not a bubble economy.

The *only* source of wealth in an economy, is the cre-

ative reason of the individual. And, if that creative reason is applied, and leads to scientific and technological progress, which, then, is essentially turned into machine tools, then you are applying scientific and technological progress, and making it usable for production. This occurs through the work of the engineer, the scientist. Many of the machine-tool *Mittelstand* industries in Germany, were, up to the present time, headed up by engineers, who had a family firm, with several dozen or several hundred employees. These firms were the engine of technological progress.

Now, Germany also has a way to reverse its present course, because we do have a tradition of *making people creative*, because Germany used to have the best educational system in the world—the famous Humboldt education system—which was the reason why, in the Nineteenth century, Germany was the world’s leading nation in developing new technologies and defining new categories of knowledge. All we have to do, is to go back to that educational system, whose central idea was not to teach specific skills, but to develop the character, to develop the character and beauty of the person to become a state citizen.

We propose to return to this, and make Germany a centerpiece. Not to let Germany collapse, but to make it one of the leading motors in the driving of this Eurasian Land-Bridge. We have what people need; why should we collapse, when we can help?

There are two strategic regions, which everyone can

see will blow up, if this is not done. One is the Balkans, Bosnia in particular, where the Eurasian Land-Bridge *must be effected*, to calm down and develop the region. You all have heard that Bulgaria is currently falling apart, there is a terrible hunger catastrophe. The country is just collapsing, with hyperinflation, a complete standstill of the economy. Serbia is exploding, among other things, because of the economic condition. Albania, Kosova—there will be another war for sure, if Bosnia and the Balkans are not part of this, very fast.

And, secondly, I think that if you look at the continent of Africa, it is also clear that, with what is going on in Zaire, Rwanda, Burundi, Sudan, the only way to stop the bloodshed, to stop the collapse, is to build the Eurasian Land-Bridge into Africa as quickly as possible. We propose to connect the Eurasian Land-Bridge fully to the African railway system as a totality. If this is done with the help of China, other countries of Eurasia, Germany, Japan, and with the full backing of the United States, there is no reason why Africa cannot be saved. It is eminently possible.

What is required, therefore, is for the United States to go back, consciously, to the policies of Franklin D. Roosevelt, and to overcome the Depression through a dirigistic program, not only for the United States, but for the world as a whole.

If we do that, then each of us can look into the eyes of today’s children, and the many other children to come; if we don’t do it, then these children will not survive.

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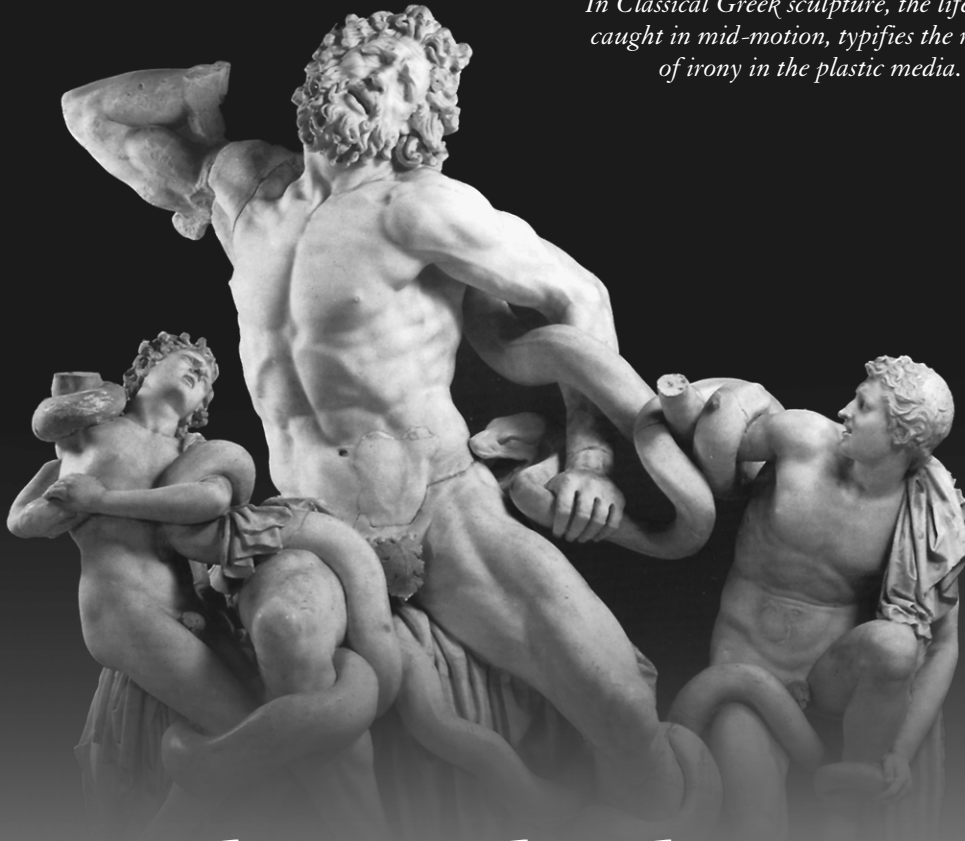
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In Classical Greek sculpture, the life-like effect of an image, as if caught in mid-motion, typifies the role of metaphorical qualities of irony in the plastic media. Shown: Laocoön, 42-21 B.C.



Behind the Notes

by Lyndon H. LaRouche, Jr.

March 9, 1997

The preceding volume, Book I of this two-volume Manual, addressed the basis for music in that mode of use of the human singing voice, the which combines the Florentine *bel canto* method of voice-training, with the development of well-tempered polyphony by Johann Sebastian Bach.¹ The present volume, Book II, addresses the application of those principles of vocal polyphony to performance of those Classical compositions, and perfected folk-song,² both vocal and instrumental,

which conform to the standard of *motivic thorough-composition* which Wolfgang Mozart developed, in Vienna, during the first half of the 1780's. The function assigned to the present volume, is to present those inter-connections both to the advanced student, and to that student's teacher.

Excepting unavoidable references to that portion of the work by J.S. Bach, which established the indispensable foundations upon which Mozart's development of principles of *motivic thorough-composition* was

This article will appear as the Introduction to Book II of the Schiller Institute's "Manual on the Rudiments of Tuning and Registration." Book I, "Introduction and the Human Singing Voice," was published in 1992.

1. *A Manual On the Rudiments of Tuning and Registration*, ed. by John Sigerson and Kathy Wolfe (Washington, D.C.: Schiller Institute, 1992). Subsequent German and Italian editions have been published: *Handbuch der Grundlagen von Stimmung und Register*, trans. by Werner Hartman (Wiesbaden, Germany: Dr. Boettiger Verlag-GmbH, 1996); *Canto e diapason: Un manuale con oltre mille esempi tratti dalla creatività classica e lirica* (Bergamo, Italy: Edizione Carrara, 1996).

Is it not the case, that the architecture of natural polyphony, and of the domain of tonality, functions in music as geometry functions in the domain of physical science?

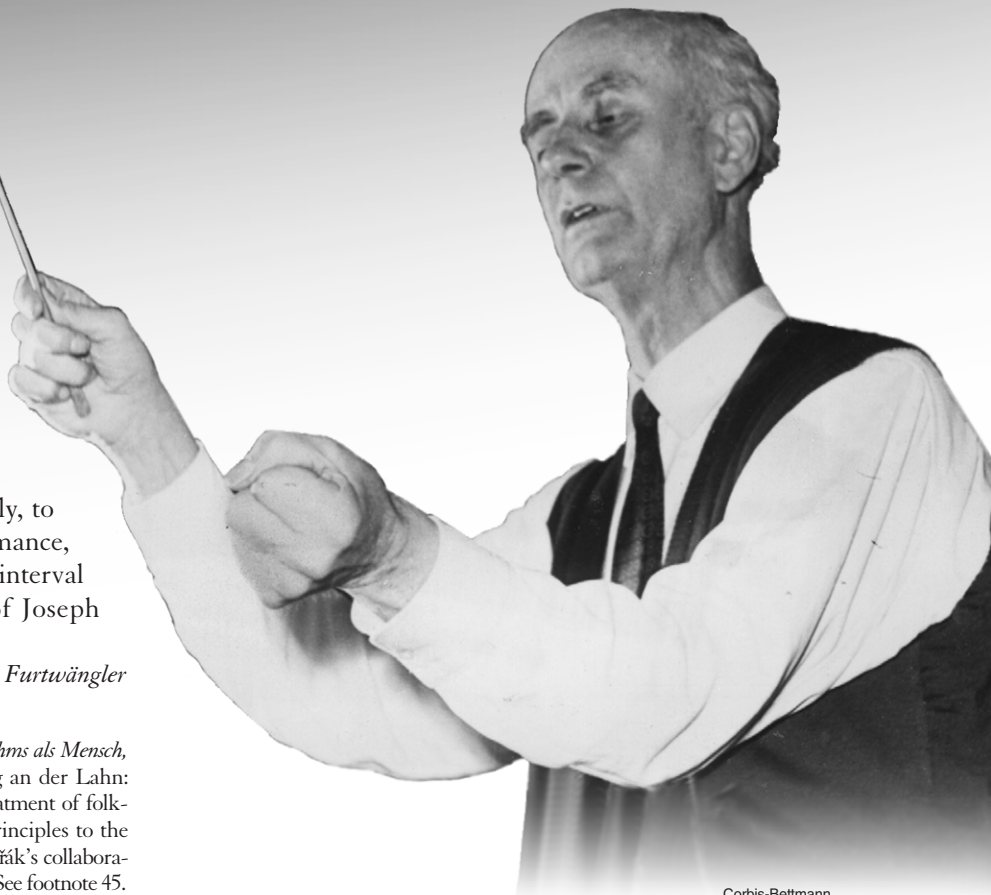
Is it not the case, that the human mind, over millennia of development of civilized life, has discovered, in geometry, a natural expression of the way in which the human mind is organized, to the effect of generating, and elaborating those discoveries upon which mankind's increased mastery of nature depends?

Is it not the case, that that long process of man's development of music, leading through J.S. Bach's development of well-tempered polyphony, the which made possible, directly, Wolfgang Mozart's discovery of his principle of motivic thorough-composition, is nothing but the process of uncovering, phase by phase, not only a less imperfect comprehension of the natural predisposition of the human singing voice, but also the way in which music might, less imperfectly, evoke that emotion of agapē which is the innermost, underlying quality, expressing man's nature, as Plato, and the Apostle Paul understood this?

premiered, the present book focusses upon examples from the work of Classical composers from Haydn and Mozart, until the last compositions of Johannes Brahms. Within the following chapters, the treatment of the instruments is limited, chiefly, to that evolution of instruments, of their performance, and of ensembles, which occurred during the interval beginning with relevant early influences of Joseph

Conductor Wilhelm Furtwängler

2. Cf. as referenced in Book I, Gustav Jenner, *Johannes Brahms als Mensch, Lehrer und Künstler: Studien unter Erlebnisse* (Marburg an der Lahn: N.G. Elwert'sche Verlagsbuchhandlung, 1930). The treatment of folk-song by Brahms, and the application of these same principles to the American Negro Spiritual by Antonin Dvořák and Dvořák's collaborator, Harry Burleigh, typifies this important qualification. See footnote 45.



Haydn, and ending at the coincidence of three interrelated, relevant, political developments: Lord Palmerston's 1848-1849 wave of "Young Europe" revolutions; the emerging hegemony of anti-Classical, Romantic trends in arbitrarily elevated tuning; and, the anti-vocal redesign of the tuning and registration of wind and other instruments.³

The origins of Book II are now identified by aid of two relevant anecdotes. The first, whose beginnings date from early 1946, is as follows.

During early 1946, the writer of this introduction returned to India, a music-starved veteran of military service in northern Burma. The sparse collection of records available from the Red Cross, at the U.S. Replacement Depot outside Calcutta, included nothing better than an HMV recording of a Tchaikowsky symphony, but in a performance under the celebrated conductor Wilhelm Furtwängler. It was the writer's first actual hearing of a Furtwängler performance. From the opening, the writer was, without exaggeration, virtually frozen in his seated position; the performance was stunning in its relentless suspension, its remarkable coherence, from opening to close.⁴ That reaction was not merely a result of coming fresh from a prolonged thirsty period in a musical desert. As later experience showed, under any circumstances, Furtwängler represented qualitatively better direction than the writer had ever heard before that moment in early 1946. Later, the writer learned of the phrase which Furtwängler employed to describe this stunning advantage: *perform-*

*ing between the notes.*⁵ Since that first hearing of Furtwängler's conducting, that experience has dominated this writer's relationship to music, in the most compelling fashion and degree.

Later, back in the U.S.A., this writer heard the report that certain agencies professed, that they had discovered a "Nazi" quality in Furtwängler's role as a conductor. Since this writer had heard the recorded Tchaikowsky performance in early 1946, and, later, other performances conducted by Furtwängler, he knew the charge to be false. The first, 1946, hearing of the great conductor's work, had provided a deep glimpse into the inner workings of the conductor's mind; that was no Nazi. During the 1970's, this judgment was buttressed by access to the facts about the crafting of the charge by Hans Haber, Margaret Mead, *et al.* There was no doubt that the charge had been entirely fraudulent.

For that controversy, the relevant term of reference, is *agapē*, as Plato defined it. The Nazis, including Martin Heidegger, like Heidegger's admirer, Hannah Arendt, as also Margaret Mead, Theodor Adorno, and as the proto-Nazi Friedrich Nietzsche and Richard Wagner, or, the irrationalists Bertolt Brecht, Heidegger clone Jean-Paul Sartre, or Sartre's Simone de Beauvoir, were embodiments of anti-*agapē*. The essence of Furtwängler's musical performance, like that of the compositions of Mozart, Beethoven, and Brahms, is *agapē*. The musical significance of that concept, is the seed-kernel, and pervasive principle underlying the presentation of music in this present volume.

Back in the U.S.A., this writer devoted a significant ration of his time to exploring the mystery: What was Furtwängler's secret? The most likely clues to discovering the principle involved, might be provided by examples from the German *lied*, as performed by the best singers among Furtwängler's contemporaries, by the Italian vocal repertoire of Giuseppe Verdi, and by close study of the instrumental works of Wolfgang Mozart, Beethoven, Schubert, Schumann, and Brahms. After a few years, this line of inquiry was focussed upon that centerpiece for the study of motivic thorough-composition, the Mozart K. 475 Fantasy. This composition, which had been derived, among other relevant Mozart works, from the discovery contained within J.S. Bach's *A Musical Offering*, seemed to provide a bench-mark,

3. The first official effort to depart from Bach's well-tempered C=256, to the Russian bandmaster's A=440, was ordered by agents of the Holy Alliance powers, in the setting of the Congress of Vienna. Later, a more insidious effort to enforce what mere decree had failed to bring about, occurred with the redesign of wind instruments, and also keyboard instruments, with a built-in registration which was shifted away from the natural registration of the *bel-canto*-trained human singing voice. This latter change gained momentum under the conditions provided by Palmerston's 1848-1849 revolutions. Those "Young Europe" revolutionaries, as typified by the cases of Richard Wagner and his bomb-throwing crony, and fellow-Beethoven-hater, N. Bakunin, also marked the unleashing of a more concerted effort to supplant the Classical tradition of Bach, Haydn, Mozart, Beethoven, *et al.*, with the irrationalist Romanticism of Carl Czerny's Franz Liszt *et al.*

4. At a recent time, even after hearing sundry Furtwängler recorded performances many times, this writer was taken by surprise once again, recapturing the same kind of "Furtwängler effect" which he had experienced on the referenced 1946 occasion. This time it was a first hearing of the Furtwängler direction of the Franz Schubert Ninth Symphony, as performed at Berlin's Jesu-Christus-Kirche, in December 1951 [Polydor International GmbH, Germany: Mono 427 405-2].

5. The alternative expression is ". . . from behind the notes." In the interest of reaching for greater conceptual transparency, the present writer's own choice, would be *performing from behind* (*var., beneath*) *the intervals*. For the functional significance of such distinctions, see below.

or, perhaps, a kind of “Rosetta Stone,” for the tracing of methods employed by Furtwängler, as derived from a basis pervading the work of such Classical composers as Mozart, Beethoven, Schubert, Schumann, and Brahms.

There were numerous coincidences, but never anything merely accidental about the writer’s dedication to this implication of Furtwängler’s conducting. Before the war, as an adolescent, this writer had become a convert to the scientific world-outlook of Gottfried Leibniz. Several notebooks, containing the writer’s notes on Kant and Leibniz, dating from the present writer’s mid-adolescence, turned up several decades later. The author was amused to recognize himself in this mirror of his youth: these contained the kernel of a competent refutation of that attack on Leibniz which is central to Immanuel Kant’s *Critique of Pure Reason*.⁶ What had gripped this writer so strongly, from the first, 1946, hearing of Furtwängler’s work, was, that the effect of the contrast of Furtwängler’s direction, to that of familiar conductors, was identical to the distinction, in *type*⁷ of quality, which separates the transparency and vitality of Leibniz, from the Romantic irrationalism permeating Kant’s sterile doctrine for aesthetics.

Furtwängler’s mastery of performing from “behind the notes,” expresses a method which may be readily observed, as practiced, in one degree of approximation or another, by the best musical artists. It is not a formal topic of the customary textbooks, and certainly not often met on the dust-jackets of recorded performances. It is a method which need be developed by the student and professional, a method which requires mastery of an accumulation of great musical learning, but, to be developed so, requires that an inclination for it must be there at some early stage of the artist’s development.

In the master-class, such as the recorded sessions with the great Pablo Casals, and in kindred settings, one often sees the master employ this method in a way which is

accessible, and very moving for sensitive young artists. Yet, often, a master insists, that he, or she could not imagine how the principle might be communicated, other than by means of demonstrations appropriate to a specific musical situation, a specific performance problem. This latter practice is irreplaceable; but, it is possible, and necessary, to render the principle itself transparent. That is the pervading task which characterizes the method employed for Book II.

Until the late 1970’s, this writer’s attention to such musical matters occupied an important niche, an integral but secondary feature of his work on the epistemological side of scientific and technological progress. It was located, notably, as an essential, correlated feature of his definition of human creativity as such. However, this was only a niche, if a crucial one, in the work of shaping of his own original, 1948-1952 discoveries in physical economy. In that work, the crucial function of metaphor, as the generative principle of Classical tragedy, poetry, and song, was referenced, to show the generality of the same creative-cognitive principle of the individual mind, as in generating and replicating valid revolutionary discoveries of principle in physical science. There, in that niche of the writer’s work, the musical matter remained lodged, until the 1970’s developments which led into production of this *Manual*.

This brings us to the second of the two relevant anecdotes, to events which began approximately thirty years later than the first.

During the early to middle 1970’s, a new organization had been formed, devoted, day to day, to political intelligence, certain scientific work, and related publishing activity. It had developed out of a body of graduate students and others, who were drawn together through a one-semester, introductory course in physical economy, which the writer taught at various 1966-1973 campus locations. It was in this setting, beginning 1978, that this writer recognized the urgency of introducing the principle of musical motivic thorough-composition, as an integral feature of the daily political and scientific intelligence activity of this association.

For the apprehension, in music, of the underlying principles of motivic thorough-composition, it should be noted, that a good quality of political-intelligence product rises above the requirements of ordinary academic professionalism, into regions loosely described as “insight.” These are regions of mental life which Gottfried Leibniz sometimes identified by the term *Analysis Situs*: those relations of ordering which underlie what is usually named the functionally “non-linear” sequences, such as evolutionary sequences of distinct species, among mutu-

6. In defense of Leibniz’s arguments in his writing which was posthumously published as the *Monadology*.

7. The present writer employs the term “type” in the sense provided to mathematics by Georg Cantor’s notion of *the ontologically transfinite*; the writer reads Cantor’s usage from the vantage-point of what Leibniz identified as *Analysis Situs* (see note below). A *type* is a species of those orderings which lie outside the bounds of any deductive/inductive method, as, for example, outside, and above, the virtual-reality domain of today’s generally-accepted classroom mathematics. *Typical* is the distinction, in the domain of experimental physics, between entropic and anti-entropic, non-linear ordering of deductively, mutually incongruent states of a continuing process. The distinction between a living and a no-longer-living process, belongs to this domain of *Analysis Situs*.

ally inconsistent, but coherent processes.⁸

In Classical music, these same considerations are expressed as the deeper, governing principles underlying motivic thorough-composition. In every species of cognition, as in the work of political intelligence, physical science, and Classical composition, it is not sufficient to deduce conclusions from arrays of facts; it is essential to discover, and validate the unifying, underlying characteristic of the contextual situation in which such an array of facts is located functionally.⁹

The motivating state of mind in which such indispensable qualities of “insight” are mustered, is precisely that which we associate with the manifest “insight” of a great performing artist, the quality of “insight” expressed by Furtwängler’s emphasis upon performing from “behind the notes.” Indeed, all great Classical musical compositions, especially motivic thorough-composition, have a common, specific quality, that of celebrating those creative qualities of the individual human mind which we might wish to recognize as the intent of “insight.” This aspect of great, well-performed Classical music, serves society as a well-spring of refreshment and inspiration for those intellectual powers and moral strength, the which might be intended by that term. This use of the term, is that which is equally applicable to every facet of most serious endeavor, in statecraft, and in matters bearing upon the underlying principles of scientific and artistic work.

The purpose of that musical program which was developed, among the writer’s associates, beginning 1978-1982, was to enhance the work-a-day, moral and intellec-

tual creative potential of the association, through broadly representative, regular participation in structured programs of musical activity. During the course of 1978-1982, these programs came to be centered upon regular polyphonic choral activities, which were based, in turn, upon the practiced rigor of Florentine *bel canto* training. To serve the intended purpose, it was essential that the principles governing this activity, be sound ones, conforming to the species-characteristics of individual human creative-cognitive processes, i.e., *reason*, as Johannes Kepler and Leibniz signify the use of that term. It was essential, that those participating in the program should come to recognize, and employ those same principles as part of the musical activity.

From the outset, this program required, that we confront, and overcome a large accumulation of popularized academic, and other, conventional, but false, shibboleths about music. This meant, most notably, the influence upon professionally trained musicians, and others, of that irrationalist, anti-Classical, Romantic and modernist ideology, radiated from such sources as the neo-Kantian Karl Savigny, Hermann Helmholtz, and the followers of Theodor Adorno.

As Book I has already documented that problem, the irrationalist influences over the concert-hall, are typified by Joseph Goebbels’ success, in inducing a pre-World War II, London conference to adopt the Nazi Party’s standard of $A=440$, one of the Nazi crimes against humanity not addressed at Nuremberg.¹⁰ Since World War II, notably under the more recent conditions of ever-greater elevation of pitch (even, sometimes, during a leading orchestra’s

8. An evolutionary sequence of mutually distinct species, is typical of such orderings in general. The notion that sequences of physical systems might be ordered in such a way that the sequence is either entropic, or anti-entropic, lying within what Leibniz defined as the domain of *Analysis Situs*, is exemplary of topics beyond the scope of deductive forms of analysis. To locate the historical origins of the writer’s approach to the subject of the essential role of the concept of time-reversal in understanding the compositional method of motivic thorough-composition, see *Gottfried Wilhelm Leibniz: Philosophical Papers and Letters*, ed. by Leroy E. Loemker, 2nd ed. (Dodrecht, Netherlands: Kluwer Academic Publishers, 1989); “Studies in a Geometry of Situation” (1679), pp. 248-257. The writings which most influenced the present writer’s adolescent thought on the subject of Leibnizian *Analysis Situs* are, as provided in the same current location: “The Monadology,” pp. 643-653, and, from the Leibniz-Clarke correspondence, Leibniz’s 3rd (pp. 682-684), 4th (pp. 687-691), and 5th reply (696-721). See, also, Gottfried Leibniz, *Monadology and Other Philosophical Essays*, trans. by Paul and Anne Martin Schrecker (Engelwood Cliffs, N.J.: Macmillan Publishing Co., 1965). For the related writings of Bernhard Riemann which were the most crucial of the present writer’s readings during 1952, see *Bernhard Riemann’s Gesammelte Mathematische Werke*, trans. by H. Weber (New York: Dover Publications, 1953); see “Über die

Hypothesen, welche der Geometrie zu Grunde liegen (On the Hypotheses Which Underlie Geometry)” (1854), pp. 272-287; see, also, “*Lehrsätze aus der analysis situs für die Theorie der Integrale von zweigliedrigen vollständigen Differentialien*” (1857). Among the present writer’s subsequent readings of Riemann which are relevant to the notions of applied Leibnizian *Analysis Situs*, see, most emphatically, the collection of posthumously published fragments from work of the year 1853 (*I. Zur Psychologie und Metaphysik, II. Erkenntnistheoretisches, III. Naturphilosophie*), pp. 507-538, and, with aid of the preface supplied by M. Noether and W. Wirtinger (pp. iii-vi of the same volume’s appended *Nachträge*), Riemann’s celebrated (1858-1859) “*Vorlesungen über die hypergeometrische Reihe*” (pp. 69-93) points to the kinds of mathematical implications of musical memory’s act of “time-reversal,” which the writer locates as central to the efficiency of Mozart’s discoveries in motivic thorough-composition.

9. Leibniz identified this as the method of “necessary and sufficient reason.” This is the same notion represented by the fundamental discoveries for physics by Bernhard Riemann, respecting the characteristic “curvature” of a specific physical space-time, among an orderable series of what are, from a deductive standpoint, mutually inconsistent such physical space-times. [Bernhard Riemann, “Über die Hypothesen, welche der Geometrie zu Grunde liegen,” *loc. cit.*]

public performance of a single work!), the professional musical careers of singers have come to depend upon conditioning themselves to the irrational standards of elevated pitch and muddled registration, the which have been enforced by the merchants of the concert-hall and recording industry, with such included results as early destruction of potentially outstanding singing voices.

The hard choice which, thus, confronted us, as it does others, was whether to seek out and cling to the truth, or, as most of today's, relatively more vulnerable, younger professionals, and, also, others have done, to submit to what passes today for "politically correct" ideas, of hoaxster Helmholtz, Joseph Goebbels, *et al.*, about professional standards for pitch, registration, and so on. During recent time, the cost to a young professional's musical career, for preferring truth to elevated pitch, might be considerable, even fatal to a young career. In the alternative, the cost which relatively so many do pay, as price for making the "politically correct" choice of success, is the weakening of one's moral fiber, the loss of otherwise attainable benefits of cognitive development of one's mind, and, for some, the additional price, of early end to a promising young singing voice.

During the course of the 1980's, we discovered, that, respecting the crucial issues so confronted, most of the relevant, outstanding musical artists, vocalists most frequently, either agreed with our view, or found the case we presented to be, at least, of significant merit, implicitly consistent with crucial principles. The relevant political problem had been, that these professionals were not organized to fight these issues in that necessary, allegedly egregious manner, to which the writer's association has committed itself in defense of truth, in science and politics.

On those premises, this writer therefore proposed, first during Spring 1981, that his relevant associates commit themselves to producing a music manual. It was proposed, at that time, that this manual, when published, would serve as the guidon, around which to rally ourselves, and also others, to the cause of music, to the defense of what Johannes Kepler and Leibniz termed

10. The first effort to institutionalize A=440 was a conference organized in 1939 by Nazi Propaganda Minister Joseph Goebbels, who had standardized A=440 as the official Nazi German pitch. Professor Robert Dussaut of the National Conservatory of Paris told the French press that, "by September 1938, the Acoustic Committee of Radio Berlin requested the British Standard Association to organize in London a congress to adopt internationally the German Radio tuning of 440 periods. The congress was held in London, a very short time before the War, in May-June 1939. No French composer was invited. The decision to raise the pitch was thus taken without consulting French musicians, and against their will." *A Manual On the Rudiments of Tuning and Registration, op. cit.*, p. 15.

reason, against the irrationalist arrogance of Kantians, neo-Kantians, and contemporary cultural modernity and *kitsch*. At the outset, the premise for undertaking such publication, was not that we possessed, then, even the majority of the answers we must address, but that, by adopting the task, and preparing to state a case publicly, we would oblige ourselves to do the preparatory work, as we were accustomed to prepare our published scientific and political intelligence work-product: in such a way that what we developed for publication, would be nothing of which we need be ashamed before the eyes of the best past or future composers and performers.

So, the success of Book I was effected. So, a comparable usefulness, and, above all, truthfulness, is sought for Book II.

What Lies Behind the Notes?

Focus now, upon the functional significance of the writer's preferred rephrasing of Furtwängler's utterance, "performing from behind the intervals." For the purposes of discussion of the following topic, reference the illustrative case provided by Wolfgang Mozart's (K. 618) motet, *Ave Verum Corpus*.¹¹ In short, focus upon that role of the principle of *memory of the future*, which plays a determining role in defining the success of the composition, or performance of all Classical art-forms, motivic thorough-composition most emphatically.

To situate the reference to motivic thorough-composition for this purpose, the following set of observations is supplied.

First, until the very early 1990's, when Maestro Norbert Brainin pointed out an earlier, crucial discovery of his own on this matter,¹² the present writer had attributed the development of Classical motivic thorough-composition, entirely, to Mozart's original, Bachian discoveries of the early to middle 1780's, as reflected in works such as his six "Haydn" quartets, and, as noted above, the K. 475 keyboard Fantasy. Focus upon the K. 475 Fantasy. Once this work were reexamined, both from the standpoint of what is made possible by

11. See Mindy Pechenuk, "Mozart's *Ave Verum Corpus*: A Crucial Proof of Mozart's Discovery, and a Short Pedagogical Exercise in Musical Memory," *Fidelio*, Winter 1996 (Vol. V, No. 4), pp. 34-45.

12. On this specific matter, see Lyndon H. LaRouche, Jr., "Musical Memory and Thorough-Composition," *Executive Intelligence Review*, Sept. 1, 1995 (Vol. 22, No. 35), and "Norbert Brainin on *Motivführung*," *Executive Intelligence Review*, Sept. 22, 1995 (Vol. 22, No. 38) [also *Fidelio*, Winter 1995 (Vol. IV, No. 4)].

J.S. Bach's development of well-tempered vocal polyphony, and from the standpoint of "musical memory" in performance of compositions reflecting Mozart's contribution to development of Classical motivic thorough-composition, the apparent "secret" of Wilhelm Furtwängler is rendered a transparent principle.

At this moment, the writer must invade the innermost privacy of the reader's mind. What is music? Put aside all of the typical varieties of sophistry, invoked by those, such as writers of program notes and recording dust-jackets, who seek to divert attention from the deep implications of that question. Address the underlying substance of the matter. In which experience, within the sovereignly private, cognitive processes of the individual mind, might we recognize the relevant principle efficiently at work?¹³ What is the quality of experience, within the sovereign bounds of the individual cognitive processes, within which one encounters the specific phenomenon which corresponds to the Classical mode of composition and performance? By what means can we supply a rigorous proof of the existence, and efficiency of that principle?

More narrowly, what lies within the experience of such music, the which has a specific power to engage an inner passion of the mind with the compelling attraction which a Bach, Mozart, Beethoven, Brahms commands among musically literate persons of high-grade cognitive and moral development? Or, to say the same thing: what is the essential difference, between passably competent, Classical performance of a Mozart, Beethoven, or Brahms composition, and what is arguably a technically accomplished (by typical contemporary standards) travesty, ostensibly in performance of the identical set of notes?

The only precise, and also concise answer, invokes the meaning of a Classical Greek term, *agapē*, as that term is defined by Plato, and as the Christian Apostle Paul, as in his I Corinthians 13, adopts fully and exactly Plato's meaning for that same term.¹⁴ This quality takes us to the core of that which sets the characteristic feature of the individual member of the human species, apart from, and absolutely above all other living species. It is the core of what we know as Classical music, as this may be traced through J.S. Bach's revolution in well-tempered polyphony, into the discovery and development of the method of

motivic thorough-composition by Wolfgang Mozart, Beethoven, Brahms, *et al.*¹⁵ The essence of great Classical composition and performance, is *agapē*.

Locate this quality of *agapē* in the domain of scientific creativity. Then, once that is done, bring the insight so developed back to the corresponding features of Classical composition.

In researches into the deep, pre-historic past of mankind, our ability to demonstrate that certain spoor should be assigned to the presence of *homo sapiens*, rather than, perhaps, some higher ape, depends upon showing a rigorously defined, cognitive factor, in the situation, as implied by the evidence. The proof for existence of that cognitive function is betrayed only for the case, in which the spoor betrays an antecedent act of discovery which is of the type we associate, in modern times, with a valid discovery of physical principle.

In modern scientific vocabulary, this definition of "principle" coheres with Bernhard Riemann's 1854 revolution in a physics viewed from the standpoint of higher geometries. In that sense, a valid principle is defined as that experimentally-based, rigorously defined discovery, the which obliges science to depart a physical space-time geometry of "*n* dimensions," for a superior geometry of "*n+1* dimensions."¹⁶ To restate that fairly in simpler, layman's terms: a validated new "axiom" of scientific knowledge, overturning previously accepted belief and practice. Implicitly, Riemann's method provides the archeologist with an exact standard to be applied as the indicated distinction between clearly human and merely ape-like activity.

There are two characteristic moments within scientific education and practice, which may be conveniently referenced as a way of affording the reader an indication of the kind of experience in which the efficient quality of *agapē* may be most readily, directly experienced as a distinct phenomenon. In the first case, the experience of the actual mental act of creating the idea which corresponds to a validated discovery of a new principle of nature. The

13. The writer employs the term "cognitive" to signify that feature of human mental processes which sets man absolutely apart from, and above all other living species: the quality which Immanuel Kant relegates to his poorly defined purgatory of synthetic judgment *a priori*, the quality of reason which exists entirely outside the narrow realm of Kant's understanding.

14. E.g., Plato, *Republic*, Book II: The difference in definition of the passion for justice (and, truth) among Socrates, Glaucon, and Thrasymachus.

15. In the discussions which occurred on the matter of selecting content for the composition of this Book II, the present writer had proposed an editorial plan in which the presentation of the modern instrumental palette, would adopt, as a point of departure, the difference in methods of composition of ensembles, which are best typified by comparing the work of C.P.E. Bach with that of a dedicated student of C.P.E. Bach's work, Joseph Haydn. In response to hearing of this proposal, Norbert Brainin exclaimed, "*Motivführung!*," and pinpointed Haydn's six string quartets, Opus 33 (the "Russian Quartets"), as the more than likely prompting for Mozart's own, subsequent discovery and development of what became, from approximately 1782-1783 onward, the Bachian approach to motivic thorough-composition of Mozart, Beethoven, Brahms, *et al.* See footnote 12, above.

16. See footnotes 8 and 9, above.

second, is the experience of reenacting, in one's own mind, the mental experience of an original such discovery by another, historic, or other individual personality. Once that recognition is established for these clinical cases, it is then feasible to explore other topics, including motivic thorough-composition, for similar consideration.

The master's act of composing a Classical piece of motivic thorough-composition, and the insightful performer's presentation of the master's act of discovery, are analogous to the mental experiences enjoyed, respectively, by the original discoverer of a valid scientific principle, or, by the student who reenacts the mental experience of that original discovery. The essential quality of such mental acts, whether in science, in Classical music, or other expressions, is always the same; there is no difference between science and art, respecting the commonly underlying principle of individual human creativity.¹⁷

It is within those acts of discovery, whether in science, or in art, that we find the primary habitat of the special quality of intellectual motive power—i.e., *emotion!*—which Plato and the Apostle Paul identified commonly as *agapē*.

Creativity: The Non-Euclidean Model

The conceptions we are about to introduce at this point, are crucial. The reader is requested to follow each of the steps of the argument which follows, perhaps retracing

this argument several times, until the conception being presented becomes transparent.

As already indicated, the author's relevant discoveries, circa 1948-1952, respecting the epistemology of scientific and technological progress, were premised upon a deep commitment to Leibniz's outlook. That commitment was established during the writer's adolescence. It is relevant to note here, that that adolescent's grounding in Leibniz, had been developed, first, in opposition to British empiricism, and to Descartes. Later in his adolescence, the commitment had undergone further development, in countering the anti-Leibniz characteristics which he identified, at that time, with his study of I. Kant's *Critique of Pure Reason* and *Prolegomena to Any Future Metaphysics*. Still later, beginning 1948, the principal provocation which set the relevant discoveries afoot, was the fraudulent claim, by Massachusetts Institute of Technology (M.I.T.) Professor Norbert Wiener. Wiener claimed to have reduced human conceptions and their communication to a subject of what was described as "statistical information theory." It is crucial to the expository report supplied here, that the present writer's adolescent grounding in the Leibniz-Kant and related controversies of the Seventeenth and Eighteenth centuries, provided the essential standpoint from which the refutation of Wiener's radically positivist, neo-Kantian claim was undertaken.¹⁸

The issue posed by the wild claims of Bertrand Russell students Wiener, John Von Neumann, *et al.*, represented a

17. The contrary, irrationalist view, is at the center of the pervasive dogma of I. Kant's *Critiques*. Kant's irrationality is heavily underscored, respecting art as such, in his *Critique of Judgment*. This is the crucial point on which Friedrich Schiller warned his followers, such as Wilhelm von Humboldt, against the perniciousness of Kant's influence. Schiller's warning against Kant, is echoed prophetically by the anti-Romantic Heinrich Heine, in his *Religion and Philosophy in Germany*. During the Nineteenth century, G.W.F. Hegel's chief political ally, Professor Karl Friedrich von Savigny, took Kant's irrationalist dogma in aesthetics as a point of departure for decreeing a hermetic separation of *Geisteswissenschaft* (e.g., art) from *Naturwissenschaft*, science. Savigny's neo-Kantian irrationalism [of *Geisteswissenschaft* versus *Naturwissenschaft*] became the widespread premise for the apologies made in defense of Nineteenth-century, anti-Classical Romanticism, such as that of Franz Liszt, erstwhile pupil of [Ludwig van Beethoven: "that criminal!"] Carl Czerny, and also, later, the apologies for virulent, anti-Beethoven irrationalism of Richard Wagner.

18. Norbert Wiener, *Cybernetics* (New York: John Wiley, 1948). Wiener, a radical positivist in the tradition of Ernst Mach and Bertrand Russell, adapted the H-theorem, ironically, from the statistical mechanics of the anti-Mach, anti-positivist Ludwig Boltzmann, purporting, thus, to derive human thought and its communication from the kinetic theory of gases. Wiener relied upon the fact [see Morris Levitt, "Linearity and Entropy: Ludwig Boltzmann and the Second Law of Thermodynamics," *Fusion Energy*

Foundation Newsletter, Sept. 1976], that Boltzmann's ("H-theorem") formulations allow for a relatively improbable, local reversal of entropy; this served Wiener's purpose, of providing a seemingly rational (e.g., mathematical-physical) basis for measuring human ideas as a relative increase in order in a purely local aspect of a kinematic domain, thus measurable in terms of negative values for Boltzmann's H-theorem. There are weaknesses in Boltzmann's own work, when it is extended beyond the bounds of its axiomatically assumed special case; these fallacies arise from accepting the hereditary assumption of "linearity in the extremely small," of Rudolf Clausius' and J.C. Maxwell's relevant dogmas; but, the fallacies imposed upon Boltzmann, posthumously, after 1906, by such among his radical-positivist adversaries, and survivors, are entirely the concoction of the latter. It is notable, that the conception of the universe inhering in the relevant work of Wiener and Von Neumann, is traced, without interruption, from the "kinetic" social theory of Hobbes' *Leviathan*, via that Hobbesian "hedonistic calculus," of Giammaria Ortes and Pierre-Louis Maupertuis, on which Bentham relied in his *Introduction to The Principles of Morals and Legislation*, his *In Defense of Usury*, and his *In Defense of Pederasty*. Thomas Malthus' plagiarizing of the same Giammaria Ortes' 1790 publication on population, is part of the same set. It should be noted that Wiener's "information theory," and Von Neumann's theory of the brain, are each copies of the argument demanding the ban of metaphor from the English language, in Hobbes' *Leviathan*.

continuation of a central point of a shared tradition of several centuries, among the British empiricists and their allies, since Thomas Hobbes' *Leviathan*. Like Hobbes, the empiricists, Kantians, neo-Kantians, and positivists, have made it a cardinal precept of their dogma, that *metaphor* does not exist, because, they argue, it should not be permitted to exist. This same contention is the underlying assumption, and motive of Kant's *Critiques*; it is the axiomatic source of the referenced, fraudulent claims of Wiener *et al.* The recognition of this fact, that the crucial issue of this controversy was metaphor, was the present writer's starting-point for refuting Wiener *et al.*, circa 1948.

Let us look on the experience of those years with compassion for that reader who may be unfamiliar with some parts of this subject-matter. At the time, during the late 1940's, much labor was required to bring this writer to the conclusion reported here. In retrospect, it seems not so difficult, as a matter of principle, to recognize, that that quality of emotion experienced in successful concentration upon replicating a valid original discovery of principle in physical science, is identical with the quality of emotion underlying the experience of a successful Classical musical performance. Out of the same compassion for such readers, we may say, that the extension of this first conclusion, to show that this connection is extended to the domains of Classical tragedy, such as Aeschylus' and Shakespeare's works, and to Classical forms of poetry, also required considerable, if somewhat less additional effort, during the years the writer was working this out; in retrospect, that too, appears not so difficult, in principle.

In a similar sense, it was not so difficult, in principle, to show where the connection lay among these branches of science and art. Consider a student's rather typical reen-

actment (in any good school, or kindred setting) of the mental experience of an original discovery of principle.

Several features typical of such experiences, show us, that the prompting of this sort of discovery of principle, is exactly of the same quality as the role of true metaphor in Classical poetry, tragedy, and music. The German *lied*, from Wolfgang Mozart's "Das Veilchen" onward, is a most convenient illustration of the intersection of poetic and musical metaphor on this account.¹⁹ In all these types of musical and other cases, the term "metaphor" has a single, consistent functional significance.

Respecting any discovery of a scientific principle, metaphor confronted the person effecting that discovery (whether as an original discoverer, or a student in a properly run educational program), with a seemingly impossible irony. On the one side, the facts provoking the search for the discovery, were more than persuasive; yet, the only apparent conclusion to be drawn from that set of facts, is that what one had believed about nature (for example), and relied upon in a very practical sense, up to that point, was now shown to be substantially false.

In such cases, there is no *deductive*, e.g., *linear*, form of link between the challenged, pre-existing scientific belief, and the reality of the newly considered evidence. Both the evidence, and that which the evidence contradicts, are provably truthful reflections of the same level of development of the cognitive processes of that mind, the which senses itself obliged by reason to accept both contradictory claims. Yet, once the two contradictory claims are juxtaposed to one another, a seemingly impossible contradiction appears. There is no symbolic meaning here; it is something much more profound, and, unlike symbolism, altogether real.²⁰ There, in that specific quality of circumstance, that specific quality of irony, lies the

19. The credit for showing Mozart's "Das Veilchen" as a breakthrough in the application of motivic thorough-composition to song, was the joint work of several collaborators, notably prompted by the argument of Kathy Wolfe, the co-editor of Book I. Mozart's "Abendempfindung" is an exquisite example of the same principle; his *Ave Verum Corpus*, as noted elsewhere, embodies the principle in an advanced way, and to relative perfection.

20. For example, Hamlet's Act III, Scene I soliloquy: ". . . But that the dread of something after death,— / The undiscover'd country, from whose bourn / No traveller returns—puzzles the will, / And makes us rather bear those ills we have / Than fly to others that we know not of? / Thus conscience does make cowards of us all; / And thus the native hue of resolution / Is sicklied o'er with the pale cast of thought; / And enterprises of great pith and moment, / With this regard, their currents turn awry, / And lose the name of action." This soliloquy, set in the context provided by the closing soliloquy of the preceding act, expresses Shakespeare's central, *motivic* germ, upon which the derivation of the entirety of that play's composition depends. This is to be compared with Friedrich Schiller's notion of this principle of composition of tragedy. The apparently unbridgeable distinction between the

contending two, each ostensibly truthful principles, exemplifies the absolute degree of irony on which the composition of great Classical tragedy pivots; the inability of the Hamlets, is the lack of will to muster that specific quality of emotion, through which breakthroughs to a new, higher, resolving order of comprehension, may be secured. That failure to force through an intellectual resolution of the conflict, through attaining a higher level of comprehension of the contradiction itself, is the defining, underlying subject-matter of all great Classical tragedy, from its root in the Homeric epics, through the compositions of Aeschylus, Shakespeare, and Schiller.

21. In bad reviews, great Classical musical compositions are degraded to products of symbolism. That is the vantage-point of the worst apologists for the Romantic school, and for the still more decadent effluvia produced in the course of the present century. In metaphor, there is no symbolism, a distinction which separates metaphor absolutely from certain less rigorous forms of irony. All metaphor represents a well-defined paradox; the most important metaphors, in science and in Classical art, present an ontological paradox. The essence of motivic thorough-composition, is of the form of ontological paradox.

Mozart's 'Das Veilchen'



Goethe's poems were part of a conceptual advance in poetry during the wave of optimism which swept Europe at the time of the American Revolution. They created new possibilities for musical composers—a fact to which Goethe's own self-involvement seems to have blinded him. Mozart, however, saw it clearly. He took "Das Veilchen," and created a musical work far beyond anything in the poem.

The poem is constructed in three strophes, which overall scheme itself contains a similar sonata-like form. Each strophe consists of two groups of three and four lines. The ends of these groups produce a rhyme across the first two strophes: "Veilchen . . . sang; Weilchen . . . lang," with similar poetic mood. The final strophe departs from this, with "Veilchen . . . doch" producing a distinct development.

Mozart saw in this poem the internal rates of development necessary to carry out an opera in microcosm, a new quality of *One* from the poem's *many* ironies. His use of voice registration was therefore much more complex. Mozart scanned the poem as a unit-conception from the ultimate singularity, the final verbal transformation: How does the violet die? Answer: "Durch sie, zu ihren Füßen." There he would require a strategic register shift.

The rising vowel-pitch vocalization of the repeated "Durch sie," /u/-/i/, /u/-/i/, indicated that the phrase rise to the desired register shift.

Once Mozart chose a soprano/tenor registration for the singer, G major was a clear candidate for the key of the song, because the line rises from the fifth D to the tonic G, in exactly four notes (D-E-F#-G) for the four measures needed for the phrases: "Und *sterb* ich denn, so *sterb* ich doch, / durch *sie*, durch *sie*." This key has a shift into the third register on the plaintive seventh degree of the

scale, creating a humorous irony on the first "durch sie," which then resolves to G when it is repeated. . . .

Mozart treats Goethe's three strophes by creating a musical *transfinite series*, an " $A \rightarrow B \rightarrow C$ transformation." In a musical transfinite, the opening thematic statement *A*, is followed by a development passage *B*, followed by a closing *C*, which is either a restatement of theme *A*, or something new. Between the passages *A*, *B*, and *C* there are singularities, one between *A* and *B*, and a second, of a different order, between *B* and *C*. Thus, *three* is the smallest number of distinct musical passages, which can define two distinct types of singularities. Such a *progressing quality of singularities* is one necessary condition of a transfinite series. The musician will recognize that the Classical *sonata form* is the usual musical term for such an " $A \rightarrow B \rightarrow C$ transformation."

Each *A*, *B*, *C* is the musical equivalent of a simple system, analogous to the simple mathematical system of axioms and postulates, which the "logical," Kantian observer assumes to be fixed. The creative composer, such as Mozart, delights in presenting such a musical idea *A*, only to take it apart or supersede it with new musical ideas *B*, and then *C*, in the same manner in which a scientist overturns what the Kantian assumes to be an axiomatic geometry, by performing a crucial experiment disproving a basic axiom. The succession of transformations so ordered, represents an indivisible *unit-process*.

Mozart has deliberately set up a transfinite principle of change from one strophe to the next, such that there is an *increasing density of singularities*. This, particularly in the keyboard voices, is something entirely new in music, with Mozart's *lieder* from 1785 on.

—from "A Manual On the Rudiments of Tuning and Registration,"
Book I, Chapter 11

metaphor, just exactly as we encounter Classical metaphor in tragedy, poetry, and in Classical motivic thorough-composition.²¹

In each medium—science, poetry, tragedy, music—this relatively absolute degree of irony arises. In both cases, science and art, solution depends upon mustering a

special sort of passion, that which Plato and the Apostle Paul identify by the term *agapē*. It is this special quality of emotion, which is required to summon the individual mind's cognitive powers of discovery of a higher principle, and to sustain that summoned power of concentration, beyond the point in that problem-solving process, at

which a validatable form of discovered new principle has been generated.

Throughout the delimited, but nonetheless extensive history of this subject-matter, from the Vedic philology of Sanskrit's Panini, onward, and presumably also in the teachings of Confucius, the same clear distinction between the "sacred" (e.g., the Platonic Greek *agapē*) and "profane" (e.g., the Platonic Greek *eros*), which confront us in the New Testament's Gospel of St. John, and Epistles of St. Paul, may be adduced.

These emotions are, demonstrably, not of the same species. *Eros* is manifestly linear, and otherwise both fanatically *deductive* (e.g., Aristotelian), and *symbolic*, in the characteristic patterns of mental behavior with which it is associated. In words appropriate to the context of Wiener's and Von Neumann's dogmas, the ordering-principle which the Shakti-Shiva/Gaea-Python-Dionysos/Isis-Osiris syndrome of *eros* generates, is, like Hamlet's obsession-ridden, "Macho" rage, characteristically *entropic*, the characteristic expression of a stagnant, backward, or even degenerating form of culture. *Agapē* belongs to a higher realm; its characteristic, for reasons of evidence which are to be indicated in this introduction, is *anti-entropy*. This anti-entropic quality of *agapē*, is expressed as its unique function in producing those forms of insight, as an anti-entropic ordering-principle, whose typical action resolves the kind of absolute ironies identified immediately above. Upon this kind of demonstration, the rational comprehension of the principle of metaphor, in art and in science, depends absolutely.

It must be emphasized here, that the emotion of *agapē* is "two-dimensional." In the higher regions of that domain which Leibniz sometimes identified as *Analysis Situs*, where the power of *agapē* resides, it is, as the term "emotion" implies, an impulse. It is also an upward-directed impulse, in the sense of "upward" attributable to "anti-entropy." It is an impulse which orders the direction of Platonic, creative change in thought, an agency, function, conquering the contradictions of the present, by rising to a higher state of human thought and action.²²

This quality of "upward-directedness," is seen most readily in respect to those changes in mankind's relation to the universe, which are the result of scientific and technological progress. Once we have recognized the way in

which validated discoveries of physical principle are generated within the sovereign precincts of an individual's cognitive processes, and have recognized the essential role which the emotional impulse of *agapē* performs in that process, the doors to comprehension have been opened.

We can measure mankind's power over nature, in but one way: the increase of the human species' potential relative population-density, as this correlates positively with both improvement of the demographic characteristics of relevant entire populations, and with the relative increase of both physical output *per capita*, and with related increases of consumption of market-baskets composed of such physical output.²³ All increase in ranges of man's power over nature, so measured, is attributable to such discoveries of valid principles: whether as original discoveries, or as replications of such original discoveries, the latter as in the mind of an individual student. Thus, the manner in which the individual generates discovery of valid principles, is both the essential distinction of man from the beasts, and is the process, within the mind of each relevant individual person, through which this progress is generated.

From this, two leading questions are resolved, at least in first approximation.

First, that this emotional quality, termed *agapē*, is the distinctive essence of the human individual, the creative power which Moses' Book of Genesis identifies as man and woman made in the image of God, the qualities which the Latin of the Augustinian tradition names *imago dei* and *capax dei*.

Second, the fact that this same, distinctive quality of emotion is the Platonic principle of *change*, constituting the underlying ontological actuality of Classical forms of art, indicates a necessary feature of such forms of art, something essential to promoting that quality of the individual which is *imago dei*. Thus far, such considerations properly define the meaning of the term "progress," as applied to science, technology, Classical art-forms, and society in general.

To go much further than those important preliminary findings, as they were assembled during 1948-1951, as to go into the domain of science of physical economy, requires an additional effort. Thus, in 1952, a reexamination of Riemann's celebrated habilitation dissertation proved indispensable.²⁴

22. The "agency" referenced here, echoes implied solutions to the principle of ontological paradoxes set forth in Plato's *Parmenides*. Plato's *Timaeus* is of crucial relevance in this connection.

23. For an introduction to the notion of potential relative population-density, see Lyndon H. LaRouche, Jr., *So, You Wish To Learn All About Economics?*, 2nd ed. (Washington, D.C.: EIR News Service, 1995).

24. *Op. cit.*

For reasons which are made much clearer after mastery of relevant features within Riemann's leading contribution to physical science, all competent mathematics, and its internal contradictions, can be represented only in the language of geometry, not from what modern academic practice regards as an "algebraic" standpoint in method.²⁵ Riemann's habilitation dissertation, which addresses and solves the leading problems left over by all preceding geometricians, "from Euclid through Legendre,"²⁶ redefines all mathematics from the standpoint of a new conception of geometry, itself based in the rigorous practice of experimental, rather than mathematical physics. This is indispensable for solving both crucial issues of a science of physical economy, and also crucial for rendering transparent the elementary principles underlying, and driving Classical modes of motivic thorough-composition.

With that objective placed in view, now consider, the present writer's brief summation of those aspects of Riemann's discoveries which are crucial for the problem of science and music being addressed here. The writer has interpolated points here which he regards as implicit in Riemann's work, and which are indispensable for adequate comprehension of his work, but which are not explicitly elaborated in Riemann's dissertation.

"From Euclid through Legendre," geometry depended upon axiomatic assumptions accepted as if they were self-evident. On more careful inspection, it should be evident, that these assumptions are not necessarily true. Furthermore, the interrelationship among those axiomatic assumptions, is left entirely in obscurity. Most conspicuous, even today, generally accepted classroom mathematics relies upon the absurd doctrine, that extension in space and time proceeds in perfect continuity, with no possibility of interruption, even in the extremely small. Indeed, every effort to prove that assumption, such as the notorious tautological hoax concocted by the celebrated Leon-

hard Euler, was premised upon a geometry which presumed perfect continuity, axiomatically.²⁷ Similarly, the assumption that extension in space and time must be unbounded, was shown to have been arbitrary, and, in fact, false.

Riemann's argument, repeated in the concluding sentence of his dissertation, is, that, to arrive at a suitable design of geometry for physics, we must depart the realm of mathematics, for the realm of experimental physics. This is the key to solving the crucial problems of representation of both living processes, and all processes which, like physical economy and Classical musical composition, are defined by the higher processes of the individual human cognitive processes. Moreover, since living processes, and cognitive processes, are efficient modes of existence within the universe as a whole, there could be no universal physics whose fundamental laws were not coherent with that anti-entropic principle central to human cognition.

In retrospect, the crucial opening feature of Riemann's relevant discovery, is elegantly elementary. Given, an ontological paradox of the type indicated: an undeniable set of events implicitly overturns what appears to have been the equally undeniable experimental authority of a system of scientific thought which represented, up to that moment, the most advanced, most solidly established opinion. Two successive experimental steps must be taken.

First, the disturbing experimental phenomena must be validated, or the paradoxical implications refuted. This must be done experimentally. It must be done in the manner prescribed by the founder of modern science, Cardinal Nicolaus of Cusa; it must be accomplished through measurement. If it is validated, then what is demonstrated in this way, is a validated new principle of

25. The case of the consummate work establishing modern arithmetic, Carl F. Gauss' *Disquisitiones Arithmeticae*, is the proverbial exception which proves the rule. This is the entry into what Gauss identifies as "higher arithmetic," by means of creating, repeatedly, the type of contradictions, within arithmetic, which we have identified in the preceding paragraphs. The mind of the author of that most remarkable work, thinks in the language of higher geometry. Riemann's references to the precedents in Gauss, upon which he himself relied for developing higher, Riemannian geometries, underscore the approach which must be employed.

26. A.-M. Legendre, the author of the comprehensive work in geometry, composed as the basis for the mathematics education program of Gaspard Monge's famous *Ecole Polytechnique*. Legendre, the teacher of Riemann's sponsor, Lejeune Dirichlet, was, together with Gauss, a principal current leading into Riemann's revolutionary, 1854 habilitation dissertation.

27. Euler was a key figure among those Leibniz-haters imposed upon the Berlin Academy of Science by King Frederick "The Great" of Prussia. Together with his accomplice, Pierre-Louis Maupertuis, Euler participated as a leading figure in several hoaxes against the memory of Leibniz. One was the notorious "least action" hoax, in which Euler gave witting support to hoaxter Maupertuis, in a matter which led, subsequently, to Maupertuis' leaving Berlin in disgrace. Maupertuis, together with Giammaria Ortes, were the original authors of the "hedonistic calculus," whose development leads directly into the "systems analysis" hoaxes of John Von Neumann *et al.* The idea that a mathematics for physics could be premised adequately upon infinite series, was the product of a hoax concocted by Euler himself, in his attacks on the work of Leibniz posthumously published under the title *Monadology*. This Euler hoax led into the Nineteenth-century efforts, of Clausius, Maxwell, Hermite, *et al.*, to impose upon mathematical physics the arbitrary, false assumption, that physical relations could be represented adequately by functions of series, which assume linear extension, axiomatically, into the extremely small. Cf. B. Riemann, habilitation dissertation, on the matter of the extremely small.

science. However, by no stretch of imagination, does that resolve the issues. Existing physics, for example, must be purged of those definitions, axioms, and postulates which are discredited by this evidence. That is not yet sufficient; we must not simply add the newly validated principle to a cleaned-up version of the old physics. It is on the paradox which arises at precisely that latter point, that Riemann's genius shines through.

Second: The crucial question posed, bears upon a problematic issue we have mentioned above. The fallacy of preexisting geometry was not merely that some among the definitions, axioms, and postulates were of doubtful authority; the question of how the axioms might interrelate, was not properly addressed at all. This was the problem which Leibniz had referenced, in a preliminary way, under the rubric of *Analysis Situs*.²⁸

By definition, any experimentally validated principle of (for example) physics, can be regarded as a dimension of an "*n*-dimensional" physical-space-time geometry. This is necessary, since the principle was validated by measurement; that is to say, it was validated by measurement of *extension*. This includes experimentally grounded, axiomatic assumptions respecting space and time. The question posed, is: How do these "*n*" dimensions interrelate, to yield an effect which is characteristic of that physical space-time? It was Riemann's genius, to recognize in the experimental applications which Carl Gauss had made in applying his approach to bi-quadratic residues, to crucial measurements in astrophysics, geodesy, and geomagnetism, the key to crucial implications of the approach to a general theory of curved surfaces rooted in the generalization from such measurements.

The consequence of seeing those interconnections, calls forth recollection of Christiaan Huyghens' discovery of isochronicity in the gravitational field, and the, subsequent, combined outgrowths of the work of Ole Rømer, Huyghens, Leibniz, and Jean Bernouilli, in showing the coherence of this isochronicity in the gravitational field, with that same quality manifest in refraction of light propagated at a finite rate of retarded propagation.²⁹ Thus, the assumed, functionally efficient interrelationship among "*n* dimensions," could be reduced to a form of experimental validation through measurement of the "curvature" of the physical-space-time domain referenced.

28. *Op. cit.*

29. Christiaan Huyghens, *The Pendulum Clock*, trans. by Richard Blackwell (Ames, Iowa: Iowa State University Press, 1986). Jean Bernouilli, in David E. Smith, *A Source Book in Mathematics* (New York: Dover Publications, 1959), pp. 644-655. Poul Rasmussen, "Ole Rømer and the Discovery of the Speed of Light," *21st Century Science & Technology*, Spring 1993 (Vol. 6, No. 1).

The notions of extension in space and time, were fully subject to this same experimental method.

Hence, Riemann was the first to develop a truly "non-Euclidean" geometry. Other tactics, such as those which merely challenged the so-called "parallel postulate," are properly viewed as "neo-Euclidean," rather than "non-Euclidean," since they do not challenge directly the crucial, all-encompassing, axiomatic flaws of Euclidean geometry which we identified here.

What Art Must Learn From Euclid

The crucial distinction between that science and art which was developed by Classical Greece, as distinct from the work of the Greeks' Egyptian, anti-Mesopotamia, anti-Canaanite sponsors, is expressed most clearly by Plato's notion of *ideas*.³⁰ The possibility of modern science depends upon, the relatively perfected form of that Classical Greek notion of *ideas*, as that notion is defined by Plato. This is exemplified by Plato's Socratic method of hypothesis, upon which the possibility of Europe's development depended absolutely. What is passed down to modern times as Euclid's geometry, embodies a crucial kind of demonstration of that principle; Riemann's accomplishment was, thus, to have corrected the errors of Euclid, by the same Socratic method employed to produce a geometry which had been, up to Riemann's time, one of the great works of antiquity.

This, as we shall show, has crucial importance for rendering transparent the underlying principle of motivic thorough-composition.

30. Following the period of that Mediterranean "dark age" which bridges the end of the Second Millennium B.C. and the opening centuries of the First, Egypt emerged as the center of a kind of renaissance of civilization within the Mediterranean littoral and adjoining areas. Against Egypt's traditional enemies, Babylon and Canaanite Tyre, Egypt extended its sympathies to the Ionian Greeks, in the eastern Mediterranean, and to the Etruscans, in the western Mediterranean. This becomes visible to scholars for the period of the Eighth and Seventh centuries B.C. The crushing of Tyre and Babylon (Persian Empire) by Cyrenaica-allied Alexander the Great, is the predominantly happy, if imperfect outcome of this process. For the competent understanding of European civilization today, the crucial feature of superiority of the Classical Greek culture, is that centered in the work and heritage of Plato, in the notion of *ideas*. The hegemony of Classical Greek thought, and language-culture, in the eastern Mediterranean, following Alexander's conquests, is exemplified by the role of the Platonic Academy's great Eratosthenes, in Egypt, and Archimedes in *Magna Graecia*. The cultural superiority of these Greeks, over the Egyptian culture of that time, is centered in the development of the notion of the *idea* by Classical Greeks, Plato most notably.

Euclid's geometry itself becomes transparent, if we examine its characteristic, historical features from the vantage-point of Plato's Socratic method. Briefly, given a set of propositions, which appear, during that time, to have been proven, as in an Egyptian way, by construction. Enter a Socrates.

What are the implicitly underlying assumptions about space which may be shown to be common to this array of propositions? The result is an array of definitions, axioms, and postulates. It is recognized, under Socrates' leadership of the dialogue, that when we might attempt to show an equivalence among any of this collection of propositions, we are necessarily implying that we believe certain axiomatic assumptions, that we are proceeding from certain adducible assumptions, of an axiomatic quality, respecting the general nature of space, and also, implicitly, of time.

The ensuing step, then, is to define, as theorems, those propositions which are apparently proven by construction, and also deductively consistent with the adduced set of definitions, axioms, and postulates. This Socratic method in geometry, although it continues to be rooted in principles of construction, distinguishes between propositions which, respectively, are, and are not deductively consistent with the adduced, underlying set of definitions, axioms, and postulates. As distinct from the largely associative, irrational method of the Sophists, deduction is supplied a rigorous form through that development of geometry, which may be traced today from Pythagoras and Thales, through Plato and his Academy of Athens.³¹ In deductive geometry, those propositions which satisfy that requirement, are known as *theorems*.

The set of definitions, axioms, and postulates so situated, is exemplary of the most elementary of the literate uses of the term *hypothesis*. Specifically, this is a *deductive hypothesis*, as distinguished from higher forms, including *non-linear* hypotheses. Once the hypothesis underlying a known set of propositions is established, we may anticipate a larger number of propositions than those originally considered, which might also be consistent with that deductive hypothesis. The implicitly open-ended collection of theorems which might satisfy that latter requirement, may be named a *theorem-lattice*; such a theorem-lattice represents a *type* of propositions, the simplest form of a One solving paradoxes of that type represented by Plato's *Parmenides*.

The commonly underlying principle of organization internal to each such type of deductive lattice, is *extension*,

31. This development of deductive method to its highest level, by means of attacks upon the fallacies of the archetypical sophists of the Eleatic strain, is represented by the construction of the ontological paradox central to Plato's *Parmenides*.

as that principle is integral to the notion of measurement. This notion of extension, is the notion of a type of extension characteristic of the domain of the relevant choice of theorem-lattice.³² All scientific knowledge is premised upon matters pertaining to a generalized notion of extension. Hence, all rational thought, is intrinsically geometrical in character.

In first approximation, all deductively consistent systems may be described in terms of theorem-lattices. However, as we have considered crucial features of Riemann's discovery here, the essence of human knowledge is *change*, change of hypothesis, this in the sense in which the problem of ontological paradox is featured in Plato's *Parmenides*. In short, the characteristic of human knowledge, and existence, is not expressible in the mode of deductive mathematics, but, rather, must be expressed as *change*, from one hypothesis, to another. The standard for change, is to proceed from a relatively inferior, to superior hypothesis. The action of scientific-revolutionary change, from a relatively inferior, to relatively superior hypothesis, is the characteristic of human progress, human knowledge, and of the lawful composition of that universe, whose mastery mankind expresses through increases in potential relative population-density of our species.

The process of revolutionary change occurs only through the medium of metaphor, as the relevant principle of contradiction has been stated, above. Just as Euclid was necessary, that the work of descriptive geometry by Gaspard Monge *et al.*, the work of Gauss, and so forth, might make Riemann's overturning Euclid feasible, so all human progress, all human knowledge is premised upon that form of revolutionary change which appears as the *agapic* quality of solution to an ontological paradox.³³

32. Inverted, that becomes a reflection of Leibniz's notion of *necessary and sufficient reason*: the hypothesis which coincides with the characteristic form of extension of the domain in which the relevant occurrences are situated.

33. In no way, does this fact justify the fatalism of those sundry, gnostic doctrines of history peddled by the notorious G.W.F. Hegel, the irrationalist dogmas of neo-Kantian K. Friedrich Savigny, or the "objective," deterministic "theories of history" of the Social Democrats *et al.* The history of the human species is based upon a voluntary principle: one may do anything it is physically possible for one to do, and the universe may react even more freely in its response. The "dark ages" in human existence, for example, do not occur because of any inevitably cyclic character of history; each occurs because the relevant, extant culture has violated the principles of reason, either with such violence, or persistence, this to the effect, that the continued existence of the human species requires that mankind be purged of that offensive, or simply degenerate culture. The order of ideas to which we refer here, the epistemological ordering, is the resource from which men, women, and societies, select, or evade, voluntarily, those choices of behavior which determine the pathways history will follow.

Mozart's String Quartet K. 464

In response to Haydn's Opus 33, Mozart, over the next few years, composed six string quartets which integrated Haydn's development of the *Motivführung*, with J.S. Bach's discovery and elaboration of the properties of the major/minor mode. Mozart dedicated these six quartets to Haydn. Of particular interest is the string quartet K. 464 in A major, for it is known that Beethoven studied this quartet closely.

Here Mozart increases the density of change by generating the composition from a more condensed motivic idea. Notice the way Mozart constructs the initial idea such that a seemingly simple, two-measure idea has embedded within it a fundamental paradox. In measure 1, the quartet begins with a simultaneous division of the octave into a major third and a perfect fifth (A-A-C#-E). In the last half of the second beat of measure 1, the first violin descends one half-step to a D#, while the other instruments hold their original notes. The listener is presented with the singularity of the Lydian interval when he hears this half-step change from E to D# in relation to the A's of the 'cello and viola. Now the violin, playing alone, ascends up a minor third to F#, taking it across the soprano's register shift between F and F#. Then it descends step-wise a fourth to C# (playing a D-natural in contrast to the previous D#). Then it ascends again a minor third to the E on which it started, and then it descends step-wise a fifth to an A, where it is joined by the other instruments which, when combined, play the same notes as those on which the piece began, except, significantly, in a different order (C#-E-E-A). This time the E is doubled instead of the A.

From measure 3 to measure 4, all four instruments play simultaneous quarter notes. To summa-

rize, both the viola and the second violin start on the same note (E) and end on the same note (B), but an octave apart. Thus, the second violin ascends a fifth, while the viola descends the complement, a fourth. The first violin then ascends step-wise a fourth (A-B-C#-D). In addition, the second violin also plays the same E with each note. Even though this E doesn't change its pitch, it is heard differently every time it is played, *because everything around it changes*.

A new Lydian interval, G#-D, is formed on the second beat of measure 3, between the viola and second violin, and on the first beat of measure 4, between the 'cello and the first violin.

All instruments rest on the second beat of measure 4, directing the listener to bind what has just been heard, into a *One*.

Look at the types and density of audible singularities which are presented in these first four measures. For example, the Lydian interval in measure 1; the changes in registration in measures 1 and 2; the difference between ascending and descending intervals, and the complementarity of the fourth and the fifth, in measures 3 and 4. All these singularities are embedded in what Mozart has organized into a seemingly simple idea, which the listener then re-creates in his mind as a thought-object which itself is "unheard."

From the last beat of measure 4 to the first beat of measure 7, the quartet subjects what has just been heard to a transformation which produces a significant difference in the behavior of the singularities previously generated. . . .

—Bruce Director,
from "What Mathematics Can Learn
from Classical Music"

Fidelio, Winter 1994 (Vol. III, No. 4)

The pervasive characteristic function among all of those forms of art which meet the standard of Classical art-forms, is to celebrate those qualities of cognition by means of which such metaphors are posed, and their valid resolutions accomplished. Such exemplary paintings as Leonardo da Vinci's "Virgin of the Grotto," and Raphael's "School of Athens" and "Transfiguration," typify the role of metaphor. From the Classical Greek sculpture, the life-like effect of an image, such as the work of a Scopas, as if caught in mid-motion, as contrasted with the tripod-like sterility of archaic Greek and Egyptian statuary, also typifies the role of metaphorical qualities of irony in the plastic media.

Platonic *ideas* are defined, with respect to his view of geometry, in the following ways. Musical ideas are a special type of such Platonic ideas.

We have seen how a Platonic idea, known as an hypothesis (in this instance, a deductive hypothesis), subsumes an open-ended collection of ideas, known as theorems. We have addressed the fact, that there are successions of many individual hypotheses, which are subsumed, as a succession, through metaphor. That is, by those discovered principles which oblige us to change not only the axioms of existing hypotheses, but to develop an experimentally validated replacement for that hypothesis, a replacement which reflects the interrelationship among the new array of axioms.

Successive such, metaphor-driven changes in hypothesis, imply a principle of *change* common to these successions: a common characteristic of each and all among those successive *changes of hypothesis*. Our attention here, is focussed, emphatically, upon sequences of hypotheses whose ordering is characteristically anti-entropic, hence, epistemologically *agapic*. In Plato, such orderings fall within the domain of *higher hypothesis*, or, of *hypothesizing the higher hypothesis*; both latter define the domain which Leibniz referenced by use of the term *Analysis Situs*.

The dispute within Plato's *Parmenides*, prefigures today's commonplace experience, that such ideas might be mislabelled by persons who are less than fully literate, as "abstract ideas," or, by the deprecatory "only abstract ideas." In such cases, we have encountered either an empiricist, a radical positivist, a materialist, or something akin to that: a person who is obsessed with the delusion, that only those ideas whose existence is attributable to sense-certainty, are real, and that so-called "abstract ideas" are merely fictional.

In fact, all of those ideas which are essential to mankind's increased mastery of nature, fall into the category of this semi-literate person's definition of "abstract ideas." Nothing other than such ideas, is the distinction between living and non-living processes; or, between

merely living processes, and those living processes which are also characterized by cognition; or, between the relations which we might think are directly observable by means of our senses, and those relations which must be inferred by the methods of astrophysics, or of microphysics.³⁴

Such an overview of Euclidean geometry, as viewed from the vantage-point of Riemann's correction, is the minimal vantage-point from which the principle of motivic thorough-composition can be rendered truly transparent. The argument in support of this, leads to the concept toward which this introductory presentation is aimed. Look backward, at Euclid's geometry, as we have outlined the case here, from the vantage-point of Riemann, as stated here earlier.

What we have described, for the case of both Euclid and Riemann, is fairly described as a representation of the way in which the human mind works, using "work" here in the sense of productive labor. In this case, we signify that cognitive labor which impels mankind from a lesser, toward a higher quality of potential relative population-density. Did the human mind work in that same way, before the revolution effected by Classical Greek civilization?

It certainly did work in that way: the principle of the individual human cognitive processes' design, remained the same. Successful cultural revolutions represent an enrichment of that development of the process built upon that constant principle. Or, to put the same point in a slightly different way: The progress, from relatively lower, to higher states of cognitive development of the individual's cognitive process, expresses a characteristic of the human species, nothing less than the difference between man and beast. That characteristic is expressed by all known human existence, as the willful increase in man's *per-capita* power over nature, through the kinds of revolutions in thought, and thought-driven development of

34. As stated in other locations, a formal *Analysis Situs* must be organized on the basis of a nine-celled array, constructed as follows. The subject-matter of human knowledge as such, appears to be organized as sets or relations among the elements of a three-by-three table. We must assort the evidence among three domains: astrophysical, microphysical, and macrophysical; we must assort processes among three types: ostensibly non-living, living but not cognitive, and cognitive. All possible permutations of those nine cells exist; all possible permutations are subsumed by a general principle. The principled topic of such an array is the characteristic ordering found within and among the cells, for which the distinction between entropic and anti-entropic orderings is paradigmatic. See, Lyndon H. LaRouche, Jr., "The Essential Role of 'Time-Reversal' in Mathematical Economics," *Executive Intelligence Review*, Oct. 11, 1996 (Vol. 23, No. 41); this also appeared in *Fidelio*, Winter 1996 (Vol. V, No. 4).

principles of practice, which we have identified here by reference to Riemann's revolution in geometry.

The same point, expressed otherwise, is, that every development of the human mind, in this epistemological sense, was always potentially there. The principle of development was always there. In every step of human cultural ascent from the relative bestiality of more primitive culture, the change occurred as an increase of mankind's knowledge of the implications of that principle of discovery inhering in all persons. In effect, every such upward step, represented man's increased knowledge of that principle itself. This is the principled characteristic of man's dominion in the universe, that, when mankind employs this principle, on that account, and in that way, the universe is obliged to make the relevant submission to man's will.

Look, then, at geometry, again. Look at Euclid's geometry of space-time, as the necessary predecessor of its supersessor, the latter the Riemannian geometry of physical space-time. Focus upon the role of metaphor, as we have considered this, above, in three structured contexts: from the standpoint of a Socratic view of the origins and development of a Euclidean geometry; from the standpoint of a Riemannian geometry; and, from the standpoint of what we have identified, summarily, above, as the transition from the Euclidean to the Riemannian world-outlook.

It is by developing a rigorous structure for ideas, through the method of hypothesis, that we are able to construct designs of measurement which correspond to the difference, between the old hypothesis, and the apparent anomaly which threatens to overthrow the credibility of the presently established hypothesis. The step which distinguishes a discovery from what might be a mere fantasy, is the proponent's devotion to addressing the question, "How might this be proven?" It is by thinking in terms of the principle underlying the notion of measurement, which we should recognize, interchangeably, as *extension* or *dimension*, that we are able to mobilize the cognitive powers of mind in the manner required to solve the ontological paradox so posed. The implied question then becomes: Is the geometrical form for posing and resolving metaphors real, or merely a convenient fiction?

Radical positivist Ernst Mach, or Bertrand Russell, and such among their followers as Norbert Wiener and John Von Neumann, would be obliged to recommend the latter, false assumption.

The same question of principle may be expressed for music: Are the constructions associated with Classical musical composition, notably motivic thorough-compositional forms, real, or are they merely fictions, in the sense

of such functionally related, irrationalist dogmas, as Immanuel Kant's doctrine for aesthetics,³⁵ Friedrich Savigny's Romantic theory of law, with its *Volksgeist* doctrine,³⁶ or U.S. Associate Justice Scalia's irrational notion of historical, democratic specificity in law, as ephemera of current taste?³⁷

Respecting music as such, views akin to those of Kant, Savigny, and Scalia, are rampant today, in the U.S.A., and elsewhere. One may read in program notes, and, unfortunately, also hear, in some performances, the false presumption, that Johannes Brahms was a "Romantic" composer. This policy had been adopted, either by some credulous writer, who had heard that opinion expressed, or by some performing artist, who had deformed his, or her practice, by adopting the popularized hoax, that the spirit of music had moved, from approximately the time of the 1814-1815 Congress of Vienna, away from the Classical, toward the Romantic style. Romanticism is Kant; it is also the cultural doctrine of Hitler forerunner Savigny; and, of almost any ranting demagogue who insists that the turn-out of a wild-eyed mob for even the most debased entertainments, was someone's "our culture," as mandated by the reign of some new "spirit of the age."³⁸

Is there a principle of truth, as in honest science, which ought to be recognized as underlying, in the sense of a ruling conception, the composition and performance of a work of art? Or, in the alternative, might we be obliged to tolerate today's popular proposition, that that the ever-antic *Zeitgeist* might have commanded artistic taste to degenerate, from the Classical standard represented by a Homer, Aeschylus, Raphael, Bach, Mozart, or Beethoven, to the level of that robust sincerity of populist sentiment, which inspires the legendary barroom brawl?

Is it not, rather, the case, that the architecture of natur-

35. As referenced earlier, Immanuel Kant, *Critique of Judgment* (1790).

36. By no accident, Savigny's *Volksgeist* doctrine laid the foundations for legalizing the "Nuremberg rally" form of populist dictatorship represented by Adolf Hitler's regime in Germany. Every effort to substitute the ever-capricious popular will (real or fictional), for a principle of law which defends the individual right against the popular will to violate that right, tends toward the worst forms of tyranny. A tyranny based upon that principle of capriciousness which, once it had seized the popular whim, then moved onward and upward, as in the procession of Ancient Rome, through the Civil Wars of the Republic, to its more perfect incarnation of populist irrationalism, as the imperial *Pontifex Maximus* of a Tiberius, Nero, and Caligula.

37. On Scalia *et al.*, see, Lyndon H. LaRouche, Jr., "The U.S. Constitution's New Life," *Executive Intelligence Review*, March 14, 1997 (Vol. 24, No. 12).

38. In the relevant dogmas of Nineteenth-century German Romanticism, the terms are *Volksgeist* or *Zeitgeist*.

al polyphony, and of the domain of tonality, functions in music as geometry functions in the domain of physical science? Is it not the case, that the human mind, over millennia of development of civilized life, has discovered, in geometry, a natural expression of the way in which the human mind is organized, to the effect of generating, and elaborating those discoveries upon which mankind's increased mastery of nature depends? Is it not the case, that that long process of man's development of music, leading through J.S. Bach's development of well-tempered polyphony, the which made possible, directly, Wolfgang Mozart's discovery of his principle of motivic thorough-composition, is nothing but the process of uncovering, phase by phase, not only a less imperfect comprehension of the natural predisposition of the human singing voice, but also the way in which music might, less imperfectly, evoke that emotion of *agapē* which is the innermost, underlying quality, expressing man's nature, as Plato, and the Apostle Paul understood this?

The case for geometry establishes the basis for making the case for art in general, and music as such. Continue with the argument for the case of geometry, and, thereafter, apply it to those aspects of the subject of motivic thorough-composition, which we identified at the outset of this introduction.

Physical-Economy and Epistemology

At this point, let us agree to employ the term "efficient ideas," to identify either principles, or hypotheses, validated by the methods of experimental physics indicated above, or to identify those kinds of theorem-like notions whose authority is derived from validated principles, validated hypotheses. The function of that proposed usage, may be conveyed by a question: "If certain ideas, regarded by some persons as 'merely abstract ideas,' have the practical effect of increasing mankind's effective power over the universe, are those ideas not 'real,' rather than mere fictions?" That question has approximately the same significance, as the question with which, nearly six decades ago, the present writer, like some similarly egregious adolescents, amused himself, by asking the teacher in the natural-science class, "Has biology any prospect for discovering principles which would permit the existence of a form of life capable of teaching biology?"

We, the human species, do not merely adapt to the universe, in the manner animal ecology projects a lower species' adaptation. Mankind intervenes in the universe, to change its state, willfully, to one of a higher ecological

potential. In the case, that this willful change produces an intended increase in the potential relative population-density of the human species—as modern European civilization's five-hundred-year influence has so increased that of this planet, does not this demonstrate that the process of anti-entropic change of hypothesis has access to an efficient principle? To follow Leibniz: Does not man's existence, thus, show, that we must include human cognition as integral to the "necessary and sufficient reason" for the increase of mankind's potential relative population-density?

If a composer of music intentionally evokes *agapē*, using one method, and a different method evokes banal eroticism, instead of *agapē*, have we not been presented, thus, another case of the efficiency of the principle of "necessary and sufficient reason"?

The fact that qualitative human progress occurs in a manner identified, as to form, by Riemann's referenced, 1854 habilitation dissertation, demonstrates, by this notion of "efficient ideas," that that structure of the thinking-process, in which metaphor is posed and conquered, is no less than the shadow of something very efficient, something whose result can be attained in no different way. To restate this pivotal point of epistemology: We can not separate the efficient results of discovery in science or in Classical art-forms, from the discovery of the method, or from the *form* of the method, by means of which such discoveries are ordered.

Such was the source of the fascination with which these subject-matters gripped the present writer, nearly a half-century ago, in exploring the efficient connection between these issues of epistemology, and physical economy as the great experiment required to validate the solutions proposed from this epistemological vantage-point. Not only is the rate of effective investment in scientific and technological progress, the principal determinant of the rate of improvement of the conditions of life of populations; but, the success of such physical-economic increase of society's potential relative population-density, is the ultimate proof of physical science, and, also, of what is correct in music.

In sundry locations, the present writer, writing in his interdependent capacities as an economist, historian, and statesman, has presented, from this same standpoint, the efficient connection among certain forms of education, and of investment in scientific and technological progress, to the increase of the productive powers of members of the labor-force. He has pointed to the evidence, that educational programs of various nations, since France of King Louis XI, as these programs converge upon the standard for the Schiller-Humboldt designs of Nineteenth-century Classical-humanist education in

Germany, are indispensable for fostering the best performance of that section of the economy where science is transformed into applicable designs of machine-tool principles. Through such educational policies, the population employing relatively rapid advances in technology, is able to assimilate these designs efficiently, as this latter quality is expressed by improved qualities of product and of productive processes.³⁹ Focus upon the role of that form of education.

The Classical-humanist education focusses upon obliging the student to come to know the most significant principles of art and science from the past, through no different process than reenacting the original act of discovery, in the privacy of the student's own sovereign cognitive processes. Such a fortunate student knows what he, or she has learned, unlike the unfortunate victims of the general educational practices prevailing in today's primary, secondary, and higher levels. In other words, in the type of education for which the Schiller-Humboldt Classical-humanist program is a model, the student comes to *know* art and science, rather than merely learn to appear to know them. This knowledge is secured in the only possible way, through the process we have identified as metaphor.

It is not, and could not have been accidental, that the emergence of that crippled personality-type, associated with what has been termed, variously, the "Me" or "Now" generation, coincides with the sudden collapse of musical culture in Europe and the Americas, during precisely the period that generation was emerging as graduates from secondary schools and universities. There is a connection between the loss of musicality this reflects, and the fact that the predominant, trend-setting hustlers, at the top of day-to-day financial-market operations, lack any evident sense of the way in which they are blindly, fanatically repeating the worst follies in financial-market practice, those which have immediately preceded each and all of the worst financial speculative collapses, since the collapse of the Dutch tulip-bulb craze of Europe's Seventeenth century.

In today's U.S. schools and universities, one may rise to the top of one's class virtually unencumbered by knowledge of history. History is not taught, not even as poorly as it was featured in the secondary curriculum as recently as the mid-1960's. The entirety of today's politically-correct forms of secondary and higher education, is organized in such a way as virtually to destroy the capaci-

ty for knowing history among the graduates. What passes for a standard of historiography, today, is the standard set by Hollywood pseudo-historical fiction, or by wildly tendentious, purportedly non-fictional, film documentaries in the tradition of Nuremberg Nazi psycho-drama's Leni Riefenstahl, and the convergent existentialist currents of Communist Georg Lukacs, Nazi Martin Heidegger, Heidegger's Hannah Arendt, *Steppenwolf's* Hermann Hesse, leftist Bertolt Brecht, Theodor Adorno, and Jean-Paul Sartre. The standard of popular ideas about history, among today's university graduates, and the leading mass media, is that set by and for Hollywood's Goldwyn and Mayer, with the circulation of both the original, pro-Ku Klux Klan feature film, *The Birth of a Nation*, and, by its sequel, *Gone With The Wind*.

The functional significance of this recent three decades' moral degeneration in mass culture, is, that the external history of man as a species, the history of cultures and nations, is the internal history of the generation of ideas. The person who does not know the history of events, from a valid basis in study of the history of *generation of* valid ideas, is like the teacher of biology referenced above: unable to find a necessary and sufficient reason for his, or her own professional existence. The young person, and adult, may come to know history, not by learning to regurgitate opinions acquired from some textbook or related gossip, but, only by viewing history from the standpoint of the internal history of the generation of valid, and contrary ideas. Knowledge of the internal history of ideas, relies absolutely upon that *method of* metaphor, Plato's *method of hypothesis*, on which we have placed the emphasis here.

We have returned, thus, to the dialogue among Socrates, Thrasymachus, and Glaucon, in Book II of Plato's *Republic*; we have returned to the subject of *agapē*. The role of *agapē* as the actor which *generates* the commitment to justice (and, therefore, which *generates* truthful knowledge), is accounted for by the manner it appears in recognizing, and generating solutions for well-defined paradoxes of metaphor. Hence, the Apostle Paul's celebrated I Corinthians 13; within the passion which compels the actor, such as the Good Samaritan, to serve truth, and therefore justice, lies the merit in the actor.⁴⁰ It was the lack of precisely this disposition for engaging, and conquering metaphor, the lack of efficient mustering of *agapē*, which foredoomed Shakespeare's Hamlet, and the which might doom the United States of America, and global civilization, too, during the descending avalanche

39. Lyndon H. LaRouche, Jr., "The Essential Role of 'Time-Reversal' in Mathematical Economics," *loc. cit.*, and "Return to the Machine-Tool Principle," *Executive Intelligence Review*, Feb. 7, 1997 (Vol. 24. No. 7).

40. Thus: let it be said, of the pervasively corrupt present U.S. system of justice, that such judges shall be judged for, and by their own judgments.

of the ominous months ahead. The merit of everything, all knowledge, all practice, including all the good contributed to this planet in the course of spread and rise of modern European civilization, is located in the compelling passion called *agapē*, which employs the challenging paradox of metaphor, in science, in art, and in the practice of shaping human history.

The importance of that development of musical ideas, which leads, by way of the choir of Fifteenth-century Florence's Santa Maria del Fiore,⁴¹ through the well-tempered polyphony of Johann Sebastian Bach, into the Classical, polyphonic motivic thorough-composition of Haydn, Mozart, Beethoven, Brahms, *et al.*, is that this not only reflects the best part of the history of ideas, but celebrates that agapic idea of beauty in truth, which is the principle underlying every good facet of history, and pre-history. Such musical development, is also, therefore, a measure of truthfulness, as Plato's Socrates defends *agapē* as a generating principle of justice and, therefore, truth.

We know this, by making the extension of human existence, man, the measure of the universe. The construction of that measurement, in terms of those principles underlying a science of physical economy, prefigures an outline of the epistemological principles underlying the connection between J.S. Bach's relative perfection of well-tempered polyphony, and the form of Classical, polyphonic, motivic thorough-composition which emerged out of Wolfgang Mozart's discoveries of the early through middle 1780's.

The measurement of man's relationship to the universe as a whole, is that expressed as potential relative population-density. Most simply, this signifies what is identified by the present writer's introductory text.⁴² In a first, factually accurate, but potentially misleading approximation, the term "potential relative population-density," signifies, not only a function expressing increase (e.g., extension) of the number of persons which could be sustained, by means of a given level of technology, *per* square kilometer of some land-area of standardized quality of development. It also signifies correlated improve-

ments in demographic characteristics of households, and of the population considered as a whole. It also signifies an improved quality of individual life, as measurable not only in standard of consumption, but also in the composition of the qualities of activities of which the day, the week, the year, and a decade of individual and family life are, respectively, composed.

The system of inequalities expressing these comparisons is a fair description of what is to be measured. The requirements of a competent measurement are not so simple as that description might be read as presuming. We are faced thus with something usefully named "the horizon problem," a conception which is identical with the principle underlying Classical motivic thorough-composition.

The physical-economic behavior of man in society, is not of the sort which could be adequately assessed for value-judgment by assuming, that the typical individual's activities during a day or year, could provide a useful standard of measurement. Rather, we must assess the combination of the policies of practice, and conditions existing for the individual operative and household, as these affect the condition of, both every part of the society as a whole, and the society as a whole. This takes into account, not only those present conditions, but, more crucially, the future such conditions, to which the present direction in policies of practice would lead, if extrapolated, from presently existing conditions, into five, then, twenty, or more years ahead. We must not limit our consideration to other parts and the whole of the immediately contemporary period, but must judge the present by a well-defined notion of a future as determined by present trends, a future as implicit both in present conditions, and in present trends in policies of practice. That, is, broadly, the definition of "the horizon."

The role of physical-economic classes of "capital factors," is illustrative of the point. Current maintenance and improvements of basic economic infrastructure, are an example. The effect of today's education, and also quality of popular artistic culture, determine the relative potential of the coming generation of adults. Exemplary, is the emphasis upon fundamental scientific research, and investment, through such channels as the strategic machine-tool-design sector, in advanced technologies. Generally, we must view the combination of present circumstances, present habits, present conditions, present trends respecting changes in conditions, and, above all, the "cultural paradigm" as it, like an hypothesis, shapes, or strongly tends to shape, which branch leading from each future point of decision, the society were likely to prefer. This is, also, as we shall now emphasize, the underlying principle of Classical motivic thorough-composition, in music.

41. The high relief sculpture of singing children, in the choir of Florence's Santa Maria del Fiore Cathedral, is indelible evidence that the choir was the product of vocal training and singing in the mode known today as Florentine *bel canto*. Thus, with respect to the discovery of principle embodied in Brunelleschi's design and construction of the cupola of that cathedral, this sculpture attests to the fact that the 1439-1440 sessions of the great ecumenical Council at Florence, were, among other accomplishments, not only the setting for Nicolaus of Cusa's founding of modern science, and the shaping of what was to become the first, modern sovereign nation-state, that of France's Louis XI, but also a crucial bench-mark for the modern history of music, as of painting.

42. *Op. cit.*

In economics, the “horizon,” is the mirror of the present, when that present is viewed as it is reflected back upon itself, from its estimable future consequence, a capital-cycle, or longer, into the future. The question is never, to where have we come? It is, to where does this present journey lead us? This is not only economics; it is also the key to comprehending the historical meaning of a well-lived, individual human existence.

Physical-economy, employed in this way, lets history show us which impulses, and modes of thought, are in accord with the lawful composition of the universe. The “horizon” of our expectations, defines that greatest of all experiments, man’s success, through ever-increasing, truthful knowledge, in discovering, ever-less imperfectly, how mankind, with what restrictions, and to what purpose, might bend the universe to mankind’s will. In music, Classical motivic thorough-composition most emphatically, the same purpose is implicitly determining.

‘Time-Reversal’ In Classical Composition

In matters bearing directly upon those principles of composition of music, the which are situated beyond the mere enunciation of individual tones, all of the issues of composition, and of performance, are of a type which is identical with that represented by the ontological paradox of Plato’s *Parmenides*. This fact is key, for making transparent the principle underlying Furtwängler’s “performing from behind the notes.” The principle is identical, in form, and in principle, to that posed by the “horizon problem” of physical economy.

Given, a sequence of changes of state, in any kind of progress, musical composition included, is there a unifying principle which subsumes (i.e., underlies), as if simultaneously, each and every change of state within that composition? Conversely, could music be composed, this by the intention of the composer, in such a manner that every change of state (e.g., “transitions”) within the composition as a whole can be attributed to such a single, unifying, subsuming, underlying, simultaneous principle of ordering? In other words, could music be composed, and performed, in such a fashion, by use of such a method, that the entirety of a composition forms a perfect unity in the minds of composer, performer, and audience? Could a musical composition be, thus, the expression of but a single, subsuming, underlying conception? Can these connections be reflected adequately in a music manual, such as this present one?

Start the exploration of these questions, with the more

or less popular, classroom view of musical composition. Look at a typical, relatively simple composition from the standpoint of school-book harmony. Then, consider the more serious type of case, instances of Classical form of motivic thorough-composition. Could the answer to the array of questions just posed, be addressed, adequately, from that school-book standard? In the second type of case, it clearly can not be accomplished adequately; that shows, implicitly, that the method is implicitly flawed, even as applied to the first case. Overall, we are confronted by an ontological paradox of the sort referenced by Riemann’s 1854 habilitation dissertation.

For classroom, master-class, or related studies, begin with a selected type of cases among examples of Classical motivic thorough-composition. Begin with compositions, for one or a few performers, such as sonatas of two, three, or four movements, from the work of Wolfgang Mozart, Beethoven, Franz Schubert’s last years, and Johannes Brahms. Reference these from the vantage-point of J.S. Bach’s *A Musical Offering*, the “Six-Part Ricercare” most emphatically. Use Mozart’s K. 475 Fantasy as an exemplary derivation of a model for Classical motivic thorough-composition from this Bach work. Trace this particular choice of Mozart paradigm from such cases, through Beethoven’s Opus 111, and via a derivation located within measures 60-85 of the *Adagio Sostenuto* of Beethoven’s Opus 106, into Brahms’ Fourth Symphony. This provides the required span for our inquiry.

That specific study is summarized, later, within the text of this Manual. To get to the heart of the matter as directly as possible, look at this aspect of the internal history of Classical motivic thorough-composition from the standpoint of the “horizon” problem we identified for the case of economics. Mindy Pechenuk’s study of the role of the principle of “time-reversal” underlying Mozart’s composition of the referenced *Ave Verum Corpus*, is a case in point. Consider the matter, first, from the standpoint of performance.

The essence of musical performance is memory. Ramon Llull recognized this as the essence of music, as Plato before him defined this principle of memory. Examine this point, first, in terms of a restatement of the point of principle developed earlier in this introduction.

The distinction “Classical,” properly applied to any work of art, does refer, of course, to a principle first clearly manifest for art within the developments which the best features of Classical Greece contributed to all human civilization. However, in applying that term to any subject-matter which is not simply a replication of Classical Greek works of art, we are speaking not of Classical Greece as such, but, rather, of any expression of a certain specific type of principle. That latter usage of the term, “Classical,” is

Mozart's *Ave Verum Corpus*

Hypothesis E: "in mortis examine."

Musical score for Hypothesis E: "in mortis examine." The score is in G major (one sharp) and 4/4 time. It features four staves: Soprano (S), Alto (A), Tenor (T), and Bass (B). The lyrics are: "in mor - - - - - tis ex - a - mi - ne." A box labeled "40" is positioned above the Soprano staff. A callout box labeled "Lydian interval" points to the interval between the notes 'in' and 'mor' in the Alto part.

Compare the very last phrase of the *Ave Verum Corpus*, sung on the words "in mortis examine," with the very opening bars, sung on "Ave, ave." Study, or listen to, these two sections enough, so that each forms a distinct image in your mind. Then, ask yourself, what governs the density of singularities in the "in mortis examine," as compared to the opening "Ave, ave." Do not perform this comparison "analytically," but, rather, "synthetically"; what is crucial here, is the process that governed Mozart's generation of ideas. You will discover that "in mortis examine" is transformed, in relation to the opening "Ave, ave"—it is related, and yet it is different. Ask yourself, what has changed, and, more importantly, *what has ordered that change?*

Clearly, there is a greater density of action, marked by a greater density of Lydian intervals. This change, is the crucial *characteristic* of the composition—a change which Helmholtz, Wagner, and the Romantics deny exists. That is, they would deny that Mozart has here made a deliberate and intelligible creative discovery. Instead, they would claim that, by some *unknowable* means, Mozart has managed to arrange the "in mortis examine" section as a particularly sensually pleasing

what we are employing here. For us, it applies to the tragedies of Shakespeare, or Friedrich Schiller, or the greatest paintings of Leonardo da Vinci and Raphael Sanzio, for example, or to well-tempered polyphony and the methods of motivic thorough-composition premised upon well-tempered polyphony. It were more likely that this principle were understood correctly, if we demand that the term "Classical" be heard as identical with the term "metaphor," as the latter term has been defined above.

Hypothesis A: "Ave, ave."

Musical score for Hypothesis A: "Ave, ave." The score is in G major (one sharp) and 4/4 time. It features four staves: Soprano (S), Alto (A), Tenor (T), and Bass (B). The lyrics are: "A - ve, a - ve ve - rum cor - pus,". A box labeled "5" is positioned above the Soprano staff.

series of seventh chords and minor thirds—since, for them, the musical medium is reduced to a simple linear continuum.

The question before us, however, is: *What governs the shift which Mozart has made? . . .*

—Mindy Pechenuk,
from "Mozart's *Ave Verum Corpus*"
Fidelio, Winter 1996 (Vol. V, No. 4)

That specified: consider "musical memory" as an expression of the process of memory of metaphor: the remembering of the process of defining and resolving each of a specific array of metaphors. In this case, remembering signifies experiencing each momentary step of each metaphor, from the standpoint of that conception of fore-knowing the "horizon," which we have supplied here.

Compare this with knowledge of a valid scientific principle. As the point was argued earlier, here, one does

not know a principle, unless one can reenact the derivation of that principle from its appropriate root in paradox; this reenactment must occur within the sovereign privacy of one's own mind. Thus, the expression, "I know," should be restricted to the ability to validate the reenactment of the relevant, discovered principle, from its origins in a strict metaphor, through the validation of the solution to the deep paradox of that metaphor. That, in other words, signifies, we know only what we are able to validate through that kind of reenactment of a discovery, which we know as Plato's Socratic method.

Thus, we have "musical memory," as that term is employed here. Thus, the term "Classical" must be restricted to signifying "metaphor" in that sense. Every Classical work of art, music included, is a metaphor, from beginning through aftertaste. All competent performance of such musical compositions, is done from foreknowledge of the goal to be reached, from an initial statement of paradox, through to the concluding resolution. That which is defined by the announcement of the concluding tones of such music, is not some closing coda, but, rather, the pervasive principle of development which reveals itself in the manner it drives the performance of the composition from the question-mark with which the composition begins, to the close. It is the development under which this process is coherently subsumed, which is the idea of the composition, the "One" which eludes the Eleatics' paradoxes of Plato's *Parmenides*.

For the purposes of this introduction, what should be understood as the way in which the idea of a work of Classical motivic thorough-composition unfolds, is illustrated by stating that such development is of the *type* addressed in the referenced study of the *Ave Verum Corpus*. Thus, the immediate task left for our attention at this point in the introduction, is to point to the places, within the "micro-physical" aspect of well-tempered polyphony, in which the efficient principle of such development is found. What is the smallest among the possible expressions of metaphor, which is characteristic of a Bach well-tempered polyphony tuned at approximately A=430-432 cycles?

The answer is: *The principle of metaphor is located for, and within Classical well-tempered motivic thorough-composition, in a simple reversal ("inversion") of ordering of*

*tones of a single interval within a well-tempered polyphonic composition.*⁴³ This is located not only within a particular voice's part, but also occurs as sequences across the voices of well-tempered polyphony.

The essential role of well-tempered polyphony, is that, for the first time, the universality of such inversion was well-defined, and pervasive, as it could not be in any alternative mode of tuning. This tuning must be a product of, and integral to polyphony, since it can not be determined in any other way. Indeed, a Florentine *bel canto* mode of polyphony has a precise significance, in this respect. In the restatement of a line of poetry, by a second voice, the comparison of the locations of the register-shift in the first voice's expression of that line of poetry, with that in the second voice's, defines a most crucial point of reference for the composer. This principle of harmonic organization, is well defined only in terms of *bel canto* polyphony.

The precision with which this aspect of composition and performance is addressed, delimits the effects we might recognize by the terms "transparency" and "coherence."

The musician studying the implications of inversions within a *bel canto* polyphonic domain, will return to relevant Bach compositions, especially from among those of Bach's last years at Leipzig. The musician is well advised to begin his, or her tracing of Mozart's approach to motivic thorough-composition, by a period of concentration on the study of inversions in this specific domain.

The principle of metaphor supplies the proposed purpose for such review of that general phase of Bach's own development, of which the *A Musical Offering* is representative. To know the germ-principle of Classical motivic thorough-composition, it is essential to acquire a sense of the impact which Bach's work had upon Wolfgang Mozart, during those Sunday salons at Baron Gottfried van Swieten's Vienna residence, where Mozart first encountered the relevant collection of Bach manuscripts. It is necessary to relive, at least in that degree, Mozart's mastery of Bach's well-tempered polyphony, to comprehend not only Mozart's six Haydn quartets, the K. 475 Fantasy, but, most emphatically, such exemplary Mozart achievements in polyphony as his last three symphonies and his *Requiem*. As Mindy Pechenuk shows, all of the elements

43. Mozart's realization of this significance of the Lydian interval, is the crucial distinction of his K. 475, as compared with the K. 457 keyboard sonata to which he prefixed that Fantasy. The Lydian interval, as the most characteristic feature—the virtual "Pythagorean"—of the domain of well-tempered polyphony, is most commonly associated with the C-Major/C-minor modality of Bach's *A Musical Offering*. This bears upon the relevant register-shifts of the soprano and tenor voice-species. It appears to be a relatively commonplace error, to regard the appearance of

that interval there as a peculiarity of the C-Major/C-minor modality; in fact, the Lydian interval is a pervasive characteristic of well-tempered counterpoint, especially so with the appearance of the so-called "late Beethoven" compositions, his *Missa Solemnis* and his last string quartets most notably. As Mindy Pechenuk stresses, the role performed by the Lydian interval in the Mozart *Ave Verum Corpus*, both within voices, and intervals across voices, is a characteristic of the most agapic musical compositions.

of metaphor, and the relevant role of a general principle of *bel canto*, polyphonic inversions, are supplied a consummate expression in that gem, the *Ave Verum Corpus*.

After this work of Bach, everywhere in great Classical composition, the principle of well-tempered polyphonic inversion pervades perfectly. Perfectly, since all possible inversions are perfectly represented mathematically, by merely reversing the sequence in which the tones are uttered to form the relevant intervals.⁴⁴ Once the pervasiveness of such inversions, is set within the registral characteristics of voice-species, in *bel canto* polyphony, the values of a well-tempered scale, at C=256, and A=430-432, are determined *implicitly*.

To achieve that kind of internal perfection, a well-tempered tuning must meet the intersecting requirements, not only of perfected inversions, not only of the intersecting requirements determined by the natural registral distinctions among well-trained expressions of naturally determined singing-voice species, but must also add the weight of that vocalization of metaphor-dense forms of Classical poetry, whose singing is the root of music. All of these considerations, must be addressed within the domain of musical “time-reversal,” the domain in which the performance of each present interval is determined by its mirror-reflection in the idea which is the composition taken in its entirety.

This brings this introduction to the threshold of its concluding argument: on the subject of “time reversal” in Classical composition.⁴⁵ During 1995, and into 1996, the present writer grew impatient with the progress reached in preparing the second volume of this manual. The intent to build the presentation of the Classical com-

position’s palette, including the evolution of the instruments and ensembles around motivic thorough-composition, had already been established, and was progressing. By 1995, the chief hurdle to be overcome, was a pedagogical one. What was needed, was the selection of a handful of examples, selected for the advantages they might offer, in efforts to present principles to the reader with a minimum of diversion from that task itself. Central was the problem of selecting a single composition which embodied all of the principal types of features which Classical motivic thorough-composition represents. For the latter purpose, Mozart’s *Ave Verum Corpus* has since been chosen.

During this writer’s 1996 campaign for the Democratic Party’s U.S. Presidential nomination, he used the occasion of a Chicago campaign-stopover, to present the case of “time-reversal” to a group of associates there. There, in response to a question by Mindy Pechenuk, who had been among the key collaborators on Book I, the writer indicated that he was leaning toward the choice of the *Ave Verum Corpus* as the most compact and perfected exposition of the crucial principles of “time-reversal” in motivic thorough-composition. Her work, as presented later, removed any doubt of the merit of that selection. All the crucial principles are embedded in a transparent way in that small composition.

From Plato Through Brahms

It were not possible to attain an adequate comprehension of this method of composition, without reference to those notions of time which are located within Plato’s work.

44. Once again, the values of the well-tempered tones are not algebraically exact. They are singularities, each a small, but finite region of discontinuity within the extent of the octave-scale. The values are determined, not only by the fact that there must be the obvious coincidence of the tones among all scales; but, that each local interval must be performed, as Furtwängler’s referenced motto implies, from the standpoint of a musical memory of the composition as that unified process which is manifested as a completed process of continuous, coherent development, in the immediate “aftertaste” of its concluding tones. This must take into account avoidance of the “wolf-tone” potential in the vicinity of each register-shift, of each and all of the voice-species represented in well-tempered polyphony as a whole. The region of singularity, within which the enunciation of the well-tempered tone, may lie within the range defined by the application of each and all of the inversions imposed by the function of “time-reversal” in performing, according to that view of each interval as apprehended in the mirror of the perfected, whole composition being completed.

45. A few years back, baritone William Warfield demonstrated to a master class, the role of the principle of motivic thorough-composition’s applicability to the performance of a Negro Spiritual. This writer was not present during that class, but the Maestro recapitulated his presentation of the point during a later event, where the

writer was present, that same evening. The genius which sometimes appears in folk-song, as Antonin Dvořák demonstrated Johannes Brahms’ principle for the case of the American Negro Spiritual, is not accidental. The great compositions of a Bach, Mozart, Beethoven, and Brahms, are the outgrowths of a great, agapic yearning for such qualities of musical expression. The best performers, once they have mastered the most advanced products of Classical composition, are best equipped for recognizing the same yearning expressed in the noblest attempts of relatively less developed musical media and forms. In the sea of anonymity, in which the African-American slaves were as if buried alive, a cry reaches out to us, from across the generations, by means of Dvořák’s and Harry Burleigh’s grasp of the Negro Spiritual. One hears the beautiful yearning from the souls of those crushed bodies, cheating thus the satanic vigilance of the slave-master class. Those Spirituals remind us, that it was from similar kinds of social conditions, in ancient and medieval Europe, that the germ of the best Classical motivic thorough-composition also lived, and grew. See Dennis Speed, “The Classical War Against Multiculturalism: Brahms’ Compositional Method,” *Fidelio*, Winter 1993 (Vol. II, No. 4), pp. 50-57; also “African-American Spirituals and the Classical Setting of Strophic Poetry,” *Fidelio*, Winter 1994 (Vol. III, No. 4), pp. 23-36.

The relevant, summary argument, is as follows.

In the simplest case, a delimited sequence of events might be represented by theorems of a deductive hypothesis, as by a classroom Euclidean geometry. Although the sequence is, by definition, a form of extension in time, the hypothesis which underlines that sequence, does not change internally within the extension of time during which it underlies that sequence. Within those bounds, the set of definitions, axioms, and postulates, is an encompassing simultaneity. This illustrates the way in which the idea of “time” is situated within Plato’s work.

Next, consider a coherent sequence of successive hypotheses, none of which is deductively consistent with any among its predecessors. The principle underlying such a sequence lies within a higher domain, a domain corresponding to Leibniz’s use of *Analysis Situs*, and Plato’s “Higher Hypothesis.” As we have indicated earlier here, “higher hypothesis” references an ordering-principle which commonly underlies a coherent array of mutually inconsistent hypotheses. As in the first case, the sequence corresponds to extension in time. Relative to this sequence, the underlying ordering-principle is an “higher hypothesis,” which latter exists as an unchanged, but constantly efficient, encompassing simultaneity. An increase of Riemannian cardinality, as we have indicated that earlier, here, is an illustration of such an “higher hypothesis” as an ordering principle.

Similarly, higher hypothesis is subject to improve-

ment. This sequential process of improvement is subsumed by the notion of “hypothesizing the higher hypothesis.” The evidence, that hypothesizing the higher hypothesis leads mankind upward, toward greater *per-capita* power in the universe, requires an underlying, universal, changeless but efficient principle, under whose encompassing simultaneity the process of “hypothesizing the higher hypothesis” is given impetus and direction. That principle is Plato’s “Good.” The argument, so summarized, is the Platonic ontological proof of the existence of God. The quality which radiates from that Good, is *agapē*.

Hence, the Gospel of John; hence, the Apostle Paul’s I Corinthians 13. Hence, all men and women are made in the image of God, to exert dominion, as participants in the universe, by means of that quality, *agapē*, which casts them in such an image. Hence, the distinguishing principle of universality special to Christianity, that special principle which was belatedly given expression in those designs of statecraft flowing through the great ecumenical Fifteenth-century Council of Florence. Of this Renaissance, Bach and Classical motivic thorough-composition sing! So, each mortal human life may discover the meaning of each of its passing present moments, each mirrored, as in “time-reversal,” in the fact of a mortal composition taken in its wholeness. In the words of the motet: *in mortis examine*. There is the method of motivic, Classical, polyphonic thorough-composition.

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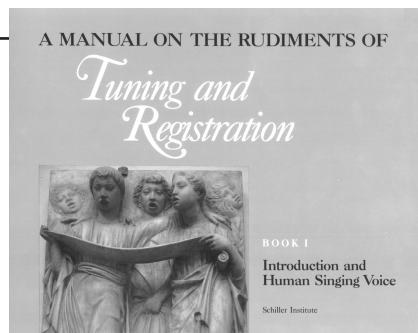
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On the 200th Birthday of Franz Schubert

Franz Schubert was born on January 31, 1797, in Vienna. By the time of his death in November 1828, at thirty-one years of age, he had left behind an unbelievably rich body of work, including over six hundred songs, fifteen piano sonatas, fifteen string quartets, quintets, piano trios, eight symphonies, six masses, numerous *Singspiele* and opera fragments, and many other compositions, especially for piano, and chamber music.

In 1808, shortly before the death of Joseph Haydn, Schubert entered the Vienna Court Orchestra as a choirboy, and became a student at the city-run boarding-school. He began to show his extraordinary musical gift at a very early age, and during his school years he was immersed in the great works of Haydn, Mozart, and Beethoven. Among his music instructors was Antonio Salieri, who had been associated with Mozart. Schubert had already begun to compose when he was a small child, and while a student, he composed his first *lieder*. He was only seventeen years old when he wrote “Gretchen am Spinnrad,” his breakthrough into musical mastery.

After a brief stint as a teacher’s assistant, Schubert devoted himself entirely to music, with the financial assistance of just a few friends. It was also his friends who made repeated attempts to open his way to broader audiences, and to get him recognized as a major composer. The famous singer Michael Vogl, who was well versed in the poetry of Classical antiquity, was especially helpful in making Schubert’s *lieder* better known. Nevertheless, throughout his lifetime, Schubert never enjoyed universal recognition; letters to Goethe went unanswered, and the big publishing-houses were more than hesitant about publishing his works.



In his *lieder*, Schubert connects the language of poetry with music in a unique way, thereby giving rise to a completely new unity.*

His selection of poems for musical setting, is significant: Alongside works by the greatest poets, such as Schiller (he set 42 poems by Schiller alone!) and Goethe, Matthias Claudius, and Ludwig Uhland, there are simple poems by his friends, whom he immortalized through his settings. His two great song cycles, *Die schöne Müllerin* and *Die Winterreise*, were settings of poems by Wilhelm Müller, who later became known as “Müller the Greek.” During the last years of his life, Schubert also delved into the poems of Heinrich Heine (who, like Schubert, was born in 1797).

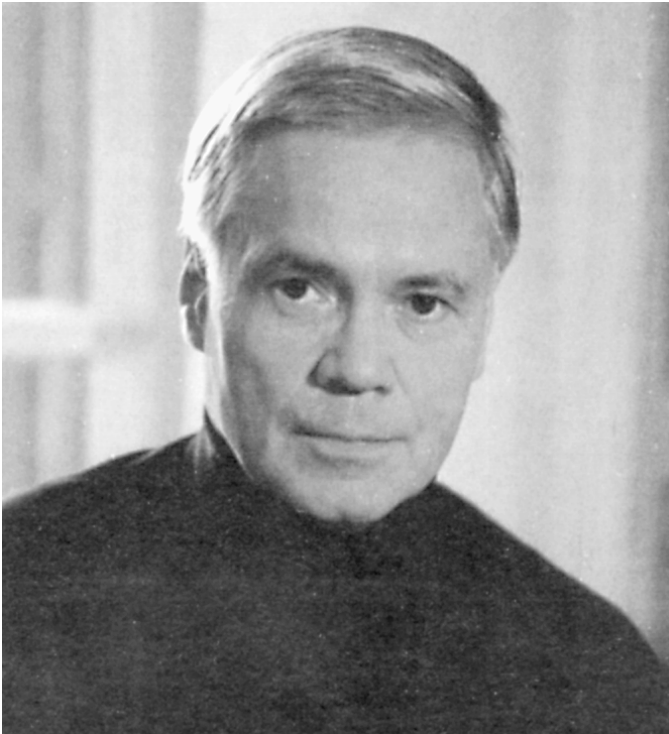
In 1827, one year before Schubert’s death, Ludwig van Beethoven passed away. Although Schubert had followed Beethoven’s work with reverential admiration, there probably was never any closer contact between the two. Beethoven certainly did know about Schubert’s works, however, and the two had many friends in common. For example, Beethoven was present at a private performance of Schubert’s A minor Quartet (“Rosamunde”) by the “Schuppanzigh Quartet,” which had had the honor of premiering many of Beethoven’s own quartets. The musician Anselm Hüttenbrenner, a close friend of Schubert, was present at Beethoven’s deathbed.

On the occasion of Schubert’s 200th birthday, *Fidelio* spoke with Dietrich Fischer-Dieskau and Norbert Brainin, two artists whose careers have been bound up with Franz Schubert’s works in special ways.

* For an imaginative introduction to Schubert’s handling of the musical setting of poetry, see Stephan Marienfeld, “The *Schöne Müllerin* and the Mathematical Sublime: Elevating the Irony and Metaphor of Folk Poetry,” *Fidelio*, Fall 1995 (Vol. IV, No. 3).

Dietrich Fischer-Dieskau,
Baritone

‘Between the notes, that’s the main thing’



Professor Dietrich Fischer-Dieskau was interviewed for Fidelio on Oct. 22, 1996, in Berlin, by Ortrun Cramer and Stephan Marienfeld.

Fidelio: At the beginning of next year, we will celebrate Schubert’s 200th birthday. This will be the occasion for many concerts and readings, in many cities, such as the big concert series in Cologne, of which you are now the artistic director, and which you have kicked off with a lecture. In the course of this concert series, every song that Schubert ever wrote will be performed . . .

Prof. Fischer-Dieskau: . . . all of them, with only a few exceptions.

Fidelio: We would like to dive in with our first question: What, in your estimation, is Schubert’s special significance? Why should we, today—in an era threatened with economic, moral, and cultural crisis—bother ourselves about Schubert?

Prof. Fischer-Dieskau: I am not of the opinion, that works of art must be unconditionally linked to what was happening at the time they were created. Admittedly, it is *really* our duty, as artists, to hold up a mirror to our own era; but, on the other hand, these works have lives of their own, and they’re still alive today. The reason why Schubert is celebrated so much today, lies rather in the fact that there has been nobody else like him—not before him, not after him. Today, the *lied* genre is long dead; the art-song no longer exists. Yes, songs for voice and piano are still being written; but, to describe these as *lieder*, would be the height of impudence in most cases. Schubert brought this form to perfection over the course of only a few years. And therefore, it’s important that we orient ourselves toward this man. It’s a question of his musical nature—something that is no longer possible today, in that form.

But, all of his external circumstances—the oppressive and confined surroundings he grew up in, the difficult circumstances under which he had to learn, and how his life was plagued by illness, and how short it was—all that is quite irrelevant. After all, in those days, people tended to die young.

Dietrich Fischer-Dieskau has played a key role as a singer in shaping musical life from the end of World War II down to the present day. His numerous recordings attest to his standard-setting *lieder* interpretations. Above and beyond this, he has made a name for himself as the author of numerous books on *lieder* and song, and has also appeared as an orchestral conductor. He currently devotes his time to teaching and promoting young artists.

Rather, I believe that it is very good, if, with the aid of his songs, we can be reminded, among other things, of the social conditions under which Schubert had to work. Completely aside from the fact that the songs themselves have such a whirling life of their own, which you can never completely grasp, but which you can perhaps approximate in little pieces, without ever really reaching it. And all this is bound together in one single mind, with one single way of experiencing music.

Fidelio: You're saying you would not necessarily look at a work of art in connection with the realities of its own era, since it has its own intrinsic value.

Prof. Fischer-Dieskau: I'm saying that about art in general. That doesn't mean a *l'art pour l'art* ["art for art's sake"] standpoint, but, art should not be an appendage of the times. Rather, it is *permitted* to reflect the times, but it is not *required* to do so, or, so I have found. It stands on its own—or, at least, it used to. The big question is whether it could still do so today; I doubt it. When I see what passes for "creative" today, it's pretty poor pickings.

Fidelio: People generally emphasize the fact that Schubert had a wealth of opportunities to dip into the latest works of contemporary poets.

Prof. Fischer-Dieskau: That's true. But, on the other hand, if Schubert were alive today, he would find even richer fields to plow. He would see, spread before him, an infinite spectrum of lyrical poetry, which simply did not exist in his own day. Because lyrical poetry was still relatively new; it only first emerged with Klopstock, or, if you will, you might go back to Gryphius. This was a completely new mode of expression. It emerged, at the very latest, during the Enlightenment.

Fidelio: Schubert was apparently rather arbitrary in his selection of poems to compose . . .

Prof. Fischer-Dieskau: Not at all, I don't believe so. It's simply absurd, when, as often happens, people do up a balance-sheet of the 100 good poems which he set to music, against the other 400 which were not so good. For one thing, he gives them a wide variety of treatments, and does magnificent justice to the good poems. But, above all else, he let himself be guided by musical aspects: What is rhythmical, what is harmonic? How can a melody be built up? The composition of a single melody is born out of a bit of text, perhaps the first line, but it can also be the entire strophe; it can even be the poem's overall form.

Fidelio: So, a poem is already a sort of musical score?

Prof. Fischer-Dieskau: Yes, that's so. Many, many composers have only found their way to a certain form, through familiarizing themselves with texts. A famous example is Nietzsche, who was a musical dilettante, but who wanted to compose anyway. And Hans von Bülow, after looking over his compositions, gave him this very intelligent advice: "Write songs, and stick to the text. Then you will find at least *one* red thread, or a guiding hand, that will show you the way." And so it came to pass, that his songs were far and away the best musical pieces he ever produced.



Fischer-Dieskau (left) with the conductor Wilhelm Furtwängler. "After he had inspired me to the 'Four Serious Songs' of Brahms at a manorhouse in Salzburg, he treated me as his own son."

Fidelio: There were some poems which Schubert rejected . . .

Prof. Fischer-Dieskau: Not all that many! There were a few which were not suitable for musical setting, but which he liked anyway, and he tried to adapt them. On a number of occasions, these attempts failed, such as, for example, in his cycle of three hymns by Novalis, which simply didn't work; but things like that happen. Brahms believed that there was no need to publish absolutely everything that Schubert ever wrote. When Schubert's collected works came out, Brahms said that "Schubert himself would never have allowed it; it will denigrate him, if you actually print everything he ever wrote, since there are weak pieces here, too." But I must say that, in comparison to other composers, the weak Schubert pieces are quite rare. . . .

Fidelio: Brahms also said that “There’s something you can learn from every Schubert song.”

Prof. Fischer-Dieskau: Of course. But Brahms himself was extremely self-critical; he was always pruning and polishing his works. Those things that he actually published, were correct down to the dots on the “i’s,” and nothing could be altered.

Fidelio: Going further into the content of the poetry: For Schubert, there was yet another, spiritual level with which he conversed, while composing his songs.

Prof. Fischer-Dieskau: Yes, there is the widest imaginable array of references in his works—more of them biographical, than with other composers. He selects poems that coincide with his situation at the moment, and that express what he has experienced, or can imagine experiencing. Perhaps this is why he composed so many poems written by his own friends, since they certainly must have had some insight into what he was going through.

Fidelio: Many poems which Schubert set to music, had also been previously composed by others before him, such as Reichardt and Zelter. Why are Schubert’s different?

Prof. Fischer-Dieskau: Reichardt is perhaps his most immediate predecessor. Schubert copied out some of Reichardt’s songs by hand, in order to practice that way of writing, and to familiarize himself with the declamatory style, only sparsely underlaid with chords. Reichardt’s “Prometheus” can really be seen as a run-up to Schubert; I think Schubert’s own “Prometheus” profited from it. And who else? Well, of course, as a young beginner, he adopted Zumsteeg as his model, setting the same texts as he did. But then Schubert raced ahead. It’s a unique course of development.

Fidelio: People say that “Gretchen am Spinnrad” was his one great, audacious leap. From then on, he was a genius.

Prof. Fischer-Dieskau: He was so, even before that. But, you must admit that the art-song was indeed perfected around that time.

Fidelio: But, did Schubert develop even further after that, or is he already complete by that point?

Prof. Fischer-Dieskau: There was continued development, of course. But “Gretchen am Spinnrad” did represent a huge leap; there really aren’t any forerunners. It was like a bolt of lightning.

Afterwards, of course, there was even more development. Schubert repeatedly revisited the old forms, his early style, and tried to give them new life. But then he would very quickly abandon them again. Toward the end of his life, one can sense that he was no longer

thinking his way into the minds of others, causing them to speak on his behalf, but that he was now speaking for himself. Up to that point—approximately up to the time when he composed “Einsamkeit,” I’d think, when he was in Zseliz in Hungary—he makes others speak for him in his songs. But then, with this song “Einsamkeit,” which he himself described as the best song he had ever written up to that point, he attains a level on which he truly and entirely identifies himself with what he has composed. For example, by studying his two different settings of Goethe’s “An den Mond,” you can reconstruct a picture of how rapidly he developed over a very short time. The first version is lovely and pretty, and thoroughly listenable, but it’s not nearly as important as the second one, composed shortly thereafter, which is laid out completely differently, with a totally different arrangement of strophes—everything is different.

Fidelio: At your lecture in Cologne, you emphasized that Schubert usually composed bunches of poems by the same poet.

Prof. Fischer-Dieskau: Yes, as much as possible, quite often.

Musikalische Akademie,
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E r s t e A b t h e i l u n g.

1. Ouverture zu der Oper: Iphigenia, von Cherubini.
2. Die Kraniche des Ibykus, von Fr. Schiller, vorgetragen von Hrn. Anschütz, k. k. Hofchauspieler.
3. Adagio und Rondeau für die Violine, von Baillot, gespielt von Hrn. Escudero, Schüler des Hrn. Baillot.
4. Geist der Liebe, von Martini, in Musik gesetzt von Fr. Schubert, gesungen von Hrn. Barth, Lise, Nejedle und Nestrov.
5. Arie aus der Oper: La donna del lago, von Rossini: „O tu chio chiamo,“ gesungen von Dlle. Eckelin.

Z w e y t e A b t h e i l u n g.

1. Ouverture von Herrn Fr. Schobertlechner, Kapellmeister am k. k. Hofe zu Lucca.
2. Variationen für das Pianoforte, mit Orchester-Begleitung, komponirt und gespielt von Herrn Fr. Schobertlechner.
3. Der Christabend, Gedicht von Fr. Kind, vorgetragen von Dlle. Weber, k. k. Hofchauspielerinn.
4. Romanze: „Die Ihr die Triebe des Herzens kennt,“ aus der Oper: Die Hochzeit des Figaro, von Mozart, mit deutschem Texte, gesungen von Dlle. Eckelin.
5. Introduction und Variationen für das Waldhorn, gespielt von Hrn. Vergonzi, worin derselbe verschiedene Instrumente nachahmen wird.

Herr Hofopern-Kapellmeister M. Umlauf hat die Leitung aller Musikstücke, und der k. k. Hofopern-Orchester-Director und Mitglied der k. k. Hofkapelle, Hr. Katter, die Direction des Orchesters gefälligst übernommen.

Alle übrigen vordenannten Künstler haben sich nur in der edlen Absicht, den wohlthätigen Zweck zu fördern, zur Mitwirkung bereitwillig herbeigelassen.

Music Academy concert program, May 1822, when Schubert's works were not well known, features his lied "Geist der Liebe." In addition to musical works, poems—for example, "The Cranes of Ibykus" of Friedrich Schiller—were performed on the program.



Autograph of "Gretchen am Spinnrad" ("Gretchen at the Spinning Wheel") (1814), Schubert's first masterpiece of lied composition. "The song represented a huge leap; there really aren't any forerunners. It was like a bolt of lightning."

Fidelio: And therefore he was seeking not just to compose a poem, but rather he was trying to grasp the poet's underlying character.

Prof. Fischer-Dieskau: That's right. Which is why, in my *lieder* concerts, I always strove, when possible, to sing only the works of a single composer, so that the audience could be gradually drawn into a particular creative genius' way of thinking, and could follow him. If you only do little clusters—three or four songs by one, and another, and then yet another—you lose the opportunity to think your way into the composer's mind, since, after all, most of these pieces are quite brief.

Fidelio: You said "this particular creative genius." I'd like to make that into a motto, since the composition of *lieder* distinguishes itself by the fact, that it works explicitly with metaphors. A while ago, Lyndon LaRouche wrote an interesting article, in which he demonstrates that creative mentation, creative insight, is mediated through metaphor. Metaphor as a thought-form . . .

Prof. Fischer-Dieskau: In music, you have to speak about a form-form, of adopted formal elements that are applied in order to express certain specific things. Because painting with music, that's something completely different.

Fidelio: No, that's not what I mean. LaRouche is talking

existed *in that form*, the solution to self-imposed or pre-existing paradoxes that were impenetrable from the standpoint of currently existing knowledge and experience. It is precisely this step of coming to grips with what is incommensurable, the paradox, that must be communicated. And therefore, the challenge is to express this through metaphor, to evoke a mental image which can express precisely that creative process which I myself am going through.

Prof. Fischer-Dieskau: That will have much less relevance for Romanticism, I think. In Romanticism, the main determinant is the mood, the atmosphere. And in that regard, you could also describe Schubert as a Romantic. The mood of the poem. After all, lyrical poetry's main concern is to express, in this way, a fleeting constellation of various elements.

Fidelio: Schubert presses forward into the *core* of the poem, which he creates anew, in musical form. That is the idea of metaphor. This process cannot really be expressed in words alone. Furtwängler spoke about how he played what lies between, or behind, the notes.

Prof. Fischer-Dieskau: That's something else again. Now you're talking about interpretation. He himself has supplied the proof that things aren't so easy, when it comes to composition, whereas, as an interpreter, he was able to scale incredible heights.

Fidelio: But the idea of a poem does not exist in the individual words on the page, but rather in the whole.

Prof. Fischer-Dieskau: And that's so, even in Eichen-dorff, even though every word he uses is actually a symbol of some sort. But once you've analyzed everything, you still don't have an interpretation—not by a long shot. The interpreter is concerned with other things. You said it: between the notes, that's the main thing.

Fidelio: The idea is therefore to follow the spoor, to attempt to rediscover the creative process which the composer himself has gone through.

Prof. Fischer-Dieskau: Yes, as much as that's possible; but, no one can fully attain that. All you can do, is try to trace things back: Where did this idea come from? Where did he pick up on it, and what is actually new here?

Fidelio: But, isn't that precisely what makes for the riches contained in Classical art?

Prof. Fischer-Dieskau: No; the real riches lie in the capacity—at

least, for the era I'm looking at, between 1800 and 1900—not so much to reconstruct the form or the structure (all that has to be there, too), but rather to recreate the personalities who are there, speaking, singing, writing. To add your own personality to it, and to merge with it. And woe be it, when there's no pliant personality to do the interpreting, because then we arrive at the way Beethoven is often done nowadays: rushed through, at a rapid tempo, metronomically. That doesn't do justice to these pieces. He himself, as a pianist, took great liberties. We know from contemporary reports, that he was a highly gifted improviser; and, that alone already gives you an incredible freedom to take liberties. So, "Classical" cannot mean metronomic!

Fidelio: LaRouche describes the *lied* as a kind of Rosetta Stone, which assists us in approaching and understanding the larger, more extensive works of chamber music, all the way to the symphony. You can see this very concretely in Schubert, taking the example of those songs which he went on to develop in other forms.

Prof. Fischer-Dieskau: But then, considerable difficulties soon crop up. I'm thinking of the young Hugo Wolf, who sought Brahms out in order to show him his compositions, only to receive the curt verdict: "Go to the Academy, to Mr. Hellmesberger, and learn how to compose." You can see the extent to which a highly intelligent, intel-



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Right: *Schubert's close friend, the singer Michael Vogl, helped to make his songs better known to the public. (Pencil drawing by Leopold Kupelwieser, 1821.) Above: In "Schubert Evening at Joseph Spaun's Home," Vogl sits beside Schubert at the piano. (Watercolor by Moritz van Schwind.)*

lectually active man can have no comprehension of a young, gifted genius—and for many reasons! Stylistically, Wolf travels on such entirely different pathways—an entirely different declamatory manner, a special ear for the sound of words. The young Wolf was one of those people who would recite a poem to themselves a hundred times, until they had found the music that goes with it. Whereas, with Brahms, the creative process proceeds quite differently.

I believe Schubert had many different methods for familiarizing himself with a poem: reading it aloud and silently, always thinking up new ideas about it, first letting various things knock around inside his head, until he finally decides what to do. Unfortunately, most of that is

impossible to reconstruct in detail—as little possible, as it is for us to imagine how Michael Vogl sang—now, that I’d really like to know, too! Or, how Schubert played the piano: it’s very difficult to get a sense of that in retrospect. I believe he was a very quick pianist; his contemporaries speak of the “neatness of his playing.” Surely, he was one of those people who, if he came into a room and heard someone practicing, would be the first to



say: “Why so slow?” Schubert has this tendency—in contrast to Brahms, for whom precisely the opposite was the case. “Why are you rushing like that? Stop and consider, that if you’ve got 4/4, first do it in 8/8, and then you’ll advance a little ways.”

Fidelio: For you, is Schubert the center of everything else, as he is for almost all *lieder* singers?

Prof. Fischer-Dieskau: Perhaps not the sole center, but certainly the brightest one. There are others, too: Schumann, Brahms, and Wolf. And also Beethoven, in his own way, although for him, the *lied* brought him into a sphere which was somewhat difficult for him; he didn’t like to work with texts. He did it anyway, because it affected people far and wide—it sold better than purely instrumental music. He therefore wanted to confront this in himself, because he wanted to compose operas, but he didn’t have much luck in that. Had Beethoven been able to carry out all his plans to fruition, then, for example, today we would have his opera *Macbeth*, a *Faust*, and many others. He would have contracted himself to write a whole series of operas. But then nothing came of it, after Napoleon’s occupation. But Beethoven’s preoccupation with words, and with *lieder*, extends well into his middle period.

Fidelio: Do you see similarities in the way Beethoven and Schubert created songs?

Prof. Fischer-Dieskau: In *Wachtelschlag*, which both of them composed, quite a number of similarities, some of which, of course, are conditioned by the poem’s intrinsic rhythm.

But, in general, both men were immersed in the music that had been composed up to that time. Both composers had heard the young Hummel perform on the piano, both of them had attended Schlegel’s lectures in Vienna, and so forth. There are many commonalities, from which they certainly did draw their own conclusions.

Fidelio: I’d like to loop back into this again: the imparting of ideas, creative ideas. Permit me to ask, once more, how you approach this question, first, as a singer, and now, as a teacher? Do you see any change? Is there any development in one or another direction?

Prof. Fischer-Dieskau: No. Within each individual young person you meet, you have the same fields to plow. The trick is just to wake them up, to sharpen their ears for what’s already there in the music. The prerequisites remain unchanged. And when young people have grasped that, part of it comes back to the teacher. It’s not all that different with the orchestra. There are orchestras that seem to be encased in dough, so that first you have to break through the normal routine, and clear out the openings.

Fidelio: What, then, is the role of primary education, in elementary schools, and at home with the family, when we see today, for example, that the study of the Classics is being increasingly pushed to the sidelines in normal school curricula?

Prof. Fischer-Dieskau: I don’t think it has anything to do with it. Take Zelter, for example: the son of a master mason and a clothmaker’s widow, and absolutely not involved with music, nobody in the family. He wasn’t yet twelve years old, when he first exhibited a love for music, and then he developed this unbelievably quickly, without the aid of a music teacher. He built himself an organ out of little slats of wood which you could step on. It didn’t produce any sound, of course, but he could hear the tones in his imagination, since he had keys he could press. He took a piece of wood and made believe he could play the violin, until his father hit on the idea: “You’re always making music; should I give you a violin?” “Yes!” And so, he began to scratch away at that. And that’s how it started out; later, he became *the* counterpoint teacher here in Berlin. There are many examples like that: Dvořák, a butcher’s son: there was no talk of music previously.

You have to make a distinction between creative, and re-creative. With creative people, truly new horizons open up. But the re-creative person relies on individual abilities; his “education” never ends. And, I try to give a little nudge to what’s possible for an interpreter to do.

The interpreter has to practice by himself, discovering the possibilities of his own voice, but this experience really remains his alone. He has to learn to be critical of himself, and must find out precisely where his vocal organ possesses the most beautiful tonal possibilities. Others can use only very vague words to impart this to him. You could also suggest it to him in sound, but he has to find his *own* sound! And, of course, his own personality, too, for expressing what must be expressed.

Fidelio: In other recent interviews, you mentioned that in our society, education of the personality gets short shrift.

Prof. Fischer-Dieskau: No, not education of the personality, that I don't believe. What concerns me, is the general social tendency to enforce a level, above which nothing rises and stands out. Anyone who draws attention to himself as an individual, is viewed with suspicion. We acquired this tendency, of course, from America, and we must resist it: levelling, and imitation of what others are already doing.

When, for example, a member of an orchestra wants to do something especially good, he is looked upon with suspicion, because the apparatus says, "We're doing our jobs here, and doing it on a certain level; but anything beyond that. . . ." That's why orchestra directors have a much tougher time than they used to. Whenever someone came, who had the aura of a special genius, all the musicians would immediately perk up and sit on the edge of their chairs.

Fidelio: That evokes the stock image of the chamber musician, the orchestra musician, who doesn't know how to sing. You yourself are also active as a conductor. What can you, as a singer, impart, which others, perhaps, cannot?

Prof. Fischer-Dieskau: To be able to breathe, for example. All music has to speak in some form or other. It is desirable that people make music on the breath, with the breath. That's one basic prerequisite, but there are many, many others. Of course, if these things are overdone, they can lead to bombast and pretentiousness; indeed, there have already been quite enough composers, who have likely trod a dangerous path, such as Bruckner, for example. Today, people are attempting to compensate for this, by simply playing him down as he is in the printed score; but, that wasn't his original intent, either.

It's not often that we are blessed with a structural genius in performance such as Furtwängler, who approached everything that welled up—crescendos and decrescendos, accelerandos, ritenutos—from the standpoint of structure. He always obeyed the laws that were

there in the piece. That's what makes his performances so genuine and convincing.

Fidelio: To what extent do you see in that, Beethoven's famous "as free as it is rigorous," which he prefixed to his "Grosse Fuge"? By which he certainly meant its mode of composition, although you could just as well take it as instructions for what the interpreter is supposed to do.

Prof. Fischer-Dieskau: Well, let's hope he can do it! That's the question.

Fidelio: There exists a universal lawfulness which gives unity to the Many that is our universe. Johannes Kepler pursued this question intensively; Goethe speaks later on about "that which holds the universe together in its innermost essence."

Prof. Fischer-Dieskau: In music, this unity has been sliced up. A lawfulness which Goethe still believed in, which he tried to fathom in the young Mendelssohn by having him play for him: what existed at that time? what followed? how did things actually go? He always wanted to grasp the connectedness of a given domain, and yet, the connectedness of the musical domain would never really open up for him. And then, Schönberg came along later, and said: I'm going to take a radical step, and this will all be taken care of: the end of musical history, it's over. Ever since then, we've been dancing, in convulsive spasms, around contorted musical questions.

Artistically, we are sick in body and soul. What the way out is, is unclear to me. And what unity is to be had, at a time when orchestras are dying out, and when opera houses are about to close their doors; what's going to come next—when nothing new in music, for the orchestra, is truly lasting: pieces are performed once, and then they're thrown away. It's all quite demoralizing.

Fidelio: If I may follow up with one more question. That's certainly true: on the one hand, you have the economic pressure, while on the other, there is such a great hunger for music, for concerts.

Prof. Fischer-Dieskau: It has never been as great as it is right now.

Fidelio: But, what will happen to this hunger? Will it be fed with acrobatic tricks, with some glitz . . .

Prof. Fischer-Dieskau: Each individual person can only try their best to counteract it.

Fidelio: Let's hope that such efforts are not in vain! Professor Fischer-Dieskau, thank you for speaking with us.

—translated from the German
by John Sigerson

Norbert Brainin,
Primarius of
the Amadeus Quartet

‘We aimed
solely at *truth*’

Fidelio: Professor Brainin, even though it seems at first paradoxical: You, in particular, a master of Classical *chamber music*, seem to have been fated to lay out your thoughts on Schubert’s “Great” Symphony in C Major. Can you give us some details about this?

Prof. Brainin: We know, from a letter which Franz Schubert wrote to his friend Leopold Kupelwieser [SEE box, page 67], that by 1824, Schubert was already planning to write a “great symphony,” what four years later became the Symphony in C Major. In that letter, dated March 31, 1824, he wrote, interestingly, that he intended to pave his way “to the great symphony,” by composing string quartets—quartets on a grand style, of symphonic proportions. These quartets, from a stylistic standpoint, were still chamber music—I really don’t like the term “chamber music”; I’d prefer to speak of the “small ensemble” style—but they are nevertheless equivalent to a great symphony, from the standpoint of their content and length.

Fidelio: You’re speaking here about the “late quartets,” beginning with the “Rosamunde” Quartet?

Prof. Brainin: Yes. From this period, 1824 to 1826, dates his composition of the “Rosamunde” Quartet in A minor, Op. 29, followed by the “Death and the Maiden” Quartet in D minor—so called because of the variation movement, which is based on his song of the same name—and, finally, Schubert’s last quartet, the Quartet in G Major, Op. 161. The first movement of this last quartet had its debut at the only public concert of Schubert’s compositions held during his lifetime; that was on March 26, 1828.

Shortly before that, Schubert had completed his C Major Symphony; actually, it was supposed to have been the centerpiece of this concert, but the orchestra members, who at that time were mostly amateurs, could not (or, would not) learn their parts in such a short time, and so the symphony was dropped. Instead, various songs and choruses, one of the two “new piano trios,” and also the “first movement of a new string quartet” (Op. 161) were performed, with Schubert in the audience. The concert was a great success.



Professor Norbert Brainin (right) talks with Lyndon H. LaRouche, Jr., Washington, D.C., 1994. Helga Zepp LaRouche looks on.

Professor Brainin was interviewed for *Fidelio* on Oct. 13, 1996, in Weimar, Germany by Ortrun and Hartmut Cramer.

So, by composing string quartets, Schubert wanted to “pave the way to the great symphony.” And in this respect, we notice something very interesting in Schubert’s work: For him, the year 1819/20 was a kind of watershed; it was during that year, that he changed his entire *mode* of composition. From then on, he no longer wrote “entertainment music” for his friends, but, rather, he wrote music that was *deadly serious*. The last work in the old mode is the “Trout” Quintet, and the first one in the “new” mode is the so-called “Quartet Movement,” the only quartet movement he ever wrote in C minor, toward the end of 1820. This latter work is written in a completely different style than the previous one.

Fidelio: The “Trout” Quintet and the “Quartet Movement” are quite close to each other, timewise . . .

Prof. Brainin: . . . [Y]es, they are separated by only a little more than a year. And they’re very close, too, when you consider that during the four years before then, Schubert hadn’t written any quartets at all—his previous one, the E Major Op. 125, No. 2, which dates from 1817, actually doesn’t count; I’ve never been able to play it right with my quartet—and another four years were to pass before he composed his next one, the “Rosamunde” Quartet. But from the standpoint of genre, the “Trout” and the “Rosamunde” quartets are even closer still, since, outside of the opera *Die Zauberharfe* (*The Magic Harp*), Schubert only composed a very few songs during that time. So, in comparison to his usual output, Schubert wrote *very little* during those fifteen months, and *absolutely no* works in the “small ensemble style.”

Schubert’s early quartets date back to 1812, 1813, and 1814. His very first quartets were still quite simple, since Schubert was only fourteen or fifteen years old—practically still a child. But already only two years later, at the age of sixteen, seventeen years, he was writing *masterpieces*. The three most important quartets from this period, are the E-flat Major, B-flat Major, and G minor.

The B-flat Major Quartet, Op. 168—the Opus numbers are all very high, but they don’t go chronologically—was a string *trio* in its first version. Schubert’s working approach therefore matches the praxis of Mozart and Beethoven, who also composed string trios in order to practice for writing quartets.

Later on, he rewrote this original string trio as a quartet; some say he just “added a second violin to it.”

But, of course, it’s not so simple.

The result, was a true masterpiece. Also, the quartets in E-flat Major and G minor are thoroughly typical Schubert works. And it’s amazing, virtually unbelievable, that a youth of sixteen or seventeen could write such music. It’s like Felix Mendelssohn, who, at sixteen or seventeen, wrote the incidental music to *A Midsummer Night’s Dream*, as well as his Octet and at least two string quartets, all of them *masterful*. It’s hard to imagine how such a thing is possible. Mozart also wrote masterpieces very early in life, but I think he was a “late bloomer” in comparison to Schubert and Mendelssohn.

But, back to his *mode* of composition: Schubert had



The Amadeus Quartet.

models he could follow. In order to practice for his late string quartets, Mozart—and I’m not talking about his Six Quartets Dedicated to Haydn, in which he had already applied the new style of *Motivführung* [motivic thorough-composition], but rather, his three “Prussian” Quartets K. 575, 589, and 590—Mozart wrote his so-called “Divertimento.” This string trio, K. 563, however, is a divertimento in name only. It was a preparatory exercise. But, as is always the case with Mozart, whenever he does something like that, he ends up with well-nigh the best that had ever been produced in the genre! It was the same with Beethoven: all of his string trios were preparatory work for his six quartets Op. 18. And, as I have already said, Schubert’s late quartets are basically exercises in preparation for the great C Major Symphony.

Fidelio: Couldn’t you generalize your point, and say that the symphony developed out of the string quartet—not



More than other composers, Schubert often worked entire melodies or motivic kernels from his lieder into chamber music. Shown here: Autograph of "Die Forelle" ("The Trout"). Schubert gave the song elements instrumental treatment in the "Trout" Quintet (1819).

personal matter. It didn't have anything to do with his formal style. I don't know when he first consciously applied the compositional method of *Motivführung*. As far as I know, this method can be found in all of

out of quartet as a form, but rather, from the fact that the four instruments . . .

Prof. Brainin: . . . four-voiced polyphony . . .

Fidelio: . . . form, as it were, the true nucleus—LaRouche speaks of the "torso"—of the orchestra?

Prof. Brainin: Absolutely. This really goes back to Haydn, since he not only invented the string quartet, he also invented the instrumentation of the symphony orchestra. Later on, of course, it was extended, but the instrumentation of the Classical symphony—a string quartet, supported by the contrabass, with the addition of a few wind instruments—this actually comes from Haydn.

During the year before the C Major Symphony, which was completed in early 1828, Schubert had written *Die Winterreise*, and after finishing the symphony, he wrote his genial C Major String Quartet. The posthumously published, fantastic B-flat Major Sonata was also composed during this period—quite late, in September 1828, only shortly before his death. The Octet (1824), and, really, both of the two piano trios from 1827, also belong to the preparatory phase leading to the C Major Symphony.

Fidelio: You said that, for Schubert, there was a kind of caesura, a "watershed," between 1819 and 1820. Can you put your finger on the reason for this?

Prof. Brainin: I think that with Schubert, it was a purely

his works. The fact remains: Around that time, he had wanted to resume his study of counterpoint, because he wanted to learn even more. He never got around to doing that, because he died so early, in November 1828, at barely thirty-two years of age. Perhaps his mind's eye had been focussed on developing along the same lines as Beethoven did; but he never got that far, even though these grand "late" works of his already contain everything in them. In the works that Schubert wrote toward the end of his short life—in the marvelous piano sonata, in the quartets, and also in the C Major Symphony—we find four-voiced polyphonic composition on a level of development comparable to that of Beethoven's late works.

Four-voiced polyphony—this style, in which, on the

Norbert Brainin made chamber music history as first violinist of the unforgotten Amadeus Quartet. This quartet's activities revolved around the works of Haydn, Mozart, Beethoven, Brahms, and, especially, Schubert. Following the death of the violist Peter Schlof in 1987, the Amadeus Quartet stopped giving concerts; its surviving members currently teach, and promote young quartets from around the world.

one hand, each voice has its own independent existence, and yet, at the same time, is an integral part of the whole—that is Beethoven’s great accomplishment. Of course, this has much to do with *Motivführung*, since each voice is composed strictly according to the method of motivic thorough-composition. Each is clearly recognizable, and is a unity in its own right, but nevertheless everything fits together. This method was composed, for the first time at this level of perfection, into his Quartet Op. 59, No. 2—at many points there, although not consistently throughout. Beethoven only first achieved true perfection throughout, in his late works, Op. 127, 130, the “Grosse Fuge” Op. 133, as well as in Op. 131 and 135. This “as rigorous, as it is free,” is entirely typical for him. The “*Tantôt libre, tantôt recherchée*,” which he wrote above his “Grosse Fuge”: now, that’s a real contradiction!

Fidelio: From a formal-logical standpoint, an insoluble contradiction, a true paradox.

Prof. Brainin: But this dictum of his, is true for all music—for composition as well as for performance. It is a sort of *leitmotiv* of the art of Classical composition. And it is we

artists who must bring such contradictions to bear in our interpretation. That goes without saying. And also for Bach, because he, too, is both “rigorous and free” at the very same time. And, as a musician, you must find a way to execute that; this places demands on our artistry; all of our creative powers go into it.

Fidelio: If we may return to Schubert: What was the nature of the crucial difference at the watershed you were speaking about earlier? Did Schubert more clearly grasp this “as rigorous, as it is free” contradiction, following 1819/20?

Prof. Brainin: Possibly. I don’t know exactly; all I know, is that a change in Schubert’s thinking occurred between these two works—the 1819 “Trout” Quintet, and the Quartet Movement, which was written a good year later. Beyond that, no one really knows exactly why he wrote this movement; and it’s also unclear, what this movement belongs to. Did he conceive of it as a separate movement, or as part of an entire quartet? And, if it was the latter, or

was intended to be so, did he do any further work on it, or, have the other parts been lost? All these things are simply not known. Therefore, I can’t say.

Fidelio: But it *is* known—you already mentioned it—that, just as with Haydn, whose quartet output, following his revolutionary “Russian” Quartets Op. 33, had a lapse of almost ten years, Schubert also had a long lapse between his early and his later quartets; and the only



“An excursion of Schubertians,” memorialized by Schubert’s friend, the artist Leopold Kupelwieser. Above: The journey to Atzenbrugg; Schubert and Kupelwieser are standing at the back of the carriage. Right: Schubert (bottom left) provides piano accompaniment for the amateur theatrical. (Oil painting and watercolor by Kupelwieser, 1820.)

work that lies in between, is this “Quartet Movement.”

Prof. Brainin: Yes, and therefore the last “early” quartet, written before this Quartet Movement, was the above-mentioned one in E Major, in 1817. It is written in a style that is completely different from the other ones—in what you might call a virtuoso style. Purely instrumental, very technically demanding, completely out of keeping with what was later taken up again, in the quartets written from 1824 onward, in a much-improved form.

Fidelio: When one studies Schubert’s works, one is particularly struck by the fact that, more so than other composers, Schubert quite often worked entire melodies or motivic kernels from his *lieder* into his chamber music. When you say that the later quartets, such as the “Rosamunde” and the “Death and the Maiden”—all of which have such elements—are the antecedent form of his symphonies, how would you rank them?

Prof. Brainin: The motivic kernel of the “Rosamunde” Quartet comes out of the incidental music for the play

Rosamunde, Prinzessin von Zypern (*Rosamunde, Princess of Cyprus*). Much of this work contains things which he used elsewhere. For example, not only does the entire A minor Quartet consist of motivic elements from *Rosamunde, Prinzessin von Zypern*—we find one theme, for example, in the Scherzo, while the second movement comes from the “Entr’acte,” the music that bridges from one act to the next—but he also made variations for the piano out of it.

Fidelio: But he wrote the orchestral version first?

Prof. Brainin: Yes, absolutely.

As for the “Death and the Maiden” Quartet: The song that bears the same name consists of two parts; in the quartet, he only uses the part that has to do with Death. This he made into the theme of the second movement, and of the variations.



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But the entire piece, the entire D minor Quartet, is permeated by a longing for death. It’s very easy to recognize. The end, the final movement, is like a gallop into death; it has an air of hopelessness, and also it ends in D minor. Interestingly, there’s something similar in the G Major Quartet: the counterposing of G Major to G minor. This dualism, this contradiction, is a dramatic element; it starts right at the beginning: The opening harmony is a G Major chord, and the next one is in G minor. The tension between major and minor permeates the entire work; it is only finally resolved in the coda. In the end, major

emerges as the winner, and the march to death is a joyous one. As with the D minor Quartet, here, too, it is a ride into death; only here, in the G Major Quartet, it is a joyous ride; in the D minor Quartet, on the other hand, a deathly serious, despairing feeling prevails.

The C Major Quintet is related to the symphony, in that Schubert wrote it in the same state of mind of that year; the same goes for *Die Winterreise*, which was composed the year before. Schubert sang and played it for his friends; they didn’t like it at all!

Fidelio: You have reported that you performed the D minor Quartet with your Amadeus Quartet quite often in concert. Why this quartet in particular?

Prof. Brainin: On the one hand, this was in accord with the public’s wishes; our audiences wanted to hear us play it. This is certainly related to the fact that it was one of the first works that we had recorded back then.

On the other hand, we played the work in a very special manner—but one which, for me, was really quite normal. Looking back at it today, I know that it was unique. None of the other quartets have played it that way, because they didn’t know how they should do it; because they didn’t have the right concept. To this very day, no one else has played it that way. Either they haven’t cared to do it, or they have been unable to do so. They have sentimentalized everything.

Fidelio: Is a special technique required to play this work the way the Amadeus Quartet played it?

Prof. Brainin: Technique—naturally. If one interprets the way the Amadeus Quartet does, one must

acquire a certain technique that enables one to do it. It wasn’t anything new; rather, it was rediscovered.

But, most importantly: in this way, you can achieve freedom. And, actual freedom exists within the bounds of a certain legality, a certain rhythm. To put it quite crudely: You play in time with each other; and, within the framework of this “playing in time,” your playing becomes free. Every now and then, you may lengthen something a bit, but, that must be balanced out somehow, by taking away from somewhere else. That’s just an abstract concept; it’s called *rubato*. But, a *rubato* must be

done *thoughtfully*. It must be “both free and rigorous.” Nobody wrote like that, before Beethoven.

Fidelio: Getting back again to the Schubert-Beethoven connection: If you associate Schubert’s later works, especially the quartets, with Beethoven’s late works, did the two men know each other intimately on this level of compositional artistry?

Prof. Brainin: No, not intimately. Schubert tried to write the same kind of music; it was just in the air of Vienna those days, you might say. Because music had not been “invented,” it was just there. But Schubert was not as far advanced as Beethoven. And what did Schubert *know* about Beethoven? He would have knelt down before him. Many have remarked, “Beethoven is something monumental,” but they really didn’t understand him. Schubert, on the other hand, *knew* it, but he himself had not progressed as far.

Fidelio: One more question on the C Major Symphony. You said that in his quartets, he was practicing for the symphony—that is, he was studying the art of applying four-part polyphony on a symphonic scale—an art which Beethoven had brought to a pinnacle . . .

Prof. Brainin: . . . [T]hat is what’s so special about this

symphony; and that is why it is Schubert’s greatest work. In his selection of themes and motivic kernels, there is, of course, a big difference between the symphony and the quartets; the former is “orchestral,” and the others are “instrumental”—though always based on the singing voice. What unites them, however, is especially their extended treatment: this “Schubertian expansiveness,” or “divine length,” as Schumann later called it, which all composers after him, strove to emulate.

Fidelio: Schubert’s works are particularly interesting, of course, from the standpoint of the relation between the human singing voice and the poetic idea—an idea which is expressed in a particular speech form, a prosody, from which motivic seed-elements emerge, which can be further worked up in a particular form.

Prof. Brainin: That’s precisely the way Schubert composed songs. He always let himself be inspired by the poetry, that’s clear. Sometimes he even wrote the poetry himself, sometimes not. It was always something that spoke to his heart; it wasn’t always the very best poetry, but, deep within him, it touched something, which then brought forth the idea for a song.

Fidelio: From the standpoint of a string quartet player,

Robert Schumann on the C Major Symphony:

‘A unique way of treating instruments . . . as if they were human voices’

While on a trip to Vienna in 1838, Robert Schumann paid a visit to Franz Schubert’s brother Ferdinand, who allowed him to look through the unpublished Schubert compositions in his possession; among these was the C Major Symphony. They agreed to send it off to Leipzig, where, on March 23, 1839, it was performed for the first time, under the direction of Felix Mendelssohn. Schumann writes:



Corbis-Bettmann

Robert Schumann

I’ll say it outright: Whoever doesn’t know this symphony, doesn’t know anything about Schubert yet, even though, after all that Schubert has already bestowed upon Art, many might see this as a degree of praise scarcely to be believed. . . .

Here we find, in addition to masterly compositional technique, life in every fiber, coloration down to the finest nuance, meaning everywhere, the clearest expression of detail, and over everything, there is poured a romanticism such as we have already experienced elsewhere

in Schubert. And this divine length of his symphony . . .

We always have to call it an extraordinary talent, when a person who has heard so few of his own instrumental works performed during his lifetime, is able to arrive at such a unique way of treating instruments, as well as the orchestral ensemble, which often talk across to each other, as if they were human voices and chorus. Outside of many Beethoven works, I have never been so taken off guard and surprised by this similarity to the singing organ . . .

‘I want to pave my way to the great symphony’

From a letter written by Schubert to his childhood friend, the painter Leopold Kupelwieser, in Rome, March 23, 1824.

Dear Kupelwieser,

I have been feeling the urge to write you for some time now, but I never knew which way to turn. But now the opportunity has come up via Smirsch, and so, finally, I can completely pour out my soul to someone. . . .

In a word, I feel like the most unfortunate, most miserable human being on the face of the earth. Imagine a person whose health just doesn't want to ever again get back to normal, and who, out of despair over this,

keeps getting worse at what he does; imagine a person, I say, whose brightest hopes have come to naught, for whom love and friendship offer nothing but pain at most, whose (incipient, at least) enthusiasm for Beauty, is in danger of being snuffed out; and ask yourself whether that isn't a miserable, unfortunate man? . . .

On songs, I haven't done much new; instead, I'm testing myself out on a number of instrumental things, since I composed two quartets for violins, viola, and violoncello, and an octet, and want to write yet another quartet; generally, in this way, I want to pave my way to the great symphony.



Leopold Kupelwieser

might you address the following question: You said earlier, that the Amadeus Quartet had a very special sense and feeling for “Death and the Maiden,” and also played it accordingly—quite differently from the way it is played nowadays.

Prof. Brainin: If I might be permitted to put it this way: Most quartets' interpretations of it have been wrong: they have sentimentalized it. Schubert's “Death and the Maiden” is *dramatic*, but they have completely excluded this dramatic element. And the audiences have responded to the sentimentality. We, on the other hand, played it *without* sentimentality; we aimed solely at *truth*, which was much more at work here, than mere sentimentality. We turned everything that people had imagined Schubert to be, upside-down, and did it differently.

Fidelio: Earlier as well, audiences have always wanted this sentimentality. And whoever yields to that, can, of course, get through life relatively easily. . . .

Prof. Brainin: . . . absolutely; easy *business!*

Fidelio: Today's cultural world is confronted with a certain dilemma: On the one hand, people attend concerts because they must satisfy their craving for real culture, for *truth*; but, on the other hand, standing there on the stage you have the young artists, who practice like mad and accomplish enormous technical feats, and yet the overall result is often unsatisfying.

Prof. Brainin: “Enormous technical feats. . .”—yes, on a certain level. But I fear that this level is pretty superfi-

cial—generally speaking, that is, only generally.

For instance, a conservatory teacher once sent a very gifted Korean girl to me. She played me Schubert's “Duo”—also called a sonata—Op. 162, very nicely, to be sure; but I immediately noticed that certain nuances had been inserted, that had absolutely nothing to do with Schubert. Completely made up! Just in order to do *something*. But the whole had been perverted, *tonally*. And I showed her that there was not the slightest reason to insert these nuances, that they just weren't valid. Because the very first thing one must do, is capture the “right tone” for playing a piece or an individual phrase; only after that, can you go on to talk about other things. And once you have managed to do that, other, entirely different nuances come out—the very nuances that are actually in the music. That's a typical example.

Many teachers grope around for something to tell their students; they start out by telling them nonsense, and by saying they should play with “imagination” and “fantasy.” But what's fantasy? You have to have the *right* fantasy. And what's the right fantasy? You must discover something that is already there; don't just make things up. The inventor doesn't make things up, he is a *discoverer*; basically. And if you don't know anything, and haven't discovered anything, that's when you start to get sentimental.

Fidelio: Thank you, Professor Brainin, for speaking with us.

—translated from the German
by John Sigerson

The Harmony of the World

(Harmonice Mundi)

Preface to Book I:

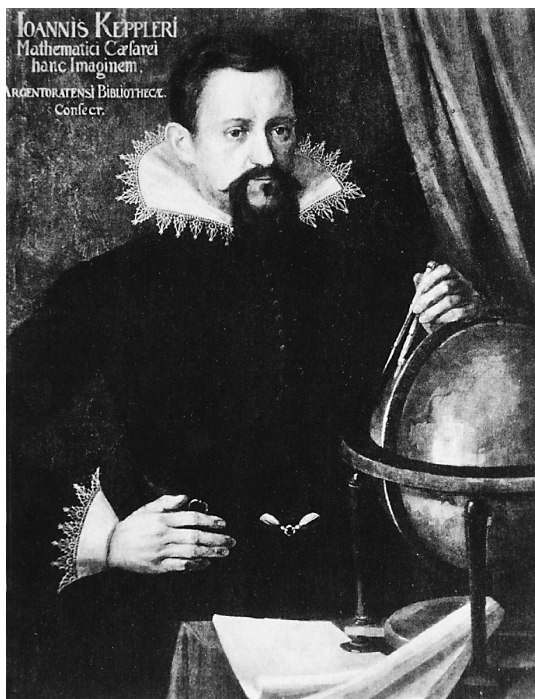
On the Reason for the Knowledge and Proof
of the Regular Plane Figures Which Create Harmonic Proportions,
with their Origin, Classes, Order, and Differences

(1619)

Johannes Kepler

IN THE WORK KNOWN AS *Harmonice Mundi*, the German scientist and mathematician Johannes Kepler (1571-1630) presented to the world his crowning work, based on the method which he had defined in his first book, *Mysterium Cosmographicum* (*The Secret of the Universe*) (1596). Many know of *Harmonice Mundi* as the work in which Kepler announced the third of his laws of planetary motion: the ratio of the cube of the (average) radius of the planet's orbit to the square of its periodic time, is equal to a constant for all planets. This law, which applies as well to all the planets and systems of moons discovered since Kepler, does not define the true importance of this work, however. For, in *Harmonice Mundi*, Kepler synthesized his studies in music, geometry, epistemology, and astronomy, to create a scientific hypothesis for the astronomical domain which opened the door to critical advances in all science.

In the Preface translated here, Kepler expresses his sense of the sacred nature of scientific inquiry, both from his descriptions of how it should be carried out, and his



unabashed attacks against those who demean it. Although it serves to introduce the entire work, and many of the profound inquiries about the character of human knowledge are touched on here, this Preface refers specifically to Book I, and the foundations laid here for the rest of Harmonice Mundi. Book I is the most difficult section to read, but provides the scientific language which Kepler will need throughout the rest of the work. The language is based on the process, described in Book V of Euclid's Elements, of making incommensurable line lengths "knowable," by determining a method to construct them in defined ratios to a given line; Euclid's Book X organizes such incommensurables into thirteen

divisions, or species. Kepler calls the numbers which express these relationships, traditionally known as "irrationals,"—i.e., "not capable of ratio," commonly misconstrued to mean "not reasonable"—, "inexpressibles"—"not nameable"—, to emphasize their susceptibility to reason. Kepler understands the process of determining the different species of inexpressibles in Euclid's Book X, to be a necessary precondition for

constructing the five regular (Platonic) solids in Euclid's concluding Book XIII. Kepler's first great scientific insight, reported in *Mysterium Cosmographicum*, had been to recognize the way in which these five regular solids determine both the number of planets as he knew them, and the relative distances of their orbits from the Sun. In *Harmonice Mundi*, he uses that insight, plus the coherent basis for constructing the consonant (sweet-sounding) musical intervals, to explicate the full lawfulness of the structure of the Solar System, including the relative speeds of planetary motion and the elliptical nature of the planetary orbits.

Kepler's view of Euclid has particular relevance when read in the context of Lyndon LaRouche's Introduction to the forthcoming Book II of the Schiller Institute's "Manual on the Rudiments of Tuning and Registration" [SEE page 28]. Kepler comprehended the work of Euclid as a whole, guided by a purpose: the construction of the Platonic solids in the final Book XIII. There, in the proof of the uniqueness of these geometrical figures, is contained the exposition of "Euclidean space" from the standpoint of the geometrical method identified by LaRouche as *Analysis Situs*. Without the rigor which Euclid supplies, and which Kepler here defends, the breakthrough of Bernhard Riemann to a non-Euclidean geometry of change, would not have been possible. Transformations of

scientific outlook could not be accomplished; the thinker would be trapped, either in an existing mode of thinking, or in a world in which any proposed change would be nothing more than mere irrational assertion.

By his passionate appreciation of Euclid's geometrical system, Kepler was enabled to take the step to his conception of well-tempered polyphony as the language of science. As he wrote at the end of the final Book V of *Harmonice Mundi*:

Accordingly, the movements of the heavens are nothing except a certain everlasting polyphony (intelligible, not audible) with dissonant tunings, like certain syncopations or cadences (wherewith men imitate these natural dissonances), which tend towards fixed and prescribed clauses—the single clauses having six terms (like voices)—and which marks out and distinguishes the immensity of time with those notes. Hence, it is no longer a surprise that man, the aper of his Creator, should finally have discovered the art of singing polyphonically, which was unknown to the ancients, namely, in order that he might play the everlastingness of all created time in some short part of an hour by means of an artistic concord of many voices and that he might to some extent taste the satisfaction of God the Workman with His own works, in that very sweet sense of delight elicited from this music which imitates God.

Since the causes of harmonic proportions have to be sought by us in the several divisions of a circle into equal parts, which are made geometrically and scientifically, that is, from the provable, regular, plane figures, I considered that it had to be made known at the outset, that the mental characteristics of geometrical things, are today, to the extent shown in published accounts, unknown for solids. Thus, among the Ancients, no one appears who showed that he himself knew these specific characteristics of geometrical things exactly, except for Euclid and his commentator Proclus. The distribution, by Pappus of Alexandria, and by the Ancients whom he followed, of the problems arising from each part of the subject of geometry into planes, solids, and lines, was close enough to the habits of mind which have to be developed. However, his treatment is short, and applied to practical matters. No mention is made of the theory; but, unless we are occupied in our whole mind with the theory of this, we will never be able to comprehend harmonic ratios.

Proclus Diadochus, who published four books on Euclid's Book I, brought theoretical philosophy into the subject of mathematics, as is known. If he had also left us his commentary on Book X of Euclid, and had not been

despised, he would both have freed our geometers from stupid ignorance, and assisted me in this labor of developing the characteristics of geometrical things for solids. It is easily shown from the Preface to his book, that these distinctions of mental existences were known to him well enough, since he established that the principle of the whole essence of mathematics, is the same as those which also advance through all forms of existence, and generate everything from themselves, that is, the finite and the infinite, or the limited and the unlimited, recognizing the limit or circumscription as the form, the unbounded as the matter, of geometrical things.

The characteristics of quantities* are shape and proportion: shape of the particular, proportion of what is joined together. Shape is completed by limits: a straight line by points; a plane surface by lines; a solid is limited, circumscribed, and shaped by surfaces. And, that which has been bounded, circumscribed, and shaped, can, then, also be comprehended by the mind. The infinite, and the indeterminate, to the extent they are such, can be con-

* That which has extension. In the standard English translation of Euclid's *Elements* by Thomas Heath, the term used for the generalized theory of extension and measurement, is "magnitudes."—SB

fined by none of the knowledge which is provided by definitions, and by no restraint of proof. But the figures exist in the Archetype, before they are in that which is produced. They are in the divine Mind, before they are in created things, with a different mode of the subject, but nonetheless with the same form of its essence.

For quantities, therefore, shape, a certain mental essence, or intellection, is made their essential characteristic. This is much clearer with proportions. Since a shape is completed by more than one bounding limit, a shape is made so that it uses proportion on account of this plurality. But what would proportion be, without an act of the mind?—it cannot be known at all. And so, therefore, for this reason, whoever ascribes limits to quantities as their essential principle, regards the quantities which have been shaped, as having an intellectual essence. But there is no need for argument: Proclus' book should be read in its entirety; it will be clear enough that he did know the intellectual characteristics of geometrical things in a provable way. However, although this is affirmed, he does not put it this way, separately, on its own, in the open, conspicuous, so that he could also admonish his own carelessness. His language flows like a flooding river, layered throughout with an abundance of the more abstruse propositions of Platonic philosophy, among which the above is the argument of this extraordinary book.

But, thus far, our generation has not been permitted to penetrate such hidden matters. Proclus' book has been read by Petrus Ramus [Pierre Ramée (1515-1572)], but, in what concerns the core of the philosophy, it has been scorned and thrown aside, along with Book X of Euclid. And, whoever wrote commentaries on Euclid, if they wrote in his defense, has been ridiculed, and ordered to remain silent. The aroused wrath of the embittered censor is turned against Euclid as against a criminal. Euclid's Book X, which, when read and understood, can unfold the secrets of philosophy, has been condemned by savage sentence not to be read. I ask you to read Ramus' words; nothing more shameful was ever written by him. In the *Study of Mathematics*, Book 21, he says:

The matter developed in Book X has been handed down in such a way that I have never found such obscurity in human letters or arts. I say obscurity not in relation to human understanding—Euclid anticipates that (this should be clear to the illiterate and uneducated, who only look at what is right in front of their eyes)—but in relation to investigating and searching out what the purpose and proposed use of the work might be, what the classes, types, and categories of subjects might be. I have never read anything more confused and involuted. Does it not seem that

the Pythagorean superstition has been drawn into this book as if into a pit . . .

By Hercules, Ramus, had you not believed that this book would be easy to understand, you never would have slandered it so much as obscure. You need more work. You need quiet. You need forethought. And, above all, you need attentiveness of mind. Then, might you understand the intent of the writer; from thence, the good sort of mind will be lifted up to the point where, resolving to live at last in the light of truth, it is inspired, exulting with incredible joy, and perceives the whole universe and all its different parts in the most exact way, as if from a mountaintop. But, for you, who act in this place as the advocate of ignorance, and of the common man seeking advantage from everything, whether divine or human—I say, for you, these matters may be “unnatural sophistries,” for you “Euclid will have abused the quicker thinker immoderately,” for you “this subtlety has no place in geometry.” Let it be your lot to slander what you do not understand. But, for me, hunting for the causes of things, no other path will lead to them apart from that which is in Euclid's Book X.

Lazarus Schoener followed Ramus in his geometry; he confessed that he was not able to see any use in the world for the five regular solids. Then, he read the book which I entitled “The Secret of the Universe,” in which I prove that the number and orbits of the planets were chosen from the five regular solids. Now, look at the damage that Professor Ramus did to his student, Schoener. First, when Ramus read Aristotle, who had refuted the Pythagorean philosophy concerning the way in which the properties of the elements derive from the five solids, he immediately conceived a contempt for the whole of the Pythagorean philosophy. And then, since he knew that Proclus had been part of the Pythagorean cult, he did not believe that which Proclus affirmed, which was most true, that the ultimate purpose of Euclid's *Elements*, to which all the propositions of all the books taken together are related (with the exception of those on perfect numbers), is the five regular solids. From this, there rose up in Ramus the most shameless belief, that the five solids must be removed from the conclusion of Euclid's *Elements*.

When the conclusion of the *Elements* was chopped off, only a formless heap of propositions was left of Euclid, like the rubble of a levelled building, against which, as if against some ghost, Ramus inveighs in all the twenty-eight books of his *Study of Mathematics*, speaking with great harshness and rashness, most unworthy of such a man. Schoener followed this belief of Ramus, and thus himself believed that there is no use for the regular solids.

Not only this, but he followed Ramus' judgment, and despised and scorned Proclus, from whom he could have learnt the use of the five solids, both in Euclid's *Elements*, and in the making of the universe. However, the student was much happier than the professor, since he joyfully accepted the use of the solids in the making of the universe, as disclosed by me, which Ramus had refused to impress upon him from Proclus.

But, then, so what if the Pythagoreans attributed these figures to the elements [earth, air, fire, water, and the heavenly "quintessence"—SB], and not, as I do, to the spheres of the universe? Had Ramus exerted himself to remove this error of theirs about the real subject of the figures, as I did, he would not have come up with one tyrannical word against this whole philosophy. Or, what if the Pythagoreans actually taught the same thing I do, while hiding their meaning in a protective cloak of words? Is not the Copernican form of the universe in Aristotle, and falsely refuted by him, but under other names, as when they called the sun, "fire," and the moon, "Antichthon"? For if the ordering of the orbits was the same for the Pythagoreans as it was for Copernicus; if the five solids and the necessity for their five-fold number was known; and, if they all uniformly taught that the five solids are the Archetypes of the parts of the universe: how little more would it take for us to believe that their opinion was read by Aristotle in its secret form, but had been, as it were, refuted by the literal meaning of the words?

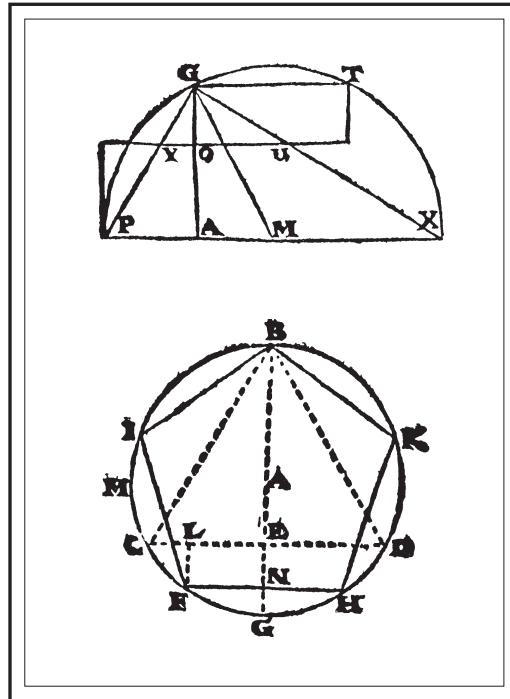
Thus, where Aristotle read [the element—SB] "earth," as that to which they assigned the cube, those men might perhaps have understood it as Saturn, whose orbit is separated from Jupiter by the interposition of a cube. And, the common sort of people attribute rest to earth; thus, Saturn has been allotted the slowest motion, the closest to rest, for which reason the planet was given the name "rest" by the Hebrews. In the same way, Aristotle read that the octahedron was assigned to "air," when they might perhaps have understood by this, Mercury, whose orbit is contained by an octahedron; and, Mercury is no less fast (it is certainly the fastest of all the planets) than the air is mobile. Perhaps Mars was implied by the word for "fire," since the

name of this planet otherwise is "pyrois," which is derived from the Greek word for fire, and perhaps the tetrahedron was assigned to this because its orbit is enclosed by this figure. And, under the cover of "water," to which the icosahedron is attributed, the star of Venus could be hidden (its orbit is contained by an icosahedron), because fluids are subject to Venus, and she herself is said to have been born from the ocean spray; hence, the name, Aphrodite. And lastly, the sound of the word "world" could have meant Earth, and the dodecahedron could

have been allotted to the "world," because the orbit of the Earth, which is bounded by this figure, is divided in twelve longitudinal parts [the divisions ("Houses") of the astronomical Zodiac—SB], as this figure is bounded by twelve planes for its whole extent. If this is accepted, then, in the mysteries of the Pythagoreans, the five solids would not have been distributed among the elements, as Aristotle believed, but among the planets. This, if you will, is strong confirmation of what Proclus handed down, among other things, as the purpose of geometry, and what he taught, about the way in which heaven would have taken upon itself figures consistent with its defined parts.

And this is not yet the end of the injury which Ramus does us.

Behold Snell, the most skillful of today's geometers, giving open support to Ramus. In the preface to "The Problems of Ludolph of Coellen [Cologne]," he says at the start that "the very division of the inexpressibles into thirteen different types is of no profitable use."* I grant that, if he does not recognize any uses, except for everyday life, and if none of the investigations of physics would be useful for life. But why does he not follow Proclus, a man whom he admits recognizes some greater good in geometry than the arts which are necessary to life? But, then, the use of Book X would obviously have been clear, in evaluating the types of figures. Snell brings forward authors of works



Diagrams from *Harmonice Mundi*, Book I

* These "inexpressibles" are incommensurable magnitudes, which are constructable, but cannot be expressed as ratios of whole numbers; therefore, no precise numerical value, or "name," can be given them. In Book X of the *Elements*, Euclid divides the inexpressibles known to Greek mathematics into thirteen distinct species.—SB

on geometry who do not use Book X of Euclid. All these, of course, deal either with problems of lines or solids, and with figures, or such magnitudes as do not have their purpose within themselves, but obviously tend toward other uses, and would not be investigated without those other purposes. But the regular figures are investigated on their own account as Archetypes; they have their perfection in themselves; and they are counted among the problems of planes, for a solid is enclosed by plane surfaces, and, likewise, the most important subject matter of Book X pertains to planes. Therefore, why would anything else be brought forward? Or, why are the goods which Codrus does not buy to stuff his belly, but Cleopatra does buy to decorate her ears, thought to be so worthless in value? “Is torment so fixed in our way of thinking?” Certainly, for those who vex the inexpressibles with numbers, that is, by expressing them [i.e., numerically—SB]. But, I do not use numbers to discuss these types, nor algebra, but the reasoning of the mind; since, it is not necessary for me to use these to add up a shopkeeper’s accounts, but to develop the causes of things.

It is thought that these subtleties ought to be separated out from the *Elements*, and stuffed away in the archives. That is what Ramus’ trustworthy student is getting at, and he is not idly making a point. Ramus destroyed the form of the Euclidean construction, he tore down the high-point of the work, the five solids: after these had been removed, the whole structure was destroyed, cracked walls are left standing, jutting arches lie in ruins: then Snell took away the cement as well, for there is no use for his solid house if not cemented together under the five figures. What more productive discovery by a student could there be, than his affirmation that by good fortune he had gained an understanding of Euclid from Ramus. They think the *Elements* are so called, in that there is found in Euclid an abundant variety of propositions, problems, and theorems, for every type of quantity and of the arts that are concerned with these; whereas the book may have been named *Elements* from its form, in which a subsequent proposition is always supported by the one that precedes it, right through to the last proposition of the last book (and partly, through Book IX), which cannot stand without everything that preceded it. Out of the architect, they make a forest ranger or timber merchant, by thinking that Euclid obviously wrote his book so that it might be the storehouse for all others, and he alone should have no dwelling of his own. But, this is more than enough of these matters at this point; we must now return to the main line of our discussion.

When I understood that the true and real characteristics of geometrical things, from which I had to derive the

causes of harmonic proportions, are generally not known in any depth; that Euclid, who carefully handed them on, is dismissed and suppressed by the mockery of Ramus, and because of the confused babbling of the stupid, is heard by nobody, or else tells the secrets of philosophy to the deaf; and that Proclus, who could have opened up the mind of Euclid, uncovered hidden things, and made what is difficult to understand, easy again, is an object of derision, and did not continue his commentary up to Book X; I saw that all this had to be done by me. So, to begin with, I wanted to transcribe from Euclid Book X, those things which would contribute in a special way to my present undertaking; I wanted to shed light on the series of things in that book, by interposing certain definite divisions of the subject matter; I wanted to show the reasons why some parts of the divisions have been omitted by Euclid; and then, lastly, there must be a discussion of the figures themselves.

I have been content to simply refer to the propositions in the cases which were proven most clearly by Euclid, but there are many questions, which have been proven by Euclid in a different way, which now, on account of the purpose that has been given me, that is, the comparison of the figures which can be known with those which cannot, must be reworked or joined together again where they have been separated, or the order changed. I have combined the series of definitions, propositions, and theorems, in numerical order, as I did in the *Dioptics*, for the ease of reference. I have not been accurate with regard to lemmas, nor over-anxious about names, as I am more concerned with the constructions themselves. Clearly, this is not geometry in philosophical terms yet, but in this part I do discuss the philosophy of geometry. I would like to have been able to deal in a still more popular way with the questions of geometry, provided the treatment were clearer and more palpable. But, I hope that readers equal to both will take my work in good part, in that I both teach geometry popularly, and was not able to overcome by my efforts the obscurity of the subject matter. Finally, I give this advice to any readers who might be completely unfamiliar with mathematical questions: They should pass over the narrative, and read only the propositions from Number 30 to the end, and taking those propositions on trust, they should proceed to the other books, especially the last. If such readers should be terrified by the geometrical argument, they might deprive themselves of the most joyful fruit of the harmonic investigation. Now, let us go to work, with God.

—translated by Sylvia Brewda and Christopher White,
assisted by Molly Kronberg

Emergency Appeal to President Clinton Convene a New Bretton Woods Conference!

An appeal to President Clinton for a New Bretton Woods conference [SEE pages 4-5] was published as a full-page advertisement in the May 15 edition of *Roll Call*, the semiweekly Washington, D.C. newspaper. *Roll Call* is distributed in bulk to the staff and members of the U.S. Congress and the White House.

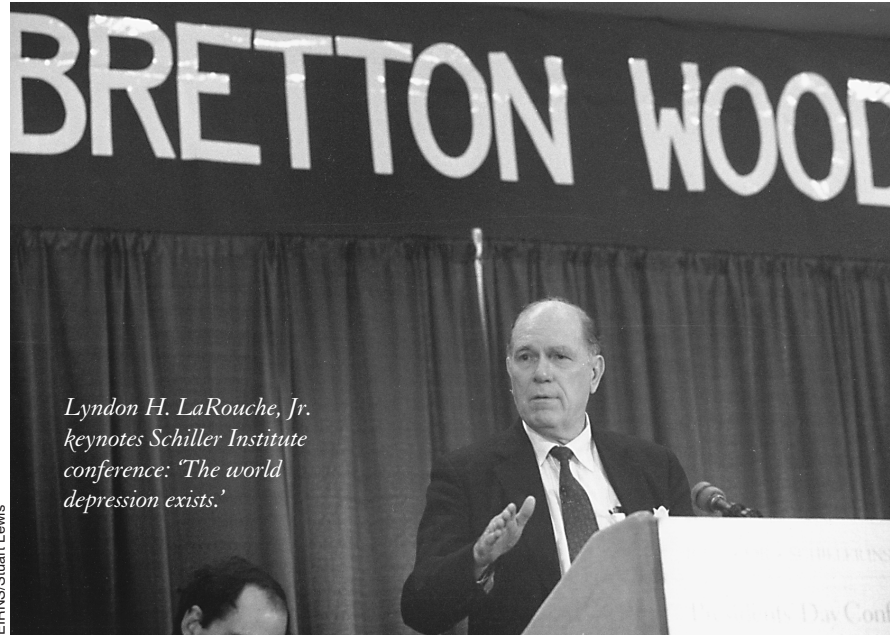
The appeal, initiated by Helga Zepp LaRouche and Ukrainian economist Natalya Vitrenko, member of Ukraine's Supreme Rada (Parliament), has been signed by hundreds of world leaders, including Gen. (ret.) Joao Baptista Figueiredo, former President of Brazil (1979-85), and Godfrey Binaisa, former President of Uganda (1979-80). Other endorsers include:

United States: Nine former U.S. Congressmen; 192 current and former state representatives from 37 states; dozens of city and county council members from across America; trade union, Civil Rights, and religious leaders.

Europe: Seventy-three current and former members of parliament from eight nations, including Russia, Poland, Italy, Georgia, Ukraine, Armenia, Bosnia-Herzegovina, and Croatia; dozens of economists and scientists from leading academic institutions; German and Polish trade union leaders; and leaders of human rights organizations from several Eastern European nations.

Ibero-America: Thirty-one current and former members of Congress, from ten nations, including Argentina, Bermuda, Brazil, Colombia, Dominican Republic, Mexico, Panama, Peru, Trinidad-Tobago, and Venezuela.

From Africa, Asia, and Australia: Dozens of current and former government officials and members of parliament, as well as trade union, religious, and human rights leaders from Burundi, Cameroon, Ethiopia, Sierra Leone, Republic of South Africa, Sudan, Uganda, Zaire, Pakistan, Jordan, Australia, and New Zealand. From the embattled nation of Sudan alone, 20 current Members of Parliament endorsed the appeal.



*Lyndon H. LaRouche, Jr.
keynotes Schiller Institute
conference: 'The world
depression exists.'*

EIRNS/Stuart Lewis

Schiller Institute Conference It's the Poets Who Shape History

In his keynote address to the semi-annual conference of the Schiller Institute and International Caucus of Labor Committees, held in Virginia on Presidents' Day weekend, Lyndon H. LaRouche, Jr., focussed on confronting his listeners with the reality of the world economic depression, and the fact that popular culture today calls for denying that such a depression exists. Yet, he pointed out, the depths of the collapse have already begun to provoke a mass strike process—in Europe, Ibero-America, Asia—which holds the hope of stopping the rush into worldwide devolution, as long as the right ideas dominate.

LaRouche challenged the mentality of looking for a scapegoat. Surely, there are evil people and institutions, he said, but there has been an overall paradigm shift away from the outlook of a nation-state committed to scientific and industrial progress, which has created a con-

sumer culture of immorality. Thus, when people look around for the causes of the problems they face, they usually overlook the most fundamental one: the flaws in thinking within themselves. Those flaws are caused by the lack of an orientation to, and education based upon, the nature of every individual, man and woman, as being a creative mind made in the image of God.

The first day of the conference concluded with an evening concert in which violinist Seth Taylor and pianist Monica Ripamonte performed Schumann, Schubert, and Brahms.

Renaissance vs. Enlightenment

Helga Zepp LaRouche's presentation elaborated on the cultural crisis, to which her husband had referred, from the standpoint that the ideas of the Renaissance must finally defeat those of

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Senate Told: ‘Enough Is Enough!’ Commission Calls for D.O.J. Corruption Hearings

On April 21, the independent blue-ribbon panel headed by former U.S. Rep. James Mann (D-S.C.) and prominent Alabama attorney J.L. Chestnut, issued a call urging that Congressional investigative hearings into the U.S. Department of Justice include the crucial evidence heard by the Mann-Chestnut Commission in 1995.

Referring to recent exposés of misconduct by the D.O.J. and F.B.I., including evidence-tampering at the F.B.I. crime lab, Federal Judge Falcon Hawkins’ ruling in the South Carolina Lost Trust case, and the Alcee Hastings case, the Commission stated, “Given recent events, it appears inevitable that Congress will be forced to exercise its oversight responsibility, placing investigative hearings high on the agenda of both the Senate and the House Judiciary Committees. If such hearings are to facilitate the long-overdue clean-out of one of the most corrupt sections of our government’s permanent bureaucracy, it is imperative



Mann-Chestnut Independent Commission hears testimony, Aug. 31, 1995. Attorney J.L. Chestnut and U.S. Congressman James Mann, co-chairmen, are seated third and fifth from right.

that the full evidence presented to the 1995 Mann-Chestnut Commission, particularly a full investigation of the judicial railroad of LaRouche and his associates—a case that former Attorney General Ramsey Clark called a

case which, viewed in context, ‘represented a broader range of deliberate cunning and systematic misconduct, over a longer period of time, utilizing the power of the Federal government, than any other prosecution by the U.S.

‘The World Needs LaRouche’s Exoneration’

On April 28, Laith Shubeilat, Jordanian parliamentarian (1984-93) and President of the Jordanian Engineers Association, addressed a seminar of the FDR-PAC in Washington, D.C., on behalf of the urgent necessity of exonerating Lyndon LaRouche. Also addressing the meeting were Dr. Abdul Alim Muhammad, national spokesman for Nation of Islam leader Minister Louis Farrakhan; Dr. Sabah Karam, Director of Islamic Schools of North America; and Bruce Director, Trustee of the Constitutional Defense Fund.

Twice a political prisoner himself, Shubeilat explained why he took up LaRouche’s case, despite being told repeatedly, “Don’t listen to those people.” After being contacted in 1990, during the buildup to the Gulf War, when the LaRouche movement was virtually a

lone voice in the West opposing that war, Shubeilat began to realize that “those people are being targeted by the same agencies who are targeting me.”

Shubeilat is best known for his philosophical commitment to an ecumenical alliance among the “Abrahamic” faiths—Judaism, Christianity, and Islam—based on the common principle that all men are created in the image of God. He is also correctly known as the leading opponent in Jordan of the usurious policies of the I.M.F. and World Bank.

Although Shubeilat knew the risks of activities of conscience in his own nation of Jordan, a monarchy, he was shocked to learn, in reading the book *Railroad* about the LaRouche frameup and show-trial, that such things could occur in the “American democracy.”

This led him to investigate La-

Rouche’s ideas in depth. “I found an ‘encyclopedic man,’ ” he reported. He described a meeting with Lyndon and Helga LaRouche, where LaRouche spoke about the importance of music in educating young people. “I was very impressed” by the depth of his knowledge, said Shubeilat. “I was also impressed with his courage”; in his decision to “go against the mainstream . . . I saw a bit of myself,” he said. “I don’t want to be against the mainstream, but if the mainstream is wrong, I must be against it.”

So, Shubeilat decided to fight for LaRouche’s freedom. “Why should I take up LaRouche’s case?” he asked rhetorically. “Why should I meddle? Because if I don’t meddle, I will lose my humanity, my self-respect.”

Shubeilat recalled the courage of Michael Billington, the LaRouche associ-

government, in my time, or to my knowledge’—be heard.”

The Mann-Chestnut Commission convened a panel of legal experts on Aug. 31-Sept. 1, 1995 to conduct a series of extraordinary independent hearings to investigate allegations of gross misconduct by the Department of Justice. The hearings focussed on cases where there was evidence of politically motivated targeting of groups and individuals by a concert of private organizations outside the U.S. government, working in tandem with corrupt officials inside Federal governmental law enforcement agencies.

Commission members include: James R. Mann (D-S.C.), U.S. House of Representatives (retired); JL Chestnut, attorney, Selma, Alabama and author, *Black in Selma*; Sen. Robert Ford, South Carolina State Senate; Sen. Maggie Wallace Glover, South Carolina State Senate; Rep. William Clark, Alabama House of Representatives; Rep. John Hilliard, Alabama House of Representatives; Rep. Milton Toby Fitch, North Carolina General Assembly; Rep. Howard Hunter, North Carolina General Assembly; Rep. Ulysses Jones, Jr., Tennessee General Assembly; and

Msgr. Elias El Hayek, Chor Bishop of the Maronite Church and Professor of Law.

‘Enough Is Enough!’

On April 30, the Senate Judiciary Committee held hearings on the Department of Justice corruption. Concerned that these hearings not be a coverup, eighteen prominent current and former state elected officials drafted a statement, which was entered into the official records. The statement, which reported on the work and conclusions of the Mann-Chestnut Commission, concluded:

“Some of us have been victims of this corruption. All of us have been witnesses to it. Now we say, enough is enough! A clean-out is long overdue. And, it is our position, that if the relevant committees of the Congress refuse to hear this crucial evidence once again, we will see to it, that the stench of political corruption and cover-up follows them to the end of what will be very short political careers.”

In addition to a number of members of the Mann-Chestnut Commission, the following state legislators signed the statement: (former) Sen. Theo W.

Mitchell, South Carolina; Rep. Andrew M. Hayden, Alabama; Rep. Tommie Houston, Alabama; Rep. Thomas E. Jackson, Alabama; Rep. Bryant Melton, Jr., Alabama; Rep. James L. Thomas, Alabama; Rep. Ben McGee, Arkansas; Rep. Ben Swan, Massachusetts; Sen. William L. Clay, Jr., Missouri; Rep. Charles Quincy Troupe, Missouri; Rep. Harold James, Pennsylvania; Sen. John Ford, Tennessee; and (former) Rep. Ira Murphy, Tennessee.

Release of LaRouche Associates

On March 31, in the month leading up to the Congressional hearings, petitions for a writ of *habeas corpus* were filed on behalf of Anita Gallagher, Paul Gallagher, and Laurence Hecht, three of five LaRouche associates who, despite their innocence, are serving long sentences in Virginia prisons. Don Phau, another LaRouche associate, had filed papers in his case the prior week. Michael Billington, the LaRouche associate serving the longest sentence, 77 years, is currently challenging his conviction in the U.S. Court of Appeals for the Fourth Circuit.



EIRNS/Stuart Lewis

Jordanian Parliamentarian Laith Shubeilat

ate who is serving a barbaric 77-year sentence in a Virginia state prison. “I cannot forget Mike Billington—when the day came that he should go to jail, first he went to a demonstration, calling for my freedom; facing his darkest day, going to jail for 77 years. I cannot forget that.”

St. John Passion Performed in Germany

On Good Friday, March 28, the Schiller Institute chorus and orchestra returned to the Untere Kirche in Florsheim-Dalsheim, Germany, to perform portions of J.S. Bach’s oratorio, the *St. John Passion*. The seventy performers, mostly amateurs, came from many nations—Germany, France, Italy, Denmark, and Poland—and were joined by students from the church conservatory in Bratislava, Slovakia. The work was performed at the scientific tuning of C=256, and was conducted by Anno Hellenbroich.



EIRNS/Christopher Lewis

Former President of Uganda Godfrey Binaisa addresses the conference.



EIRNS/Philip Ulanowsky

uct of Enlightenment degeneracy, and must be scrapped.

- Bruce Director led off with a presentation on the fraudulent way mathematics as a whole is conceived; he used the work of Carl F. Gauss as the antidote.

- Anno Hellenbroich, a leader of the Schiller Institute in Germany, spoke about the great conductor Wilhelm Furtwängler's fight for the principle of "performing between the notes."

- Gail Billington exposed the "fraud of the economic miracle of the Asia Tigers," showing how the growth of prostitution and gambling is being labelled "economic growth."

- Rogelio Maduro destroyed the methodology of the "global warming" pseudo-scientists.

- Hunter Cobb demonstrated the fraud of the inverse square law, through demonstrations of



EIRNS/Stuart Lewis

several electromagnetic experiments.

- Lastly, Webster Tarpley demonstrated the direct role of the Venetians in destroying the culture of the English Renaissance of William Shakespeare.



EIRNS/Philip Ulanowsky

Left: Ukrainian Parliamentarian Natalya Vitrenko (left) with translator Rachel Douglas.

Right: Russian economist Dr. Tatyana Koryagina speaks at FDR-PAC forum on Russia and Eastern Europe on April 28, where she was joined by Ukrainian Parliamentarians Vitrenko and Volodymyr Marchenko.

that it is the poets who shape history, by contrasting Voltaire's cynical attack on Joan of Arc with Friedrich Schiller's poem entitled "The Maid of Orleans," in which spirit she concluded: "Let us therefore make a solemn commitment that we will create a beautiful world with people with beautiful souls."

The third panel provided six short proofs of principle, that the dominant academic method used today in education, and in society's leading institutions, is a prod-

Hunter Cobb demonstrates electromagnetic experiments.

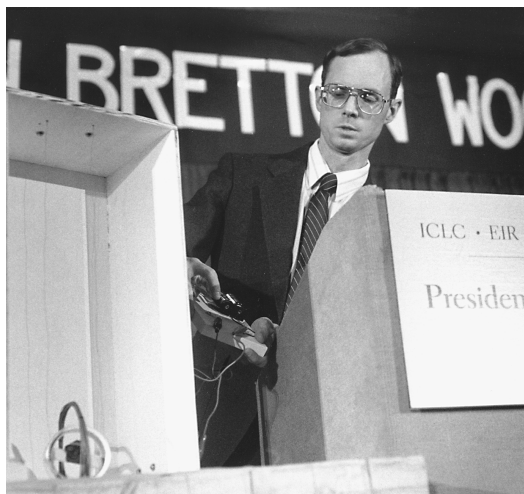
Seth Taylor, violin, and Monica Ripomonti, piano, perform works of Schumann, Brahms, and Schubert.

Conference

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the Enlightenment, if mankind is to survive. The battle of such Enlightenment figures as Voltaire, Euler, and Maupertuis against the Platonic genius of Gottfried Wilhelm Leibniz, was a major feature of her presentation.

Zepp LaRouche highlighted the fact



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EIRNS/Charles Hughes

Helga Zepp LaRouche addresses Land-Bridge seminar.

‘Silk Road Lady’ in New York

Helga Zepp LaRouche held a series of seminars and briefings in New York City on Feb. 27-28, entitled “The Eurasian Land-Bridge: The ‘New Silk Road’—locomotive for worldwide economic development.” Representatives from twenty-six nations, as well as from the international press, attended a Feb. 27 afternoon briefing. The next day, eleven Chinese journalists attended an “insiders’ briefing” in Lower Manhattan—which was then reported, within 48 hours, in both mainland China and Taiwan, through television and radio, and in every major Chinese-language press outlet in the United States.

The headline of the Hong Kong-based *Sing Tao* newspaper read, “Helga LaRouche Releases a new Special Report Titled: Construct Eurasian Land-Bridge To Invigorate The World.” *The United Journal*, circulated throughout the U.S. and Canada, reported: “Mrs. Zepp LaRouche said that at present the superficial prosperity of the Western economies is, in fact, simply ‘bubble economies.’ The key character of this kind of economy is that, over 90% of capital investments flow into purely speculative financial instruments; that this form of economy is reaching the point of serious crisis and collapse, which

one day in the future, when it collapses, will cause a terrible crisis for the world.”

The Schiller Institute’s recent re-publication of the groundbreaking study of Chinese physical economy written by Dr. Sun Yat-sen, *The Vital Problem of China*, was cited by the *World Journal*. “Helga Zepp LaRouche, at yesterday afternoon’s press conference, stated that today’s China cannot get rid of the present crisis, without reading Sun Yat-sen’s ‘The Vital Problem of China’ . . . [T]his book ought to be on every Chinese family’s bookshelf . . . Lady LaRouche . . . has for many years . . . devoted herself to push the countries in Europe and Asia to build the Eurasian Land-Bridge. . . . Sun Yat-sen . . . envisaged the Land-Bridge as the key construction item.”

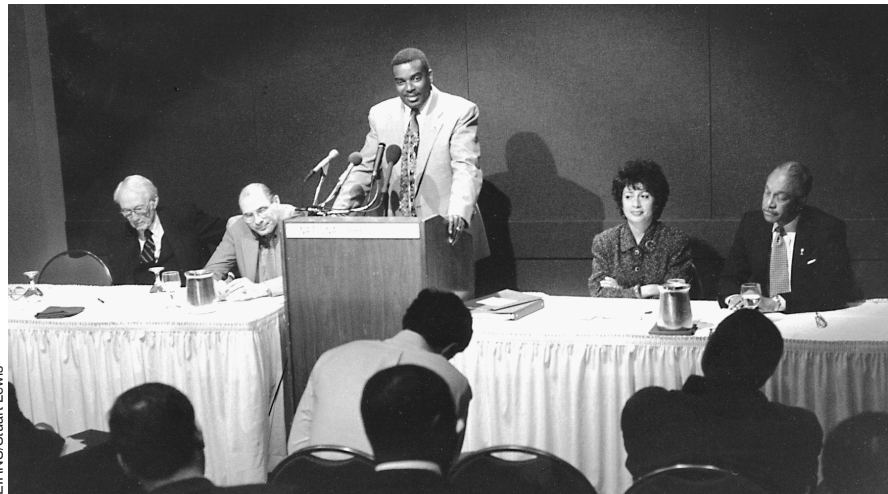
The *International Daily News* was particularly optimistic: “[Zepp LaRouche] believes that the phenomena of the world economy nowadays are totally fake, that is, the phenomena of the bubble economy. . . . She proposed, that the two biggest economic powers in the world, China and the United States, should take the leadership and cooperate with other countries to build up a railway that circles the world, which looks like a great bridge connecting all parts of the world.”

Sudan Briefing Book To Counter Media Lies

“What Do You Actually Know About Sudan?” is the title of a comprehensive briefing book released by the Schiller Institute at a well-attended press conference in the nation’s capital March 20. The briefing book was presented by Schiller Institute spokesman Lawrence Freeman, who has led two fact-finding delegations to Sudan, one in September 1996, and a second in February of this year.

In addition to Freeman, speakers at the press conference were Rep. Theo Mitchell, former South Carolina State Senator, and María Elena Milton, former Democratic candidate for Congress from Arizona’s 4th C.D., both of whom

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EIRNS/Stuart Lewis

Delegation reports Sudan fact-finding. Podium: Rep. Thomas Jackson. Seated (left to right): Rep. James Mann, Lawrence Freeman, María Elena Milton, Rep. Theo Mitchell.

Sudan Briefing Book

Continued from page 76

participated in the February delegation, and two members of the September delegation, James Mann, former Congressman from South Carolina, and Alabama State Rep. Thomas E. Jackson.

Freeman pointed out that the lies against Sudan in the media about slavery, harboring of terrorists, and persecution of Christians and other non-Muslim populations, have been spread by an organization called Christian Solidarity International (C.S.I.), which is directed by the Deputy Speaker of the British House of Lords, Baroness Caroline Cox.

Senator Theo Mitchell charged that Sudan was being “put to the sword” by powerful interests. The Schiller delegation had found “no institutionalized, government-backed slavery”; in fact, he said, slavery in Sudan is a capital offense. Rather, he asserted, Sudan has been victimized by an invasion from Ethiopia and Eritrea, which began on Jan. 12.

Slavery Story Wreaked Havoc

Former Congressman James Mann excoriated the two *Baltimore Sun* reporters whose slavery story “wreaked havoc in the world, in Sudan, in the Congressional Black Caucus, resulting in the approval of sanctions by the United States and the United Nations.”

Representative Thomas Jackson of Alabama admitted that, before his visit to Sudan last September, he had known nothing about the country except what he read in the papers. “My fore-parents had to endure the atrocity of slavery. . . . I was troubled.” But his experience in Sudan convinced him that charges of slavery there were fraudulent.

LaRouche Democrat María Elena Milton showed how those charges are used to “whip up” African-Americans, while American conservatives are fed a line about Islamic persecution.

“How do you mobilize American conservatives?” she asked. “Whip them up with charges of Islamic oppression of Christians—fed through C.S.I., and the Christian Coalition. . . . Pat Robertson is raising a lot of money using this issue.”



EIRNS/Andrew Spannaus

‘Overcoming Financial Collapse’

On April 10, Lyndon LaRouche addressed a packed conference in Rome, Italy, on “The way out of the disintegration of the international financial markets.” LaRouche told the one hundred guests representing political, industrial, diplomatic, and clerical circles from Rome and elsewhere in Italy, “It is beyond the power and will of man to save this monetary and financial system,” and said his job is to organize the governments of the world, led by President Bill Clinton, to convene a New Bretton Woods conference.

Joining LaRouche on the podium was Italian Parliamentarian Publio Fiori, the former Transportation Minister in the government of Silvio Berlusconi, and currently national coordinator of the National Alliance Party. Fiori endorsed LaRouche’s New Bretton Woods proposal, and called for the establishment in Italy of a National Bank for economic development, which would break the control of the specula-

tive financial markets, and launch the large-scale infrastructure and industrial projects which are needed to save the physical economy from ruin.

Helga Zepp LaRouche presented the economic perspective of the Eurasian Land-Bridge, or “new Silk Road.”

Engineer Fortunato Covelli, a representative of the company established to build the bridge over the Strait of Messina, which would connect Sicily to Italy’s mainland, briefly addressed the conference, as did Alberto Servidio, former head of the Cassa del Mezzogiorno, the state financial institute for the development of Southern Italy, and economics reporter Giorgio Vitangeli. In addition, messages of support for the conference were received from Flaminio Piccoli, former president of the Christian Democracy Party; Roberto Formigoni, parliamentarian and currently president of the Lombardy Region; and Siro Lombardini, former Minister of State Economic Participation.



EIRNS/Andrew Spannaus

Above: (left to right) Translator, Lyndon LaRouche, moderator Paolo Raimondi, and Parliamentarian Publio Fiori. **Below:** Conference guests.



Left: Helga Zepp LaRouche.
Below: Conference participants.

LaRouche said. The nation-state is being destroyed, phony food shortages are being engineered, parts of Africa are being turned into a *terra incognita*. This is a warning sign of what will happen to the entire planet, if the policy direction is not changed. The

Peace Through Development in Africa's Great Lakes Region

Walluf, a small town on the Rhine River in Germany, was host to a seminar on April 26-27 that brought together leaders of East Africa in a strategy session organized by the Schiller Institute, the Forum for Peace and Democracy, and *Executive Intelligence Review* magazine.

Leading speakers at the event were Lyndon LaRouche and his wife, Helga Zepp LaRouche; Godfrey Binaisa, former Ugandan President and founder of the African Civil Rights Movement; William Munyembabaz, secretary general of the National Council for the Defense of Democracy of Burundi; François Nzabahimana, president of the Rally for the Return of Refugees and Democracy to Rwanda (RDR); and Nkiko Nsengimana of Rwanda Pour Tous (Rwanda For All). Also attending were leading opposition activists from Uganda and Zaire.

For the Africans assembled at the seminar, the tragedy unfolding in Central Africa has robbed them of their nations and their families. The question posed was how to stop the current genocide policy of the British Empire in Africa, and bring about its true independence.

The global strategic perspective was put forward by Lyndon LaRouche, who asked the participants to “climb the mountaintop” and see their situation in Africa globally, and from the standpoint of the last five hundred years of world history.

“We are heading into a Dark Age,”



EIRNS/Christopher Lewis

hope of reversing this process lies in the Eurasian Land-Bridge, which would extend into Africa.

LaRouche asked, “Where will we find the *passion*” to bring about these changes? The horrors now going on in Africa can be a key part in compelling world leaders to solve the crisis. What is happening in Africa must arouse the conscience of nations. We must use our very own weakness, as a force to move the powers. “We say, if you allow this to happen in Africa, you have lost the moral fitness to survive. Mankind is often pushed by calamities, to act. Otherwise the universe acts, to purge itself of the disease that civilization has become. This is the time to act. We must see what is required from the mountaintop, and use our knowledge of the very horror, as a *lever* to force people to dis-

cover the passion to do what is necessary, to save all humanity.”

Former Ugandan President Godfrey Binaisa appealed to Africa to resist the “new Hitlers” of the continent. What must be revived, said Binaisa, who was a leading figure in the Ugandan independence movement, is Pope Paul VI’s 1968 concept of “peace through development.”

The concept of peace through development was also taken up by the secretary general of the Burundi National Council for the Defense of Democracy (CNDD), who traced his organization’s history from the founding of the Frodebu party for democracy in Burundi. Peace through development, he said, is

the only strategy for Africa. He debunked the ethnic myth of Tutsi versus Hutu, describing the collaboration of both during the short reign of democracy in the country in the period of the Frodebu government (June-October 1993).

François Nzabahimana, president of the RDR, gave detailed evidence on how the United Nations High Commission on Refugees was complicit in the genocide, and documented how eastern Zaire was invaded, beginning in October 1996, by the combined militaries of Uganda, Rwanda, and Burundi.

At its end, the seminar’s participants designating an organizing committee, and affirmed their commitment to the concept that Africa’s true development is the only pathway to peace, and to broadening this new seed-crystal of African leadership.

Behind the Notes

Student-Teacher Dialogues from a Master Class

In May 1996, this writer enjoyed the opportunity of attending a series of master classes on vocal music featuring master musicians William Warfield, George Shirley, Sylvia Olden Lee (who doubled as an accompanist), and Raymond Jackson (accompanist), organized by the Schiller Institute under the title, “Marian Anderson Annual Tribute—The Poetic Principle in Music.” The two-day workshop opened with the artists and a select number of student participants performing a concert of Classical German *lieder*, African-American Spirituals, and poems by the turn-of-the-century African-American poet Paul Lawrence Dunbar, recited by Maestro Warfield.

The intention of the master-class work, was to cause both the student musicians and audience to become conscious of how motivic thorough-composition’s (*Motivführung*) poetic principle (i.e., generation of metaphors) is causally related to the production of art in composition and in performance. The context was the work by Lyndon H. LaRouche, Jr., on the thematic element of the forthcoming Volume II of the Schiller Institute’s “Music Manual” (*A Manual on the Rudiments of Tuning and Registration*)—namely, the motivic method of composition, as this was expressed in the series of revolutionary discoveries effected by Haydn, Mozart, and Beethoven.

The range of singing experience among the twenty-one participants varied, including less experienced teenagers and adults, who derived their singing knowledge from work as soloists within the choruses of social or religious institutions, and adults with

Dr. William Warfield coaches student Jennifer Kreingold.

many years of vocal coaching, who wished to further their efforts to become professional soloists.

The accompaniment was performed on a piano pitched to the scientific tuning of middle C=256 Hz, permitting each vocalist the opportunity to execute the natural voice-register shifts of his/her species of voice according to the composer’s musical idea, which is a prerequisite of their coherent rendering.

As each student’s presentation and teacher’s coaching-response proceeded, my “mind’s eye” reflected upon Lyndon LaRouche’s elaboration of the hypotheses underlying the necessary origins and development of *Motivführung*: man’s revolutionary leaps in his capacity to transform the universe.

LaRouche has shown that “the principle of *Motivführung* goes directly to the most fundamental principles of the human mind,” whose creative powers of memory are the basis for the art of musical performance and composition.

My thoughts scanned their exchanges, to see whether or not the student rendition, and teacher critique, employed a method shaped by the char-



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Left to right: Dr. William Warfield, Sylvia Olden Lee, and Prof. George Shirley, at a 1994 organizing conference for a National Conservatory of Music, sponsored by the Schiller Institute.

acteristic features of musical memory identified by LaRouche: (1) Did the student's presentation demonstrate memory of the composition as an indivisible, continuing unit of conception, from the first to the last tone of its performance? (2) Were the series of transitions presented as an evolving process of the emerging indivisible conception, each one carefully shaped as, itself, an indivisible unit-idea? (3) Was each transition linked to its predecessor, in such a manner as to develop both the idea of the transition, and that under the governance of the unit-idea? I.e., did the performance achieve musical coherence?

What follows is a sampling of the teacher-student dialogues which occurred after each presentation.

* * *

The singer, a sixteen-year-old male ("contra-tenor"), has just sung the aria, "O, Thou that tellest good tidings of Zion," from Handel's *Messiah*," observing a pro-vibrato, *bel-canto* mezzosoprano registrational quality of voice. The young singer intoned each individual note with a clean, beautiful shape, but evinced difficulty developing the phrasing (of the series of individual transitions) in an equivalent manner.

Although he lacked the informed musical insight necessary to unfold the aria as a developing idea, the youth's unpretentious rendition nevertheless

conveyed his internal cathexis to, and respect for, the aria's sacred text, the strain of which issued forth musically.

* * *

Professor Shirley: Now, before you begin to sing, prepare yourself spiritually to do what you need to do. So that, when the music starts, you're not caught unprepared. So, you get yourself ready. She's [*accompanist Sylvia Olden Lee*] going to give you an introduction [*there are sixteen measures of introduction before the voice enters*]. . . . Don't look at her and say, "I'm ready"—because, that means you're not ready. If you get yourself ready, internally, and then you pull yourself out of being ready to say, "let's go," that has nothing to do with your reality as the person who's going to tell us whatever message it is, you're going to tell us. So, raise your head; get in character, and she will start. [*Introduction begins, the singer*

Dr. William Warfield, baritone, is past president of the National Association of Negro Musicians (1985-1990) and one of the world's leading experts on Spirituals and *lieder*.

George Shirley, tenor, debuted at the New York Metropolitan Opera in 1961, singing there for over two decades. He now teaches at the University of Michigan in Ann Arbor.

enters, and sings just the opening measures]

Professor Shirley: Okay. Fine. Now, what was going on in your mind, when she was playing the introduction? What were you thinking?

Student: [*After a momentary pause*] Doing the piece . . . the way it should be done.

Professor Shirley: "The way it should be done." [*chuckles, takes a big breath*] What does that mean?

Student: That means doing it with the right . . . [*long pause, then whispers*] Oh, gosh! [*gives a chuckle, indicating he's baffled*]

Professor Shirley: All right. Let me ask you this: When you stand to say these things, to whomever it is you're saying it to; *why* are you saying it? Why are you saying, "O, Thou that tellest good tidings to Zion. Rejoice?" Why are you saying that?

Student: I'm saying that, so . . . [*starts again*] I'm presenting it. Presenting it to . . . [*pause*]

Professor Shirley: To whom?

Student: My audience.

Professor Shirley: Well, you could be presenting it to an audience. But, where is this from? What is the text from?

Student: Uhhmm. Isaiah, in the Bible?

Professor Shirley: And, who is saying these words?

Student: [*long pause*] Uh . . .

Professor Shirley: Okay. You'll have to do a little research. All right? So that you know what this text is about, why it's being delivered. But, you can make success of this, and be comfortable with it, without knowing that—if you believe the words that you are given to speak: "O, Thou that—" . . . what is the text?

Student: [*recites*]

Professor Shirley: Okay. So you're

Sylvia Olden Lee, Metropolitan Opera Vocal Coach from 1954 to 1956, has been Professor of Vocal Interpretation at the Curtis Institute of Music in Philadelphia for more than twenty years.

Dr. Raymond Jackson is currently Professor of Music and Coordinator of Applied Music Studies, at Howard University in Washington, D.C.

announcing, what?

Student: To behold your God. To the cities of Judah.

Professor Shirely: You're announcing? [*long silence*] Is this the announcement of the birth?

Student: Ummhumm.

Professor Shirely: Of?

Student: Jesus Christ.

Professor Shirely: Okay. So, you can do that. To everyone here. But, you have to believe, what it is that you're saying. And, you have to know why you're saying it. [*presents a hypothetical example of the reason to be saying such, in a new voice:*] "I'm saying this because, I want each of you to know this good news, this Gospel. And, I'm saying to each and everyone of you: 'Behold! Your God is born this day. Go! Announce this everywhere.'" [*ends example*]

So, you can make it real for yourself. But, you must believe what you're saying. Now, throughout this whole first part, the introduction: I will suggest to you, that it's more profitable for you, rather than saying, "I've got to sing this song right. I've got to make sure all the notes are in place. I've got to, etc." [*begins to recite the first words of the aria, in a blurring manner. Student and audience laugh*] Instead, think thoughts that are in character with what you have to say. Focus your thoughts, in character, thinking in character; so that, when you open your mouth to speak, you're just continuing what you've already established for yourself. Thinking is the first thing, folks. Thinking.

* * *

Professor Shirley advises those present, that fixating upon technical aspects of the voice, etc., is not in character with delivering the message of the musical idea. The professor informs the singer that, generally, to focus the mind of his students, he has them take the time to compose a little speech as the song's speaker, and commit it to memory. During the piano introduction, the student would recite, to himself, the text of such a speech. In this way, the student "would already be speaking," and "thinking in character," prior to the aria's vocal entrance.

Following this discussion, the stu-

dent demonstrated remarkable improvement, in every way. First, in place of the musical introduction, he delivered aloud his thoughts, in the form of a brief speech, speaking as the character in the aria. And immediately, as a continuation of the speech, he sang the aria's opening measures.

Following this exercise, the sixteen-measure piano accompaniment was added, with the student giving the speech, silently in his mind, and immediately singing aloud when the aria's vocal entrance arrived. His entrance was



Professor Shirley coaches Samayya Ali, with Miss Lee at the piano.

accomplished as a natural, relaxed continuation of the piano accompaniment.

He performed the entire aria, again; but, now, singing from the perspective of this newly formed insight into the aria's meaning. The role of individual phrases found definition. Consciously thinking of what idea should ultimately be communicated, a concept of the interplay between that notion and how the meaning of the phrases should unfold, overall, to shape the entirety, this student's "final" rendition afforded the listener a momentary glimpse of the sublime joy he himself experiences when singing the aria.

Before proceeding to a dialogue of another type, we should note Professor Shirley's reminder, that singing demands *thinking!* Thinking being a subjective, rather than objective, activity of the human mind.

Unfortunately, not every student

demonstrated the presence of mind, "on the spot," to relinquish the flawed idea from which their initial performance issued. A failure to rethink the complete idea governing the phrasal changes, offered from the musical insight of the artists guiding him, would leave the student articulating *the changes* only; singing them, but within the old geometry of his or her initial, ill-conceived notion. This is equivalent to the Aristotelean, who tries to reach the circle, by infinitely increasing the number of the polygon's sides. The action creating the circle's existence sub-

sumes, and is superior to, that from which the polygon is derived; an entirely new conception has to be born in the mind of the singer, which will lawfully order the new phrasing. The Many (phrases) require a subsuming One (principle of change), through which the improved performance may unfold as a coherent, new conception.

Let's hear a dialogue of this less successful type.

* * *

At the request of one of the teachers, the singer, a young woman, is asked, before beginning, to present the operatic setting for the recitative-aria, "Mi tradi quell'alma ingrata," sung by the character Donna Elvira, in Mozart's opera *Don Giovanni*.

Student: She's very angry, at this point in the opera. And, Don Giovanni is full of schemes; this is just one of the

schemes that he was involved in with Leporello, the scene before. It's finally come to her knowledge that he has to perish, because his way can not go on. He's too bad, and evil. But, she [Elvira] loves him. So, she's angry and . . . also torn between the love that she has for him, and the duty to save other women, and the world [from his deceits].

She the sings the recitative, followed by its aria.

The singer's proficiency in the Italian language, and singing technique, reveal a more-than-passing knowledge of how

no's lower vocal register, were muddled, while those emphasizing the "switch" from second to third register, were, often, produced with the same quality of voice. She rushed to bring the entire presentation to conclusion; a disappointment, given such a lovely, textured voice, her lucid enunciation of the Italian text, and her capacity to sing unhindered in the higher register of the voice.

Let's return to the dialogue.

* * *

Sylvia Olden Lee: I'd like to congratu-



EIFNS/Stuart Lewis

to handle her beautiful vocal "instrument." Yet, in the recitative, we do not witness Donna Elvira's spirited awakening to the fact that Giovanni, whom she faithfully loves, is an evil creature, doomed to destruction; nor do we hear, in the aria which follows, the untiring strain of her reflective anguish.

Mozart scored the aria, such that it is sung mainly at the top of the soprano's middle voice register, punctuated by continuous, brisk phrases, that move in-and-out of the (third) register above; this is colored by occasional drops into the soprano's lower (chest) register; and, the entirety is to be performed *allegretto*. This contrasts sharply with the much spirited quality of the recitative, which pivots around the soprano's registrational "breaking-point," in the region of F-natural and F-sharp, rarely going above or below the F-natural.

None of this was observed by the singer. Phrases, to be sung in the sopra-

late her on her instrument. She's a good musician. About the aria, explain to us, the first thing you said, when you were telling us about Elvira?

Student: She's very angry.

Miss Lee: What?

Student: She's very angry, she's . . .

Miss Lee: Then, my hope is— [to audience] Did any of you . . . get that anguish? Not that she had to pull her own hair, or beat her chest, or spit, or froth. Did you get angry? [audience responds in the negative] But the face [of the singer] is a beautiful face; I never saw any of it, . . . but you see that in your audience's [faces] . . . I could not get angry. . . . When you're seething and boiling [in this aria], this is the only thing I live for, . . . is to see that kind of devotion to truth. I can not get angry [from this presentation]. [An exchange about Miss Lee's admonishing Kathleen Battle about the deadness of her "Jauzet . . ." ensues.]

Student: [finally beginning to display a bit

of perturbation] So: no anger. All right! I get it!

Professor Shirley: I think, I would like to hear the recitative a little less . . . rushed. There were some places where, I think there's some expansion wanted. And you didn't allow it. [He asks her to sing the recitative again, stopping her, a few measures into it] That's a case in point. Whenever you have chords, under a rest, it's a good idea to give them their space; because, they reflect something that has either just happened in you or is going to happen. If you rush them, then you don't give them [the words indicating the character's state of mind] a chance to sound, in *secco recitative*. . . . [He demonstrates the phrase in Italian, without the piano punctuation] There's another idea that comes to your mind. . . . That's those "tah dum!" chords.

Miss Lee: [to Professor Shirley] Did you agree about that [non-expressive face]?

Professor Shirley: Sure.

Miss Lee: That face is such a Madonna face. . . . I only mean that in the best—that it does not seem to me to have any anger, or meanness in it at all. [to the student] "Over-do" what you think, and then, cut off some of the hamming. It's got to have a lot more steam to it. And, "sciagurato," what does that mean?

Student: "Sciagurato." . . . I know it. It's, uh, . . . "miserable one." "Miserable one," "sciagurato."

Professor Shirley: That's one meaning of it.

Student: [confidently] "Miserable."

Miss Lee: That's a nice way to say it. But, you really need to get—

Professor Shirley: Wretch!

Miss Lee: Thank you. "Traacherous."

Student: [giggling nervously] "Miserable wretch." Uh-huh.

Miss Lee: Good. Because you just sang [imitates a casual sing-song] "Sciagurato" [meaning] "You son-of-a so-and-so." [all laugh] Do you understand?

Student: [half-heartedly] Yeah.

Professor Shirley: Whenever— . . . I believe that, whenever a rhythm is written in *secco recitative*, that rhythm should be observed. We can speed up a phrase, and we can slow it down; but, I don't think we have the right to rearrange the rhythmic relationships of the notes. And where you have, "e

avvolto il sciagurato!” they’re all eighth notes, which says to me, that Mozart wanted that delivered in a major kind of way, given a different emotional thrust to what is said.

Student: [*mEEKly*] Yes.

Professor Shirley: Keep that in mind. Don’t change the rhythmic values. [*he demonstrates again in Italian*] Gives you more of that anger Miss Lee’s talking about.

Student: Yes, I agree.

Professor Shirley: [*requests that she begin the recitative again*] Also, we don’t have this music, unless we have you. This music all reflects what’s going on inside of you. And, it starts low, these little

the maestro stopping her, to explain the reason for observing various musical requirements, footprinted on the score. This is how things developed:

Student: [*lamenting, beginning to tire*] This is s-o-o-o hard.

Professor Shirley: It is difficult.

Student: It’s— . . . You’re starting angry, and it’s in the middle of the opera—

Professor Shirley: [*matter-of-fact, but assuring tone*] Tha-a-at’s right. But, you come on, and you’ve got all of this music [*indicating that something is boiling up inside of the character*]. Now. You’ve got to think about the music—something’s



Student: Kevin Southall. Instructors: Dr. Warfield, Miss Lee.

trills; and it builds, and builds! and builds—until it finally explodes in what comes out of your throat.

So, you’ve got to think about what’s going on inside of you, in your thoughts, that creates this music that we hear, before you open your mouth to speak to us.

* * *

The room becomes absolutely still, as the opening measure of the piano introduction sounds. As the introduction proceeds, Professor Shirley quietly whispers the idea, “Horrendous!” before the singer’s entrance. With the first four measures sung, the student demonstrates improvement in adhering to the composer’s rhythmic pace of the recitative.

The student sings the opening four measures at least three more times, with

got to be boiling inside of you, or we don’t have the music.

Miss Lee: What’s “In quali eccessi”?

Student: [*casual manner*] “In quali eccessi”?— “In what excess.”

Professor Shirley: [*exclaims*] “Oh, gods, what excesses!”

Student: [*again casually*] “Excesses.”— Debauched, you know.

Miss Lee: Oh! “Debauched”?

Student: [*casually, again*] The excesses that lead to debauchery.

Miss Lee: How would you say that?

Student: [*merely pronouncing*] “Eccessi.”

Miss Lee: No. I mean *you*, being angry. How would *you* say it?

Student: [*becoming a little annoyed*] How would I say “eccessi,” when I’m angry?

Miss Lee: In English!

Student: [*casually, again*] “Excess.”

Miss Lee: [*exclaims*] “In what excesses!” How would *you* say it?

Student: [*repeats, again casually*] “In what excess.”

Miss Lee: No. You wouldn’t say it like that, if you’re mad, if you’re angry. In the first place, what happens before you make a tone?

Student: [*throws up her hands in dismay*]

Miss Lee: You don’t know? As Mr. George Shirley has said, two or three times: boiling and seething.

Student: [*reluctantly*] Yeah.

Miss Lee: When you’re working yourself up like this, then, when the sentence comes out, in English: [*she demonstrates, with an air of arrogance*] “What is this?!” How would you say that?

Student: [*a bit more annoyed*] “In what excess”?

Miss Lee: No. Madder!

Student: [*long silence, then very crisply and steaming with annoyance*] “In what excess!”

Miss Lee: Now, that’s great! [*applause!*] Isn’t that something? Now, put that into the Italian. And, be madder!

* * *

However, the singing did not, nor could it, proceed; a completely new idea needed to find existence in the singer’s thoughts. One single idea needed to be called forth; expressing each of the particular new ideas, that were now introduced, as a necessary, lawful process of development of the entire performance—from the beginning of the recitative’s musical introduction, throughout both recitative and aria, to the aria’s last tone.

That weekend, twenty-one very intense, thorough individual lessons occurred; the two dialogues presented here, portray how, with any one of the singers, the idea-process characteristically unfolded. As well, the two distinct, and opposing kinds of resulting performances represented by the two singers here, speak typically for the majority of performances heard in both master classes.

The poetic insights communicated at each of the lessons, continue to this moment to impart to this writer an unforgettable air of truth.

—Cloret Richardson

Lee Soo-in, Korean Master Composer

‘Style may change rapidly, but *good is good*’

Dr. Lee Soo-in, conductor and composer of “Pyeuhl (Star),” “Kohyang ui Norae (Song of My Homeland),” and many other Lyric Songs beloved by Koreans, was born in 1939 in Korea’s southern port of Masan. He is today Principal Conductor of the Korean Broadcasting System (KBS) Children’s Choir in Seoul, and chairman of the Bluebird Children’s Songwriters Association, a group of composers who write new Classical songs for Children.

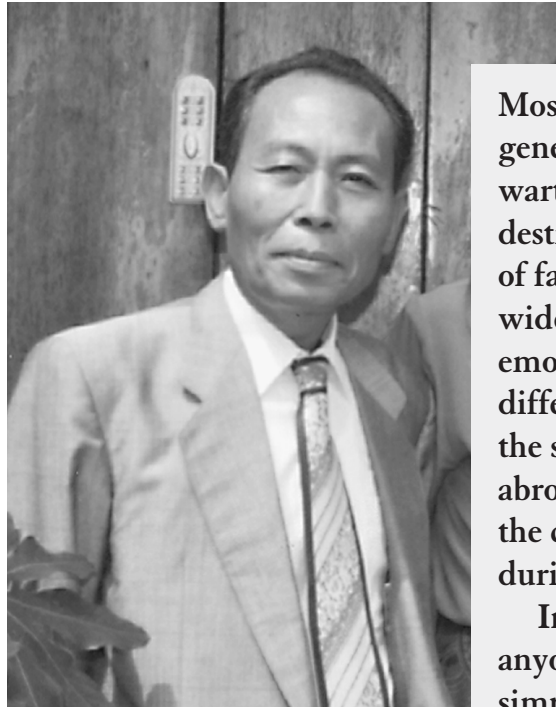
Maestro Lee was interviewed by Kathy Wolfe in Seoul on Aug. 7, 1996.

Fidelio: How did you become interested in composing?

Dr. Lee: My father was my elementary school’s principal, so I was able to play the small school organ. But, this was during the Korean War (1950-53), which ended when I was fourteen, so there were no other instruments or formal musical instruction. Then, in middle school, I was deeply interested in music, and was able to begin studies. I went to church and learned to sing hymns, and to play the church piano, so that my interest really grew. Around the last year of middle school, I wrote my first song, but after composing the melody, I was not satisfied and tore it up. I can’t even remember the name of it.

Fidelio: Later, you studied with the composer Kim Dong-jin?

Dr. Lee: Yes, Kim Dong-jin is one of our eldest living from the first generation of Korean Lyric composers. I’m from the second generation. I learned my first rigorous composition principles from Dr. Kim in college, in the late 1950’s, when he was teaching at Sorabol Arts College, now part of Jung-Ang University College of Arts in Seoul. He became a professor there shortly after the Korean War ended in 1953. I also received valuable instruction there from



Dr. Yi Hung-yeul and Dr. Kim Dae-hyun.

Kim Dong-jin was very strict; he gave the older students a hard time, for their own good. He taught a full, regular Classical music curriculum, and also made instrumental arrangements of other works, which was very useful for learning orchestration.

After college, I returned to my home town of Masan in southern Korea, near Pusan, and became a music teacher at Masan Cheil Girls High School. In 1962, I composed “Pyeuhl (Star),” my first published song [today found in every Korean Middle School music book—KW]. You see, Masan is to Korea, what Naples and the Neapolitan song are to Italy—it is by the sea, with a beautiful harbor. Whatever talent I have, is due to Masan. Masan, with the beauty and music of the sea, always gave rise to melodies within my heart. The famous

Most Koreans of my generation suffered wartime violence, the destruction by separation of family, famine, and widespread death. So my emotions are very different from those of the same generation abroad, which produced the culture of rock ‘n’ roll during the 1950’s. . . .

Intense sympathy for anyone who has suffered, simple honesty, and a certain kind of longing, are the emotions at the base of my music.

Korean composer Yun Yi-san, who was active in Germany, is also from Masan. I used to compose and sing my songs on the beach there.

Fidelio: How did World War II and the Korean War affect your music?

Dr. Lee: This was a very difficult period for the Korean people. The childhood of Koreans born during and after World War II was very different from Americans of that generation. Most Koreans of my generation suffered wartime violence, the destruction by separation of family, famine, and widespread death. So my emotions are very different from those of the same genera-

tion abroad, which produced the culture of rock 'n' roll during the 1950's.

My way of thinking is also, of course, very different from that of the current young Korean rock 'n' roll generation.

Intense sympathy for anyone who has suffered, simple honesty, and a certain kind of longing, are the emotions at the base of my music.

Fidelio: Do you think of your country when you compose?

Dr. Lee: When I am writing, I always have in mind the original emotions of the Korean people. It is very important that Korean artists not merely imitate Western music, but that they learn from it, and then express our own Korean national ideas and feelings.

Fidelio: In his book, *A Hundred Year History of Western Music in Korea*, the historian Dr. Lee You-sun says that Korean Lyric Songs are not simply copies of Western art songs, nor just native Korean songs, but rather a third phenomenon—an entirely new artistic creation.

Dr. Lee: Exactly. The theory, counterpoint, instrumentation and so on, is based on Western Classical music, but I then create a special, truly Korean music, when I compose a Korean Lyric Song. This is the creation of something completely new.

Fidelio: Your "Song of My Homeland," although written in the recent period, follows very clearly the rules of singing voice registration and the old tuning of

must admit I was not conscious of tuning as an issue when writing the song, nor had I heard about Verdi's legislation. It seems that in just following the laws of what is good for the singing voice, this was the natural result.

But I do remember reading somewhere that the great philosopher Confucius wrote: "Where the tuning pitch is raised, the State will be undermined or destroyed."

Fidelio: How did you compose "Song of My Homeland"?

Dr. Lee: In 1968, I had just left my hometown of Masan, and gone up to conduct the Children's Chorus at the Korean Broadcasting System, at the other end of Korea in Seoul, the capital.

Shortly after arriving in Seoul, I received a postcard from Masan, with a photo of its beautiful harbor, from a friend, a colleague who taught Korean literature at the same high school back home. My friend, the poet Kim Jae-hyo, had written a poem on the back of the postcard. This was "Song of My Homeland."

On seeing his poem in those circumstances, I had a sudden flash of the melody for the song in my mind, and I just wrote down the musical setting for the poem all at once.



Children's chorus, Seoul. Mozart's portrait decorates the wall.

Schubert, Mozart, Beethoven, Tchaikovsky, whether Catholic, Protestant, or Buddhist, they will all be found in Heaven, regardless of religion or nationality, because they gave Beauty to their people, in beautiful songs. Great music is forever—it is Man's closest approach to God.

C=256 upon which Mozart and Verdi insisted. If we compare your use of the voice with that in Verdi's "Celeste Aida": Both Verdi and you make an opening statement rising to the F at the top of the center register, and then, when you come to the apposition, the first major new idea or poetic change, only then do you introduce the register shift to the F-sharp or G, in the high register.

Dr. Lee: I'm very interested in what you've told me about this today, but I

Fidelio: Given today's culture of rock, drugs, and immorality, what is in your mind, that you can go on writing songs which sometimes sound like Schubert?

Dr. Lee: I have a major belief, that although society and style may change rapidly, *good is good*. Eventually this will always be clear. Schubert, Mozart, Beethoven, Tchaikovsky, whether Catholic, Protestant, or Buddhist, they will all be found in Heaven, regardless of religion or nationality, because they gave Beauty to their people, in beautiful



songs. Great music is forever—it is Man’s closest approach to God.

Fidelio: “Azaleas,” by Kim Dong-jin, speaks of longing for the beauty of Yongbyon in the North, and in “Song of My Homeland,” we see the geese flying north. Many of these songs seem to have a similar idea, of longing for Reunification.

Dr. Lee: Yes, that’s common sense. Patriotic feelings are natural to a Korean composer. However, this was not the literal purpose, or the specific target, of the melody, or of the music as a whole.

Fidelio: You are aiming at something higher than the literal meaning of the words?

Dr. Lee: Yes. This is music.

Fidelio: Were there any other great men, or major influences on your life?

Dr. Lee: Just music. Music is the light of my life. Since my student days after the war, music has been my guide. Music is everything for me.

By the way, my son is a violin student now at the Manhattan School of Music in New York. He was previously a member of the KBS Orchestra.

But, let me say that I am very anxious about the decline of culture in Korea today, which is deteriorating because of copying modern U.S. culture. Pop, rock, and rap music are, step by step, influenc-

Freedom of the arts, if taken to an extreme as it is today, is not healthy for society. The young people, who lack knowledge and experience, must be somehow governed by reason from the older generation, who should provide the youth with a full experience of Classical arts.

ing Korean youth, so that Classical music is slowly now disappearing, even here, in Korea. This is a major problem, and I’m very worried about it.

The problem is, that freedom of the arts, if taken to an extreme as it is today, is not healthy for society. The young people, who lack knowledge and experience, must be somehow governed by reason from the older generation, who should provide the youth with a full experience of Classical arts.

The situation is similar to that in the U.S. The major problem we have in both countries, is the mass media. Television, radio, and films are promoting nothing but rock and rap, and there is not enough time spent for Classical music programming. It’s a big problem.

Fidelio: Please tell us about your work with Korea’s children to solve this problem.

Dr. Lee: We can’t solve this problem today, immediately. The only way is to

work for the future, to spread the love for Classical music to young children everywhere. That way, when those children grow up, they’ll carry with them a love of great music, and also teach it to their children.

That’s why I founded the Bluebird Children’s Songwriters Association (“*Parang se Chang-jak Tongyohae*”). It’s a group of new young Korean composers, thirty or so, who are learning to compose children’s songs in the Classical style, and I advise and teach them composition. This will also encourage them to create Classical compositions more broadly. I’m from the second generation of Korean composers, and it’s my job to train this new third generation, and to create the opportunity for the spread of their new songs.

Since 1994, the Bluebird Association has been fortunate to have a fine corporate sponsor, the Kolon-Met Life Insurance Company here in Seoul. They sponsor two events for us every year. In the Spring, our composers group writes new

songs and publishes them in books of children’s music; we also make an audio cassette of the songs, to go with the book. Then we distribute the music books and cassettes to every elementary school in Korea!

In the Fall, we then hold a Children’s Song contest nation-wide. We advertise the contest, and send invitation letters to each elementary school. At the first level, the children make tapes at school and mail them to us, and our composers’ group evaluates the tapes. From these we choose about a hundred contestants, and hold a second-level contest, in which they come to Seoul for live performance. The third and final contest is held with the thirty finalists.

Next, we’re planning to establish the Kolon-Met Children’s Choir, with the help of our kind sponsor, which will bring together a group of talented children from Seoul who can sing the songs we are composing on a regular basis.

Fidelio: Thank you, Dr. Lee.

Treasures from China Relate Five-Thousand Year History

Chinese culture has been in continuous, uninterrupted existence for more than five thousand years, making it unique: the oldest civilization in the world. In these five thousand years, the rise and fall of dynasties was closely linked

to the history of China's culture, to the different philosophical currents that emerged, and to technological achievements, inventions, and discoveries—among them, for example, the glorious invention of paper. In these five thousand

years, there were conflicts between Confucianism, Legalism, Taoism, and Buddhism, and great periods of cultural renaissance, such as that of the Twelfth-century A.D. Confucian Renaissance under the Sung Dynasty. This enormous history, which would require many years of study to begin to comprehend, could be at least appreciated though the exhibit “Splendors of Imperial China: Treasures from the National Palace Museum, Taipei,” which completed a year-long U.S. tour in April at the National Gallery of Art in Washington, D.C., after appearing in New York, Chicago, and San Francisco.

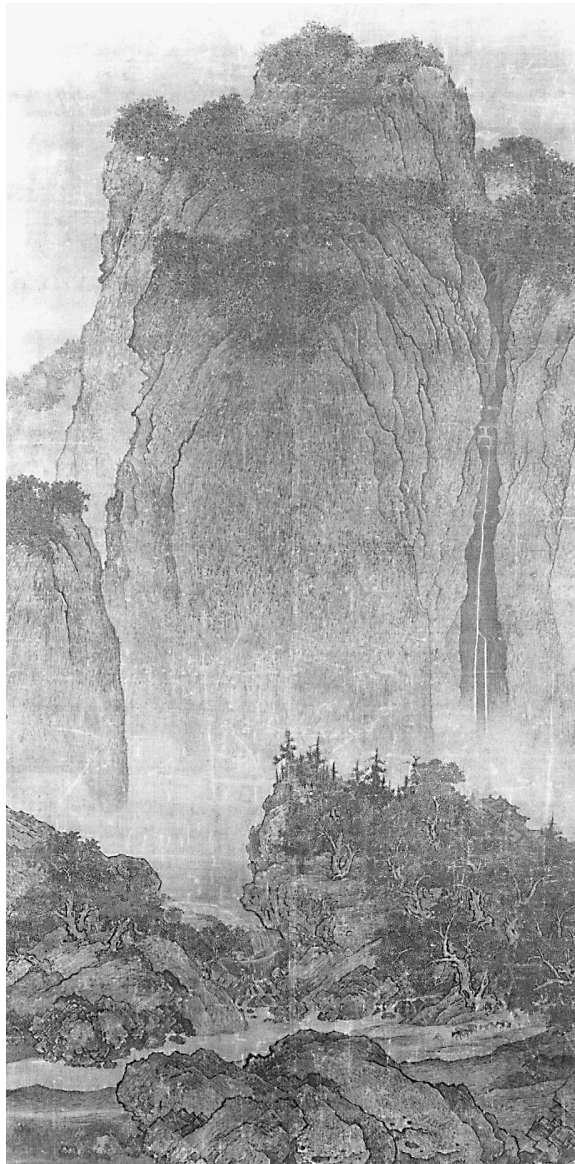
Two-thirds of the nearly 450 rare objects in the exhibition, many classified as national treasures, have never before been shown in the U.S. On only three previous occasions have masterpieces from the National Palace Museum travelled to the West: to London in 1935-1936, to the United States in 1961-1962, and again in 1991-1992, where they were included in the National Gallery's famous “Circa 1492” exhibition commemorating the dis-



Wang Meng, “Forest Chamber Grotto at Chü-ch'ü” (after 1365).

covery of the Americas.

Organized chronologically, the objects in the show presented the great artistic traditions of Chinese civilization over millennia, from the Neolithic period through the Eighteenth century A.D. Beginning with a room dedicated to the Neolithic and Bronze Ages, the exhibition progressed into the later dynasties, the T'ang (A.D. 618-907), Sung (960-1279), Yüan (1272-1368), Ming (1368-1644), and Ch'ing (1644-1911). This organization, which allowed the viewer to compare the advances (or, in some cases, declines) not only of the levels of technological achievement (e.g., in the production of porcelain and the development of the glazes, or in the pictorial techniques used to represent space), but also of world outlook, depending upon which philosophical current was favored by the ruling imperial strata. Such a change leaps out, for example, when comparing paintings from the Imperial Painting Academy created under the Sung Dynasty, with ones produced during the subsequent Yüan, after the Mongols invaded and occupied China, and the Confucian Renaissance was destroyed by the expansion of Taoist influence.



Fan K'uan (c.980-1050), “Travelling Amid Streams and Mountains.”

National Palace Museum, Taipei, Taiwan, Republic of China

National Palace Museum, Taipei, Taiwan, Republic of China

Government Promotion of the Arts

During the Sung Dynasty, painting was organized under the auspices of a centralized Imperial Painting Academy, and painters were recruited by the new government from all parts of the Empire to serve the needs of the imperial court. Over time, the traditions represented by this group of artists became what is known today as the Sung academic manner, “the culmination of centuries of achievement in mastering a naturalistic, closely descriptive and convincing portrayal of the physical world,” in the words of Maxwell K. Hearn, author of the catalogue *The Splendors of Imperial China*.

Under the Emperor Hui-tsung (1101-1125), himself an accomplished painter and calligrapher, the arts were developed to the point where they became the example for all succeeding academies. Aside from landscape painting, Hui-tsung’s academicians specialized in religious figures, historical narratives, genre painting, flowers, birds, and animals, all keenly observed and meticulously rendered.

Many of the paintings from this period remind a Western viewer of drawings and watercolors on the same subjects by later, great Western masters, such as Albrecht Dürer and Leonardo da Vinci. One of the most beautiful examples is the hanging scroll “Winter Play” [SEE front cover, this issue], attributed to Su Han-ch’en (c.1130-60’s), a preeminent painter of children at the

Southern Sung court. This painting is part of a set of hanging scrolls that probably showed children in each of the four seasons. The portrayal of a young girl and her slightly younger playmate, is a strong indication that children of both sexes were prized in the imperial world. The children are depicted at play, battling a “pretend-dragon” kitten, using, as their weapon, a banner adorned with a peacock feather.

The Imperial Painting Academy was closed during the reign of the first Yüan emperor, Khubilai Khan (1215-1294), the grandson of Genghis Khan. Pictorial representation became introspective, and realistic representation as a product of the observation of nature practically disappeared. The sense of aerial (atmospheric) perspective achieved by the Sung painters, where the “white” spaces are not empty, but full of space, was lost. Compare, for example, such examples of Sung artistry as “Travelling Amid Streams and Mountains” of Fan K’uan (c.980-1050), with the Yüan artist Wang Meng’s (c.1308-1385) “Forest Chamber Grotto at Chü-ch’ü,” where the painter “abandons all suggestion of spatial recession, and confronts the viewer with a densely textured wall of rock and water . . . creating a vision of an enclosed and sequestered environment that lies outside of the real world.”

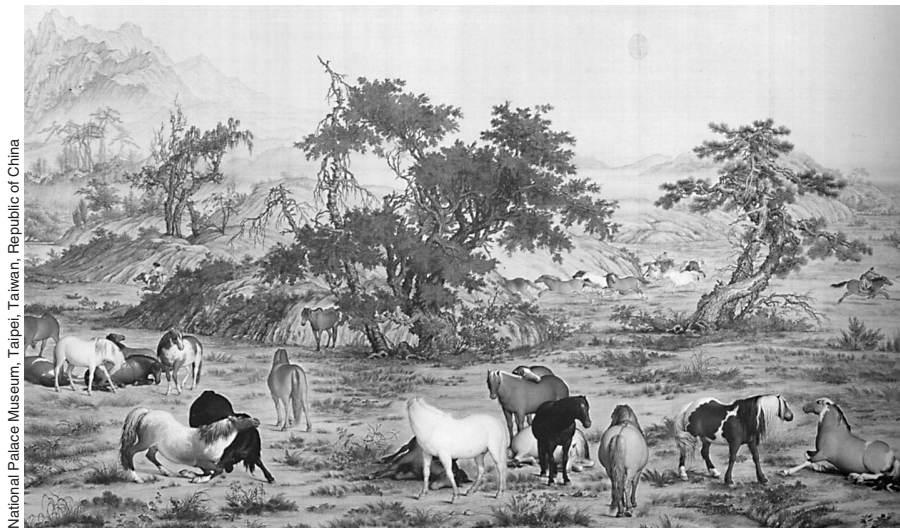
East and West Unified

A substantial portion of the treasures of the National Museum derive from the

imperial collections of the Ch’ing Dynasty (1644-1911).

It was during the Ch’ing Dynasty, established when the Manchus overthrew the Ming in 1644, that the Jesuit missionaries, whose first arrival in China had been Matteo Ricci in 1581, fully established themselves at the imperial court. The relations between the Jesuits and the first emperors of the Ch’ing Dynasty were such, that Jesuits shared responsibility for the education of the prince, along with his classical Confucian tutors. This prince would later become the famous emperor K’ang Hsi, under whom the collaboration between East and West achieved its highest level, a collaboration organized, on its European side, by the great German philosopher, Gottfried Leibniz. The science of Europe’s Golden Renaissance, coupled with China’s tradition of the Twelfth-century Confucian Renaissance of the philosopher Chu Hsi, engendered an era of extraordinary scientific and technological advance. Under K’ang Hsi, official art workshops were reestablished in the capital and in regional centers. The Imperial Kiln Complex in Ching-te-chuen was rebuilt, and became a renewed center of porcelain production.

One of the exhibit’s finest examples of East-West collaboration, is the silk handscroll “One Hundred Horses,” finished in 1728, which gave birth to a new style by merging the best pictorial techniques of Europe and China. It was painted by Giuseppe Castiglione, a Jesuit missionary, who arrived in China at the age of twenty-seven. After several years of work at a glazing workshop, Castiglione took the Chinese name of Lang Shih-ning. Upon seeing “One Hundred Horses” for the first time, the Emperor Ch’ien-lung named Castiglione principal court painter. Both this handscroll, and another one by Castiglione entitled “Assembled Blessings,” are made in the traditional technique of Chinese painting in ink and mineral colors on silk, and the themes are also traditionally Chinese, but both have a three-dimensional quality accomplished by the subtle use of the Western technique of chiaroscuro, and Renaissance-developed perspective.



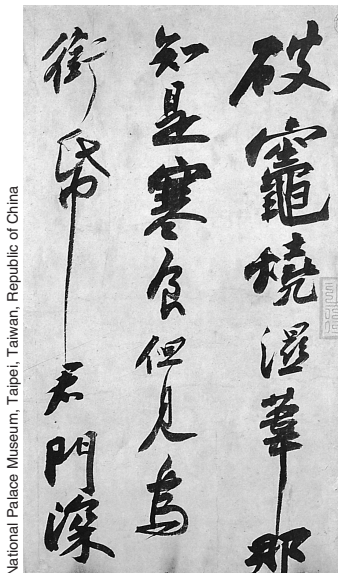
Lang Shih-ning (Giuseppe Castiglione), “One Hundred Horses” (detail) (1728).

Minimum and Maximum in Brushwork

Almost all the pieces in paper or silk, and also some of the bronzes, were accompanied by calligraphic poems, a crucial aspect of Chinese painting to be understood by the West. Confucian teachings considered writing to be the moral act of a man who fulfilled his responsibilities to society as a whole—past, present, and future—as it was embodied in the person of the emperor, in his own family, or in a specific clan. Writing was also a prerequisite for the individual to be considered one of the *literati* (*wen-ren*), since, among other things, the need to memorize the composition of thousands of calligraphic characters and their meanings, required many years of study. Lifelong dedication and practice were necessary to be able to write skillfully.

Each calligraphic character is a composition in itself, sometimes requiring as many as twenty-four brushstrokes. Aside from being part of the group of characters, each is an individual entity with intrinsic value. Chinese calligraphy has passed through many stages in its development to the present.

Five masterpieces of calligraphy and painting on silk and paper from the T'ang (618-907) and Sung (960-1279) Dynasties were displayed, including "Poems Written at Huang-chou on the Cold Food Festival," a handscroll by the



National Palace Museum, Taipei, Taiwan, Republic of China

most famous poet and calligrapher, Su Shih (1037-1101), and "Bamboo," by Wen T'ung (1018-1079), an early example of a subject that continues to be a Chinese favorite. The identity of the artistic idea in these two works, one "painting," the other "calligraphy," is evident. Many beautiful examples of calligraphy from later periods were exhibited, including ones by Shen Chou, patriarch of the *literati* in Soochow during the Ming Dynasty.

Shen Chou's sixteen ink and color works on paper, entitled "Drawings from Life" (1494), are a group of calligraphic paintings, where the essential characteristics and forms of the subject are represented with a minimum of brushstrokes, but with total freedom. When the National Gallery exhibited some of these drawings in the "Circa 1492" show in 1992, the public was able to compare them with drawings and watercolors from the Italian Renaissance. This time, an exhibition of works on paper entitled "Six Artists, Six Centuries," was also on dis-

Left: Su Shih, "Poems Written at Huang-chou on the Cold Food Festival" (detail) (1082). Below: Wen T'ung, "Bamboo" (detail) (c.1070).



National Palace Museum, Taipei, Taiwan, Republic of China

play at the museum, so it was again possible to compare watercolors by Dürer with these extraordinary Chinese paintings.

Concerning a civilization, five thousand years of continuous existence speak for themselves. "Splendors of Imperial China," and the catalogue volumes issued to commemorate it, should generate a true sense of admiration and respect for a culture and civilization little known in the West, but from which there is a great deal to be learned.

—Ana María Mendoza

Two catalogue volumes have been published to commemorate the exhibit. The full catalogue, "Possessing the Past: Treasures from the National Palace Museum, Taipei," by Wen C. Fong and James C.Y. Wyatt, is 648 pages long, and is priced at \$85. "Splendors of Imperial China: Treasures from the National Palace Museum, Taipei," by Maxwell K. Hearn, is a beautiful, shorter (144 page) report of the exhibit, priced at \$35. Both volumes are published by The Metropolitan Museum of Art, N.Y. and the National Palace Museum, Taipei, and may be available in local libraries.



National Palace Museum, Taipei, Taiwan, Republic of China

Shen Chou, one of sixteen drawings from "Drawings from Life" (detail) (1494).

Some Remarks on Chinese Painting and Its Influence on the West

In the thousand years from A.D. 700 to 1700, and in particular during the Chinese Renaissance under the Sung Dynasty (960-1279), the greatest contribution of China to universal culture in the domain of painting was the invention of several different types of non-linear perspective, such as one can admire as far back as the Eighth century A.D.

The six ground-rules of the Chinese school of painting were established by Xie He (500-535):

- “The first of the six rules of painting is: inner resonance gives life and movement (*qi yun sheng dong*);
- “the second: structural (“bone”) method in the use of the brush (*gu fa yong bi*);
- “the third: faithfulness to the object in depicting forms (*ying wu xiang xing*);
- “the fourth: conformity to mode in applying color (*sui lei fu cai*);
- “the fifth: proper arrangement in the composition (*jing ying wei ji*);
- “the sixth: transmission by copying (*chuan yi mo xie*) [i.e., copying famous models—DS].”

Contrary to the Nietzschean interpretation in which modern artists like Kandinsky (in his “Concerning the Spiritual in Art”) or the poet André Breton (with “*automatism*”), indulge,—isolating the first rule from the rest, to just plunge into “primordial chaos,”—the notion of “inner resonance” must be understood as “*divine inspiration*.” In the year 1074, the Sung painter Guo Ruoxu wrote in “Notes Concerning What I Saw and Heard Regarding Painting”:

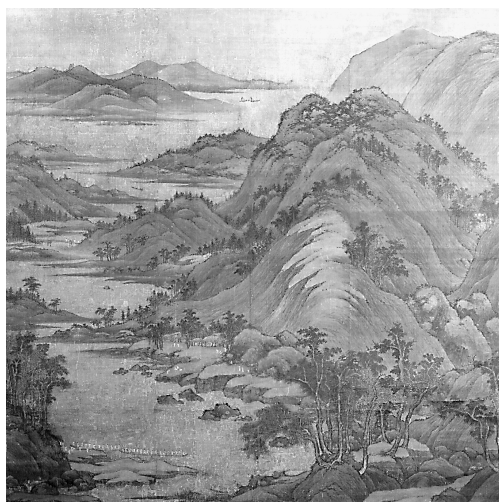
“If a person’s spiritual courage (*ren-pin*) is great, it follows that his inner resonance is necessarily great. And if his inner resonance is great, then his paint-

ing will necessarily be full of life and movement (*shendong*). It could be said, that in the most elevated of spiritual heights, he contends with the quintessential.”

It is this concordance with the universal which permits a painter to portray the idea, or the principle of things (*li*), rather than the outward appearance of the form.

The best definition of “*li*” is found in Su Shih (1037-1101), who wrote in his “Notes on Jingyinyuan Paintings”:

“On the subject of painting, I judge that if human figures, animals,



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buildings, or implements have a constant form, in contrast, mountains and rocks, trees and bamboos, running and rippled water, like mists and clouds, do not have a constant form, but preserve a constant inner principle (*li*). When a constant form is defectively portrayed, everyone perceives it; however, even a



© RMN, Louvre

FIGURE 1. Leonardo da Vinci, “Mona Lisa” (detail) (1503).

FIGURE 2. Dong Yuang (947-970), “Festival to Bring Rain.”

connoisseur might fail to see that a constant principle has not been honored. That is why so many mediocre painters, in order to trick the public and appear important, paint things lacking a constant form. Now, a fault in representing the form affects only a part of the painting, while an error in the constant principle ruins it entirely. Therefore, when representing things that do not have a constant form, one must honor their inner principle. Many craftsmen are capable of drawing forms in minute detail; on the other hand, only noble minds and distinguished talents achieve the principles of things.”

Long before this period, the great painter and scholar Wang Wei (701-761), who founded the school of landscape (called, in Chinese, “mountain-

water”), had already made this idea clear in his *Shan-shui-fu*:

“When painting a landscape, the Idea must precede the brush. For proportion: height of a mountain—ten feet; height of a tree—one foot; length of a horse—1/10 of a foot; height of a man—1/100 of a foot. Concerning perspective: a man at a distance—one doesn’t see his eyes; a distant tree—one can’t distinguish the branches; on a faroff mountain—soft contours like an eyebrow, not one rock is visible; similarly, not a ripple on distant water where it meets the horizon of clouds [a beautiful description of ‘perspective of disappearance,’ of the sort Leonardo was able to recreate—KV]. As for the relations that exist between the elements: The mountain is encircled by clouds, rocks conceal springs, pavilions and terraces are surrounded by trees [what I call ‘narrative perspective,’ which ‘relates’ the space—KV], the paths bear the traces of men [i.e., the space is inhabited by man—KV]. A rock must be shown with three faces,* a path can be traveled from both ends, a tree is recognizable by its crown, a body of water is known by the wind passing over it. Consider first atmospheric effects [i.e., the space is not empty or dead—KV]: differentiate light and shadow, distinct and hazy. Establish a hierarchy amongst the figures, determine their pose, their conduct, how they greet one another. Too many elements—the danger of cluttering; too few—dissipation. Grasp the exact dimensions and precise distance. That there is space between the far and the near applies

* i.e., in three dimension—DS.

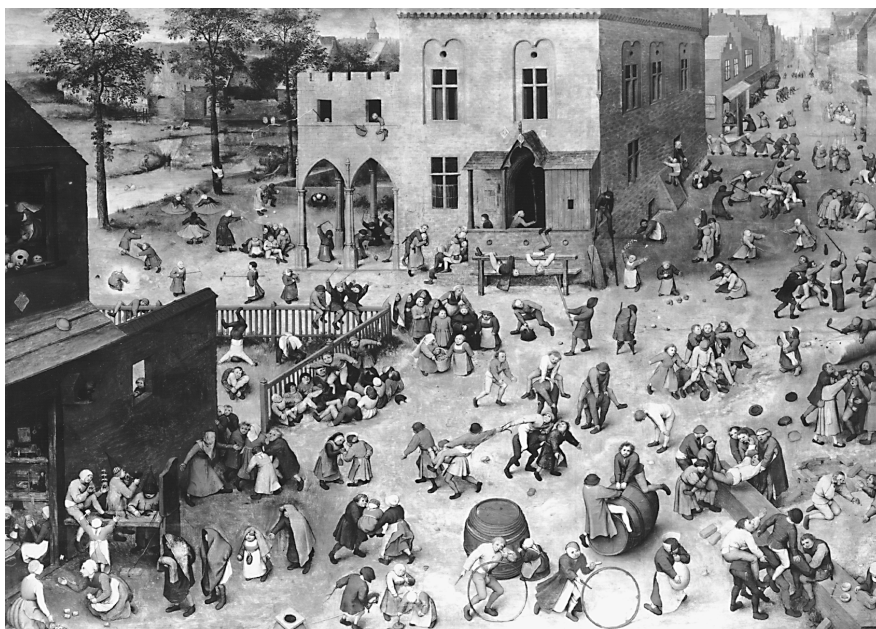
FIGURE 3. Pieter Bruegel the Elder, “Children’s Games” (1560).

FIGURE 4. Zhang Zeduan, “Going Up-River at the Qing Ming Festival” (detail) (late 11th-early 12th century).

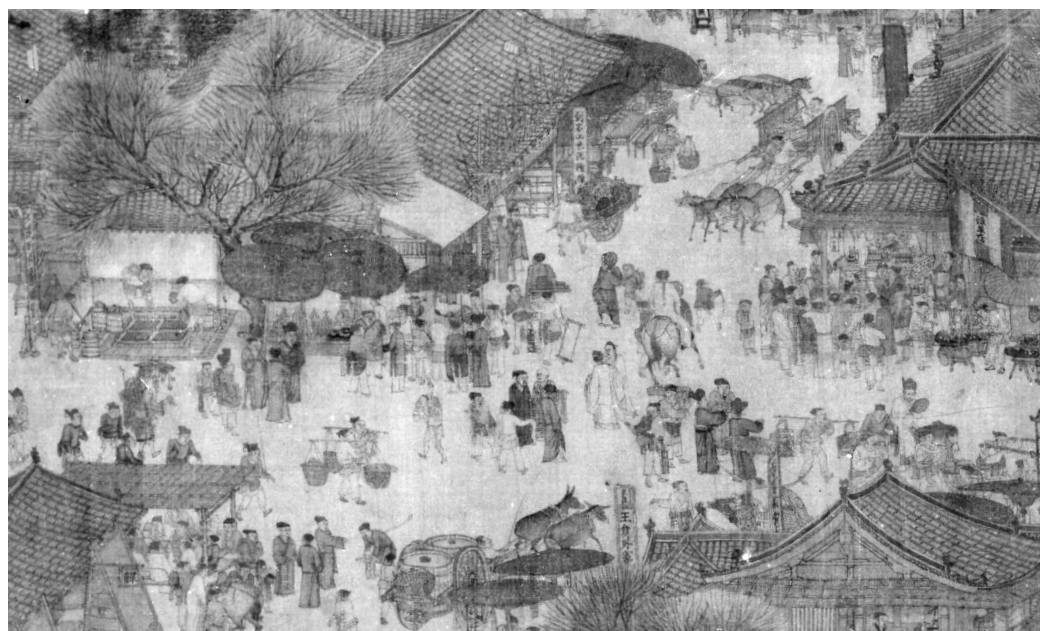
to mountains as well as to waterways.”

This strong conviction, which is adhered to by Confucians and Taoists (although with opposite conclusions), of not relying on outward appearances of the visible world, induced painters to use visual ruses to transport the viewer from one level of horizon to another. Interaction between water and mountains being a symbol of universal transformation, different levels of horizon can flow from one another by type: water, light mist, mountain, heavy mist,

cloud, water, light mist, mountain, and so on. When, in the course of a visit to the Louvre in Paris, you see busloads of Asians filing with great emotion before the “Mona Lisa” of Leonardo da Vinci, don’t be astonished. The “Mona Lisa” belongs to their culture also, or rather, to that domain of universal culture which we share with them. The particular method Leonardo uses to establish a “wandering” (“*balladeur*”) horizon [SEE Figure 1], is identical to that which we find in the Chinese school of landscape



Kunsthistorisches Museum, Vienna



The Palace Museum, Beijing



FIGURE 5. Pieter Bruegel the Elder, "The Magpie and the Gallows" (detail) (1568).

Hessisches Landesmuseum Darmstadt

FIGURE 6. Tcheou Tch'en (c.1500-1535), "Dreaming of Immortality in a Thatched Cottage."



Courtesy of the Freer Gallery of Art, Smithsonian Institution, Washington, D.C.

for over a thousand years! The landscape of Dong Yuan (active 947-970), "Festival to Bring Rain" [SEE Figure 2], or "Travelling Amid Streams and Mountains" of Fan K'uan (c. 980-1050) [SEE page 88], are good examples.

Of course, if you are a "good" Cartesian or Newtonian, you could sweep all this evidence of a great civilization aside with a shrug, and cry: "Mysticism!"

It should be pointed out that linear perspective was mastered in China, too. As early as 1074, Guo Ruoxu (cited above) wrote:

"When one paints buildings amongst trees, avoid false calculations, and draw the outlines with an equal force (*jun-zhuang*) [i.e., establish an equality of line weights within each of the different depths of plane—KV]; so that the relative distance (*shenyuan*) penetrates the space; and, so that the hundreds of diagonals converge at the same point, as in the works carried out under the Sui, T'ang, and the Five Dynasties. . . .

When one paints towns and pavilions, make evident the four edges [of the buildings—KV],* with the vertices arranged in order, front and back being clearly distinguished and without error in drawing the lines. The painters of today generally use a ruler to construct right angles; they set off the vertices with numerous complex brushstrokes lacking completely the sense (*yi*) of vigorous beauty (*zhuangli*) and of free elegance (*xiannya*)."

It is not to be excluded that the "military" ("bird's-eye") perspective used by Pieter Bruegel the Elder in his "Children's Games," was inspired by such Chinese feats as "Going Up-River at the Qing Ming Festival" of Zhang Zeduan (late Eleventh-early Twelfth century) [SEE Figures 3 and 4].

To conclude, let us examine the case

* See, e.g., Figure 13 in the author's "The Invention of Perspective," *Fidelio*, Winter 1996 (Vol. V, No. 4), p. 55—DS.

of aerial (atmospheric) or color perspective (i.e., evoking space through a progressive diminution of the intensity of color), whose conceptualization we attribute today to Leonardo. The comparison between "The Magpie and the Gallows" of Bruegel [SEE Figure 5], so appealing in its virtuosity, and the painting attributed to Tcheou Tch'en (active c.1500-1535), "Dreaming of Immortality in a Thatched Cottage" [SEE Figure 6], shows us the fruits of the Chinese approach, come to enrich the West—because these works are constructed entirely on the same principle, the principle which one finds already in germ in the Eighth century in the conceptions of Wang Wei.

—Karel Vereycken,
translated from the French
by Deborah Sonnenblick

This article was originally presented to a Paris conference on the Eurasian Land-Bridge, Sept. 15, 1996.

A Metric for the Religious Life

This is the second volume of essays produced by the American Cusanus Society in recent years, the first of which, *Nicholas of Cusa in Search of God and Wisdom*, was published by Brill in 1991. While, as the book's Introduction states, "readers and reviewers of this volume will find a number of issues to dispute," the volume contains several enduring contributions and, even in articles with which one might disagree, many invaluable historical details about, and insights into, Cusanus' life and work.

The book is divided into three parts: "Cusanus in Context"; "The Church and Reform"; and "Christology and Mystical Theology." Of greatest interest in this volume are the articles on "The Church and Reform," which include the first English translation of Cusanus' *Reformatio Generalis*, which he wrote in 1459 at the request of Pope Pius II.

The context for a discussion of this work, translated by Morimichi Watanabe and Thomas M. Izbicki, is developed in other essays which consider Cusanus' *On Catholic Concordance* (1433); *On Presidential Authority in a General Council* (1434); his role at the Council of Ferrara-Florence; his mission to the Imperial Diets in Germany in defense of the Papacy; and his efforts as a Cardinal-legate to reform popular religion in the Germanys in 1451-1452.

Cusanus arrived in Rome from his Tyrolean See of Brixon in 1458, after his efforts at reform there had been thwarted by Duke Sigismund. The newly elected Pope Pius II appointed a commission to reform the Curia, and nominated Cusanus to serve as papal Vicar General for Rome in his absence. Cusanus drafted the *Reformatio Generalis* in the first part of July of 1459, in the form of a papal Bull.

To give an insight into Cusanus' character and the resistance which confronted his proposals, Watanabe and Izbicki quote Vespasiano de Bisticci's (1421-1498) description of him: "He

cared nothing for state or for possessions, and was one of the most needy of the Cardinals, thus giving an excellent example in all his doings."

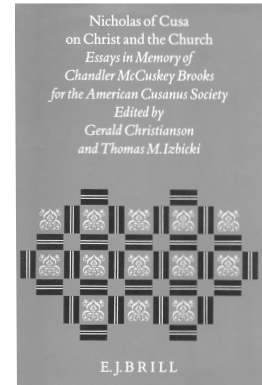
They also cite Cusanus' own comments to Pius II, recorded by the Pope in his *Commentaries*: "I do not know how to flatter. I hate adulation. If you can bear the truth, I like nothing which goes on in this Curia. Everything is corrupt. No one does his duty. Neither you nor the Cardinals have any care for the Church. What observance of the canons is there? What reverence for laws? What assiduity in divine worship? All are bent on ambition and avarice. If I ever speak in a consistory about reform, I am laughed at. I do no good here. Allow me to withdraw. I cannot endure these ways. . . ."

Cusanus' proposal for a general reform of the Church, if implemented, would have changed all subsequent world history. There would have been neither a Protestant Reformation, nor a Catholic Counter-Reformation. Both of these "reformations" must be judged, based upon the standard set by Cusanus' proposal. Moreover, even today that standard remains a valid metric.

The proposal Cusanus made was not dogmatic, formal, or structural in nature. The *Reformatio Generalis* contains a theological introduction; fourteen general rules about a visitation or formal inspection to be conducted beginning with the Pope himself, the Roman Church and the Curia, and then extending to individual provinces; and, finally, practical suggestions for the reform of the Curia.

The 'Imitation of Christ'

The fundamental premise of Cusanus' reform proposal is, that each individual must "take on the form of the Lord Christ. This form is acquired by imitation. Wherefore, the Apostle, who had taken on the form of Christ, says, *Be imitators of me, beloved children, as I am of Christ.*" Cusanus continues: "The Teacher, therefore, calls out to all of us



Nicholas of Cusa on
Christ and the Church,
Essays in Memory of
Chandler McCuskey Brooks
for the
American Cusanus Society
edited by Gerald Christianson
and Thomas M. Izbicki
E.J. Brill, Leiden, 1996
360 pages, hardbound, \$110.50

his disciples, who wish to change into his form, saying, *Learn from me, for I am meek and humble of heart; and you will find rest for your souls.* And, elsewhere, when he wished to demonstrate humility with the work of washing the feet [of the apostles], he said, *I gave you an example, that you should do what I did.*" He then concludes: "We, therefore, who wish to reform all Christians, at least, can put forth to them no other form on it than that which we imitate, that of Christ, from whom they receive [their] name."

The fourth of the fourteen rules designed to guide the visitors, builds on this concept of being true to one's name. "Anyone's life is defined in the definition of his name. Whoever acts differently from what his name designates certainly is named thus falsely and is unworthy of that name, whose meaning his life contradicts. How can someone be called a Christian whose life is contrary to Christ? How can [a man be called] a religious who [is] an apostate; . . . a ruler, if absent; a bishop, if he does not supervise the flock committed [to him]; a leader, if a betrayer; a king, if a tyrant?"

The book also includes an Appendix prepared by Thomas M. Izbicki: "Nicholas of Cusa: The Literature in English, 1989 to 1994." A reflection of the editors' intellectual honesty is the fact that this Appendix gives unusually prominent coverage to the contributions of Lyndon H. LaRouche, Jr., Helga Zepp LaRouche, and the writer of this review, himself a member of the American Cusanus Society. The one-paragraph introduction to the Appendix concludes with the following observa-

tion: "One notes too that, aside from the continuing interest in Cusanus shown by academics, many of them members of the American Cusanus Society, a great interest in Nicholas' works has been shown by the circle of Lyndon LaRouche."

Listed in the Appendix are Helga Zepp LaRouche's "Nicolaus of Cusa and the Council of Florence" [*Fidelio*, Vol. I, No. 1 (1992)] and Lyndon H. LaRouche, Jr.'s "The Ontological Superiority of Nicholas of Cusa's Solution over

Archimedes' Notion of Quadrature," [*Fidelio*, Vol. III, No. 2 (1994)]. The Appendix also lists all eighteen translations of works by Nicolaus of Cusa done by this author, which have been published by the Schiller Institute in *Toward a New Council of Florence: "On the Peace of Faith" and Other Works by Nicolaus of Cusa*, as well as this author's article "Nicolaus of Cusa's 'On the Vision of God' and the Concept of Negentropy" [*Fidelio*, Vol. II, No. 4 (1993)].

—William F. Wertz, Jr.

The Anglo-Venetian Descent into Barbarism

It is the obsession of leading geopolitical strategists in London and other Western capitals, that there exists no greater priority than to mobilize the "Western world" for conflict with the nations that are central to the development of the Eurasian Land-Bridge. This is the region for which Sir Halford Mackinder, Britain's leading geopolitical theorist at the turn of the century, coined the term "Eurasian heartland," the battle for which, he said, would determine who would control the world.

Since 1993, when it was first popularized in an article in the Council on Foreign Relations quarterly, *Foreign Affairs*, Harvard professor Samuel Huntington's "clash of civilizations" construct has been one of the most discussed variants of this obsession.

The "clash of civilizations" is the "geopolitical war-plan" for an influential, British-run faction in the transatlantic policy establishment. Hence, on the back dust-jacket, there are two endorsements, from (Sir) Henry Kissinger and Zbigniew Brzezinski. Kissinger has spent his entire career promoting British balance-of-power, or geopolitical, doctrines, beginning in the 1950's period, when he wrote his Harvard doctoral thesis, *A World Restored*.

Not surprisingly, in the period immediately leading up to the publication of the "clash of civilizations" article, Huntington was parroting Kissinger's ideas. In early 1991, he wrote an article for the January-February issue of *Sur-*

vival, the publication of the International Institute for Strategic Studies (IISS), in which he insisted that American policy toward Eurasia should premise itself on the British geopolitical theories of Mackinder, and on the balance-of-power approach that guided Lord Castlereagh at the 1815 Congress of Vienna.

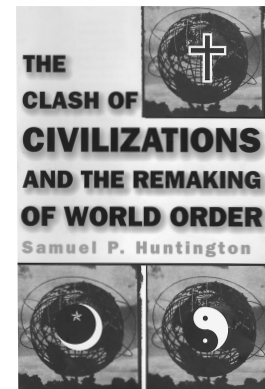
As for Brzezinski, it was he, in his capacity as national security adviser to President Jimmy Carter in the late 1970's, who developed the so-called "Arc of Crisis" theory, according to which the region south of the Soviet Union would constitute a vast arena of instability, the which could be used as a geostrategic weapon against the Soviets. Samuel Huntington sat on Brzezinski's National Security Council staff, as director of security planning.

Also significant, is the fact that Brzezinski drew upon the work of Prof. Bernard Lewis, the Oxford-trained British Arab Bureau operative. The term "clash of civilizations," in fact, was *invented* by Bernard Lewis, in an article in the September 1990 issue of *Atlantic Monthly*; Huntington acknowledges that he lifted the expression from Lewis.

Anglo-Venetian Psy-War

The substance of his polemic shows Huntington, methodologically, to be a devotee of Venetian-British psychological-warfare techniques.

The argument is based on a pair of simplistic contentions. He writes: "Civilizations are the ultimate human tribes,



The Clash of Civilizations and the Remaking of World Order
by Samuel P. Huntington
Simon and Schuster, New York, 1996
367 pages, hardbound, \$26.00

and the clash of civilizations is tribal conflict on a global scale. . . . Relations between groups from different civilizations . . . will be almost never close, usually cool, and often hostile."

Already on the second page of the book, the "witness" Huntington summons, to back up his argument, is a fictional "Venetian nationalist demagogue" in the novel *Dead Lagoon*, by Michael Dibdin. This lagoon creature remarks: "There can be no true friends without true enemies. Unless we hate what we are not, we cannot love what we are."

It is a short jump from such absurd axiomatic premises, to the "inevitability" of future wars: "In the emerging world, the relations between states and

groups from different civilizations will not be close and will often be antagonistic. Yet some intercivilization relations are more conflict-prone than others. At the micro level, the most violent fault lines are between Islam and its Orthodox, Hindu, African, and Western Christian neighbors. At the macro level, the dominant division is between 'the West and the rest,' with the most intense conflicts occurring between Muslim and Asian societies on the one hand, and the West on the other. The dangerous clashes of the future are likely to arise from the interaction of Western arrogance, Islamic intolerance, and Sinic assertiveness."

Needless to say, among Huntington's goals, is to polemicize against any effort by the Clinton administration to achieve positive, viable relations with the countries along the Eurasian Land-Bridge route. At one point, he attacks that direction in U.S. policy today, which seeks to "develop close relationships with the core

states of other civilizations, in the form of . . . 'constructive engagement' with China, in the face of the natural conflicts of interest." What Huntington insists on, instead, is that the United States and Europe must impose technological apartheid on China and other countries, by acting, as he puts it, "to restrain the development of the conventional and unconventional military power of Islamic and Sinic countries," and "to maintain Western technological and military superiority over other civilizations."

Lying About the West

If Huntington's depiction of Chinese (Sinic), Islamic, and other civilizations is incompetent, his depiction of "the West" borders on the ridiculous. For all his talk of "Western civilization," Huntington displays no understanding whatsoever of those features, dating from the Fifteenth-century Golden Renaissance, which allowed "the West" to catalyze the vast increase of world population, by

developing, and then proliferating, science, technology, and human progress around the globe.

In essence, his "West" is the British imperial system and the Eighteenth-century Enlightenment. He uses terms like "Euro-American civilization" and "Western Christendom" interchangeably with "Western imperialism." Such an identification, of course, allows "the West" to be the perfect enemy-image for the other, "non-Western civilizations."

For those looking for an antidote to Samuel Huntington, it might be parenthetically noted, that the Renaissance tradition also effectively resolved the problem of clashes among cultures, religions, and civilizations, more than five hundred years ago, when Cardinal Nicolaus of Cusa wrote his dialogue *De Pace Fidei* (*On the Peace of Faith*), a philosophical manual for reconciling cultures around the highest conceptions of mankind, which are common to them all.

—Mark Burdman

The Courage To Change Axioms

At a White House reception following the signing of the Oslo peace accords between Israel and the Palestine Liberation Organization, Israel's Prime Minister Yitzhak Rabin offered a toast to those responsible for this hard-won achievement.

Let us lift our glasses, he said, to honor "those with the courage to change axioms."

Leah Rabin has written a hard-hitting memoir about her late husband, his accomplishments, and their lives together, one which provides insights into this man who demonstrated the courage to change axioms. It is a touching story, lovingly written, of a mutual lifelong commitment to ensure security for Israel, and peace in the Middle East.

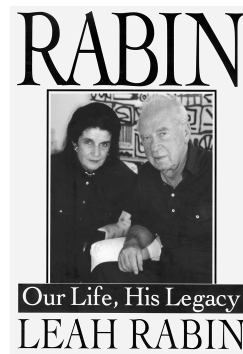
The Rabin who emerges in this intimate portrait is a private, shy man, who was fiercely devoted to his family and his nation. He is also a man whom Leah Rabin believes to have possessed the unique qualities required to "change the priorities of the nation," a warrior who had led his nation in war, and was

therefore trusted to negotiate for peace.

It is no paradox, she writes, that the man who led the armed forces to a smashing victory over the Arab forces in the Six-Day War, and in the brutal repression of youth during the Intifada, was the man who shook Arafat's hand on the White House lawn. The horrors of the Intifada, in which Israeli soldiers routinely were deployed to beat and club Palestinian youth, convinced Rabin that Israel's policies must change.

"The Intifada," she writes, "made it wholly clear to Yitzhak that Israel could not govern another people." By 1989, he "was gradually moving toward advocating Palestinian autonomy and self-determination." It was this understanding which caused Rabin to make peace with his long-term adversary in the Labor Party, Shimon Peres, and, eventually led to his grudging acceptance of Arafat as a partner.

"When he said [during the 1992 election campaign, which was won by Labor—HS] that it was time to change our priorities and make peace, the



Rabin: Our Life, His Legacy
by Leah Rabin
G.P. Putnam's Sons, New York, 1997
320 pages, hardbound, \$24.95

nation took him at his word."

When presenting his cabinet to the Knesset on July 13, 1992, Rabin took on the axioms of the majority of Israelis. "We shall change the national order of priorities. Israel is no longer necessarily an isolated nation, nor is it correct that the entire world is against us. We must rid ourselves of the isolation that has gripped us almost for half a century."

In that same speech, Rabin made clear he believed that security is not found solely in military power. "Security is not

only a tank, an aircraft, a missile ship. Security is also a man's education, housing, schools, the street and the neighborhood, the society in which he grew up. And security is also that man's hope."

Rabin came to this view as a soldier, for whom war was always a last option. Leah Rabin writes that one of his favorite expressions was, "A destroyed house can be rebuilt. A burned-down tree can be replanted. But a young life cannot be replaced."

At a commemoration thirty days after his death, Rabin was remembered by author Meir Shalev, who described him as a man "who did not lock himself inside the fortified battlements of his opinions. Who at an advanced age, when beliefs are carved in stone and ideas freeze, and men no longer stray from well-trodden paths—suddenly, with great momentum, leapt from the furrows of his life onto a new path. And the roots of the turnaround, for those who remember, were already planted in

the young Yitzhak Rabin, who in his speech on Mount Scopus after the Six-Day War, said that we Jews are unable to rejoice as conquerors and victors."

His assassination is thus more devastating when seen in this context, through Leah Rabin's eyes. "He always felt that his second term as Prime Minister was a privilege, providing him with the chance to do what truly needed to be done, equipped as he was then with the experience of many years."

She is understandably bitter in writing of the assassination. The book opens with a description of the scene outside their apartment on the evening of his assassination, as right-wing demonstrators whom she describes as "loud-mouthed extremists with no sense of decency," chant that her husband is a traitor and a Nazi.

She believes her husband was "certainly the victim of an intellectual conspiracy" which, at its core, included extremists and rabbis who "inspired atti-

tudes that led to the murder." The murderer was led by them to believe that "he was fulfilling a holy mission sanctioned by them—that the 'holy land' of Judea and Samaria is more holy than the life of the Prime Minister who was willing to compromise on this land for peace."

Yet this book is not written in the spirit of revenge, but of hope, that her husband's sacrifice will not have been in vain. She concludes with her response to the anguished question posed by one of Rabin's comrades-in-arms, who asked, "Where, oh where, are there others like that man?"

Leah Rabin, bereaved widow, and optimistic patriot, answers: "As great a challenge as it may be, our greatest duty is to find them, to nurture them, and to support the men and women who will carry Yitzhak's vision forward and breathe life into his legacy. And we ourselves must have the courage to seek the peace of the brave."

—Harley Schlanger

From America's Best Ally, to Pariah

When Chile's Marxist President Salvador Allende was overthrown in 1973, Manuel Noriega, who was then head of Panama's intelligence services, interceded to save as many of the thousands of leftists who were detained at Santiago's soccer stadium, as possible.

Years later, Noriega had dinner with Gen. Augusto Pinochet. "Well, you Panamanians sure did save a lot of those Marxists—I'll bet it was something like two thousand of them," said Pinochet. "Tell me one thing, General Noriega: Have they ever thanked you?"

As this book documents, the left has no monopoly on ingratitude. Noriega did favors for the United States, from helping to reduce bloodshed during the Grenada invasion, to interceding with Fidel Castro for the release of C.I.A. contract agents caught carrying out sabotage in Cuba. When Jimmy Carter asked, Panama gave asylum to the Shah of Iran, and when C.I.A. directors from George Bush to William Casey asked, Noriega served as go-between, between

the U.S. and Cuba.

As everyone knows, Bush said thanks, by ordering the December 1989 invasion of Panama, to get Noriega—in the process killing thousands of Panamanians, and more than a score of American servicemen. It "marked the debut of the multi-billion-dollar Stealth bomber in combat, fighting an enemy that had no radar to be fooled . . . nor planes or rockets with which to challenge its domination of the airways." The stated reasons for the invasion—"supporting democracy, blocking drug trafficking, protecting the honor of a woman, responding to Noriega's declaration of war—were lies," writes Eisner.

So, why did Noriega have to go? For one thing, Noriega and his mentor and predecessor, Gen. Omar Torrijos, sought to transform Panama from a quasi-protectorate of the United States, into a sovereign nation-state. In 1977, in the midst of the Cold War, the U. S. had little to lose by signing a treaty pledging to turn over to Panama, twenty-three years

THE MEMOIRS OF
**MANUEL
NORIEGA**

**AMERICA'S
PRISONER**

MANUEL NORIEGA
AND PETER EISNER

**America's Prisoner:
The Memoirs of Manuel Noriega**
by Manuel Noriega and
Peter Eisner
Random House, New York, 1997
293 pages, hardbound, \$25.00

down the road, what Noriega describes as "a little canal built three-quarters of a century earlier, that was becoming obsolete and too small for the world's greater commercial fleets." In exchange, Panama was forced to agree to Wall Street's demand for banking secrecy laws easing drug-money-laundering.

But, Panama was already courting the Japanese as partners for the construc-

tion of a new, sea-level canal. Japanese industrialist Shigeo Nagano took the lead in this regard. "The idea of Japan participating in or financing an alternative to the Panama Canal drove the Americans wild," writes Noriega. Thus, the destabilization campaign launched in 1986, which culminated with the 1989 invasion, "was a result of the U.S. rejection of any scenario in which future control of the Panama Canal might be in the hands of an independent, sovereign Panama—supported by Japan."

Noriega writes, that former Secretary of State George Shultz, and former Defense Secretary Caspar Weinberger—the two Bechtel corporation officials who launched the campaign against him—stood to profit by eliminating the Japanese as potential rivals in building a new canal.

Obstacle to the New World Order

Ultimately, however, it was because Noriega stood in the way of Bush's new world order, that he had to be eliminated: He said no to Bush's guns-for-drugs Nicaraguan Contra operation; he said no to renewing the lease on the counterinsurgency School of the Americas; and, he said no to Shultz's protégé, Nicolas Ardito Barletta.

Following the dictum of Henry Kissinger, that "[i]n order to solve a problem, you must first create the problem," Noriega went from being the best ally of the U.S. in the war on drugs, to being portrayed as the world's worst drug pusher. As he writes, he was placed in the "pantheon of the Hitlers, along with Saddam Hussein, Moammar Gadhafi, and Fidel Castro."

Noriega's trial in Miami did not prove his guilt, but any other outcome was ruled out of order. Witnesses, mostly major drug traffickers such as Carlos Lehder, were allowed to lie in exchange for lighter sentences, or release from prison scot-free. Prosecutors cut deals with the Cali cocaine cartel to obtain perjured testimony—"by silver or lead"—from the likes of trafficker Ricardo Bilonick. Often as not, these bought-and-paid-for witnesses offered contradictory testimony, and the chief

source of the accusation that Noriega was dealing drugs, Jose Isabel Blandon, was considered such a fabricator and prevaricator, that the prosecutors did not dare call him as a witness.

The government blackmailed one of Noriega's lawyers and forced him to become an informant. Another, Neal Sonnett, resigned suddenly before the start of the trial. Trial Judge William Hoeverler told co-author Eisner that "had Sonnett remained on the case, I think the outcome could have been different—Sonnet could have won the case." Hoeverler at times felt doubts about Noriega's guilt on the drug charges, "but was placated by the knowledge that Noriega was a bad character," writes Eisner.

Noriega was not allowed to present exculpatory evidence. Nothing that would implicate Bush, Oliver North, John Poindexter, and the rest of the Iran-Contra crowd, was allowed at trial.

The famous photograph proving that Bush lied when he claimed "I never met General Noriega," was not allowed into evidence. It showed Vice President Bush and Gen. Noriega, "the future President and the future pariah," smiling at each other at a December 1983 meeting at Panama's Omar Torrijos International Airport: "'General, it's good to see you again,'" Noriega quotes Bush. "'I hope you'll be supporting my old friends,' Bush said, 'Our pilots are already chosen and ready to start flying.' Neither one of us realized it, but the pilots included such men as Jorge Canalias, Floyd Carlton Caceres, Cesar Rodriguez, future cocaine traffickers transporting Contra weapons in exchange for cocaine. They would later accuse me of dealing drugs."

Judge Hoeverler now hopes that the Court of Appeals, and ultimately the Supreme Court, will rule on the issues raised by Noriega's trial. While Bush bears the brunt of the blame for what happened in Panama, in the final analysis, as Eisner writes, "the responsibility lies with a country whose citizens should not be so complacent."

—Carlos J. Wesley

President Clinton's

If the times call for a strong President, he will govern much as Franklin D. Roosevelt governed—with boundless energy, great charm, and bold initiative. Faced with genuine evil or a national crisis of undisputed dimensions, Bill will rise to it. But in the more common situations where the public is uncertain about the choices it faces and what's at stake in those choices, I worry that his leadership may fail. He'll become unfocused and too eager to please."

So wrote former U.S. Secretary of Labor Robert B. Reich on Sept. 28, 1992, assessing the potential of his friend of twenty-five years, his fellow Oxford and Yale Law School student, the man who would be President four months later, Bill Clinton.

This ironic, humorous, and eye-opening look at the first term of the Clinton presidency, written from diary entries kept during those four years, is must reading for anyone truly interested in ensuring that Clinton does act like FDR, and *does so now*, as the moment of a "national crisis of undisputed dimensions" is upon us.

Lyndon LaRouche has repeatedly stressed the strategic importance of this question over the past several months, most recently in "The U.S.A.-China Strategy," which appeared in the April 25 issue of *Executive Intelligence Review*. LaRouche wrote: "It is unlikely that any presently visible governments would act competently until such time as an 'economic Pearl Harbor effect' suddenly transforms public opinion in the manner needed to support dramatic, sudden executive action by the incumbent President of the United States. Therefore, the great danger is, that the President, and also his key partners, come to that moment of history-shaping decision inadequately prepared, and, for that reason, flub the situation, with disastrous effects for all mankind."

Whether or not Robert Reich, writing from his new job as University Professor of social and economic policy at

Friend Reminds Him Why He Came to Washington

Brandeis University's Heller School, is conscious of the *strategic* importance of Clinton's acting like FDR, he has clearly decided, having liberated himself from the Cabinet, to try to liberate Clinton from the grip of the evil that surrounds him, so that he might govern as FDR did.

The Thatcherite View

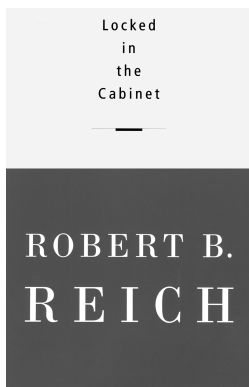
The British Tories haven't missed the importance of this book. Although it was released only on April 25, Her Majesty's London *Times* had already reviewed *Locked in the Cabinet* in its April 17 "Diary" column, under the title "Fat Chancellor."

"Diary" quotes one of the many zingers Reich has thrown into this book: Recalling his attendance at the international jobs summit, in early 1994, Reich writes: "The jobs summit is a deadly bore. I have to sit next to the British Chancellor of the Exchequer, who talks endlessly about the virtues of the free market and the social benefits of selfishness, all with such pomposity that I have to restrain myself from causing an international incident, by telling him what I think. He is as rotund as he is arrogant, a thoughtless disciple of Margaret Thatcher. Will the Tories wreck Britain before the British wreck the Tories?"

It is clear which side Reich is on in the battle against the Tories. Although he doesn't say so, he obviously had the same distasteful bellyful of Tory snobbery at Oxford, as a New York Jew, that Clinton did as an Arkansas hick.

'Conceptual Prison'

But Reich's anti-Tory view goes beyond his distaste for the disciples of Margaret Thatcher. He represented the closest thing to a sane economic outlook in the first Clinton cabinet, and was a consistent advocate for the needs of America's poor and working people. Reich was locked in battle inside the cabinet with such advocates of British/Wall Street budget-slashing as Treasury Secretary Lloyd Bentsen; and outside the cabinet,



Locked in the Cabinet
by Robert B. Reich
Alfred A. Knopf, New York, 1997
338 pages, hardbound, \$25.00

with the man he calls a "robber-baron pimp," Federal Reserve chairman Alan Greenspan.

"Greenspan haunts every budget meeting, though his name never comes up directly," writes Reich. "Instead, it's always our 'credibility' with Wall Street. It is repeatedly said that we must reduce the deficit because Wall Street needs to be reassured, calmed, convinced of our wise intentions. Never before in the history of mankind have the feelings of a street had such decisive force. The ancients worried about the moods of the skies, mountains, seas, and forests. We're placating a pavement. . . ."

"Like Paul Volcker, the Fed chief before him, Greenspan can put the economy into a tailspin simply by tightening his grip. Volcker did it in 1979, and Jimmy Carter was fired. Bill Clinton knows that. Greenspan has the most important grip in town: Bill's balls, in the palm of his hand."

In his account of a 1992 meeting of the Clinton economic transition team, which Reich headed, he spells out the reason he so strongly opposed deficit reduction as the basis for budget discussions. His concern, Reich writes, was not about the size of the deficit, but that the Federal budget document didn't differentiate between useful, if costly, invest-

ments in "human capital," and useless boondoggles. Using the example of the post-war G.I. Bill, he writes, "The G.I. Bill made college affordable to a whole generation of returning World War II veterans, and propelled much of the economic growth of the 1950's and beyond. The expense was justifiable, even though the Federal deficit was a much larger percentage of the national output then, than it is now."

"My real concern," he continues, "is that *the deficit* is already framing our discussions about what we want to accomplish in the future. Getting the deficit 'under control' is becoming the most important measure of success. We discuss it for hours! . . . We're building our own conceptual prison."

Liberated for What?

Reich says he decided not to stay on for Clinton's second term because of his desire to be with his wife and two teenage sons. The death of fellow cabinet member Ron Brown took a heavy toll as well; Reich was with him in France, on the first leg of the trip that took Brown to the Dalmatian coast and his death.

The publication of *Locked in the Cabinet* makes it clear, however, that Reich intends to remain the "middle-aged loose cannon," as he calls himself, who could help move Clinton in the direction of being a truly great President.

He portrays the real Bill Clinton, in 1994, after he has capitulated to Gingrich's bullying: "He stalks around the room, fuming, 'We're doing everything Wall Street wants! Everything Wall Street *doesn't* want gets slashed!' He takes another few steps. 'We're losing our *soul!*' He talks to no one in particular, but I can't help imagining he's yelling at Alan Greenspan, 'I can't do what I *came* here to do.' "

Locked in the Cabinet is aimed at helping Clinton remember what he went to Washington to do; and to do it.

—Marianna Wertz



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*Bronze tripod vessel (ting), Late Shang Dynasty
(13th–mid-11th century B.C.).*

China: Artistry of the Artisan

where art and ideas start, and where they end, providing a path to technological achievement and utilitarian function.

The earliest bronzes, vessels from the Shang (1300-1100 B.C.) and Chou (1100-256 B.C.) Dynasties, were cast by assembling sectional clay molds. The architectural form of the vessels, and the horizontal organization of the decoration, result from this extremely advanced manufacturing technique. The artistic

evolution of these objects corresponded directly to changes in the political organization of Chinese society. Inscriptions on the bands of horizontal decoration, for example, became a location for asserting the reigning political authority, and the later Chou inscriptions commemorate such political/social events as treaties, military exploits, weddings, etc.

Nefrite jade, or *Yu*, was venerated by Chinese society, since Confucius associated its visual and tactile qualities with the virtues of goodness, rectitude, courage, compassion, eloquence, and moderation. The carving of jade deserves the respect and admiration of the best Western diamond cutter, because it must be done laboriously, using an abrasive technique.

Sung ceramics (A.D. 960-1279) represent the culmination of centuries of artistic experimentation and technical

National Palace Museum, Taipei, Taiwan, Republic of China

In the five thousand years of China's existence—the world's oldest civilization—the rise and fall of dynasties was closely linked to the history of Chinese culture, to the different philosophical currents that emerged, and to technological achievements, inventions, and discoveries—among them, for example, the glorious invention of paper. This enormous history, which would require many years of study to begin to comprehend, could be at least appreciated through the exhibit “Splendors of Imperial China: Treasures from the National Palace Museum, Taipei,” which completed a year-long U.S. tour in April.

Not only extraordinarily beautiful examples of painting and calligraphy, but of jades, bronzes, ceramics, lacquer works, silk tapestries, and other decorative arts, were on display, challenging the preconceived notions of what the majority of the Western public consider “art.” Here, it is difficult to establish

development; for many, they are considered the highest artistic achievement of the Chinese potter. Named for the kiln sites where they were produced, they are characterized by a bluish-green glaze and utterly simple form, beautifully proportioned, imitating God's work in nature.

—Ana María Mendoza



Porcelain bowl in the shape of a lotus, Ju ware, Northern Sung Dynasty (12th century A.D.).

National Palace Museum, Taipei, Taiwan, Republic of China

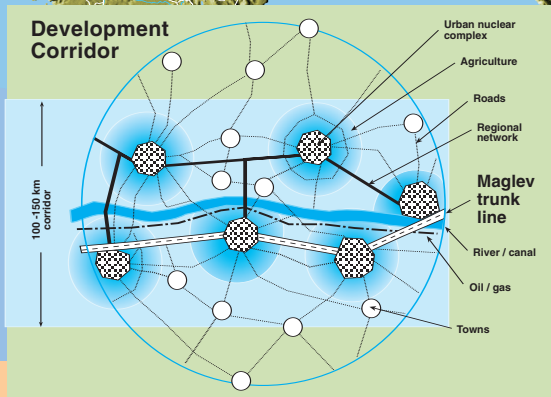


*Jade chimera (pi-hsieh), Han Dynasty
(206 B.C.–A.D. 220).*

[SEE “Treasures From China Relate Five-Thousand Year History”]

The Eurasian Land-Bridge: The End of Oligarchism

Helga Zepp LaRouche presents the projects and proposals for Eurasian economic integration—and the scientific and technological revolutions they require—and concludes: ‘Construction of the Land-Bridge is key to overcoming the underdevelopment of the Third World, and therefore, implicitly, to the end of oligarchism. The future of the world will only be a positive one, if the United States, and the West in general, return to the axioms of their 2,500 years of Platonic Christianity, and collaborate with China, which is currently searching to find the best in its 5,000-year history, especially the Confucian and neo-Confucian tradition.’



‘Behind the Notes’

Lyndon H. LaRouche, Jr., introduces Book II of the Schiller Institute’s ‘Music Manual,’ by identifying the agapic, anti-entropic quality of creativity, which is essential both to Classical music and other art forms, and also to progress in science, technology, and society in general. This quality of agapic anti-entropy, of ‘upward-directedness,’ is the very nature of the universe and of man himself.



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On the 200th Birthday of Franz Schubert

Schubert’s works display a unique sensitivity to the relation between the human singing voice and the poetic idea—an idea expressed in a particular form of musical ‘prosody,’ out of which motivic seed-elements emerge for further development. *Fidelio* interviews Dietrich Fischer-Dieskau and Norbert Brainin, two artists whose careers have been especially bound up with the genius of Franz Schubert.



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