

## **Economics: At The End of a Delusion**

by Lyndon H. LaRouche, Jr.

This report will be issued soon by the LaRouche in 2004 Presidential campaign committee, as the “spear point” of a Special Report that will also include a study by Richard Freeman of the American System methods used by President Franklin D. Roosevelt to get the United States out of the Great Depression; and an analysis by John Hoefle and Marcia Baker of how the U.S. economy today is following LaRouche’s “Triple Curve” collapse function.

January 12, 2002

We could recover successfully from the presently deepening world economic depression, but only if we now choose to do so. It is Hamlet’s challenge again: To be, or not to be. To accept the deadly heritage of our nation’s recently habituated folly, or to free ourselves from the deadly shackles of prevailing opinion, that we might ascend to the sublime, and triumph over the fatal error of our recent times.

On the time-scale of history, the terminal moment of our nation’s recent follies has now arrived. Now, if our nation is to survive, we must acknowledge, that the leading trends in policy-influencing opinion, over the recent thirty-odd years, have been cumulatively disastrous in their net effect. This is especially clear when the U.S. experience of 1966-2001, is contrasted with the effect of those different policies, which were characteristic of the earlier, 1945-1964 interval of post-war reconstruction.

We must admit, therefore, that, in this matter, as Shakespeare wrote, in another of his tragedies, the fault lies not in our stars, but in ourselves. The fault lies in the wrong-headed, chiefly post-1964 choice of the policies, which have become, during the recent three decades, the prevalent, accepted habits of belief and practice, among both policy-makers and the population generally.

Since the crisis-ridden 1962-1965 years, since approximately the time a post-Kennedy U.S.A. plunged deeply into its war in Indo-China, the world has





From 1929 to the beginning of 1932, as corporations collapsed into bankruptcy, delusions of “recovery around the corner” were as dominant in the United States as they are in early 2002. Franklin Delano Roosevelt’s 1932 campaign rallied the “forgotten man,” and faced the reality which all had to face by this 1933 scene.

drifted into a series of radical shifts in prevailing values of that moment,<sup>1</sup> a set of utopian illusions, contrary to any long-term economic reality. However, since these illusions have become the axiomatic, even hysterical standard for setting

1. I have outlined the 1962-1965 interval, and its effects, in earlier locations, such as “Zbigniew Brzezinski and September 11th,” *EIR*, Jan. 11, 2002; and “The Continuing American Revolution,” *EIR*, Jan. 18, 2002.

economic and related policy, this cultural-paradigm-shift has acquired the character of an unfolding mass-delusion.

The economic collapse so induced, is not merely an economic collapse. It is not something the “outside world” has thrust upon us. It is a product of the delusion working from inside the minds of most of the population of the United States itself. What we are experiencing, is not an intrusion by unwanted events. It is a product of what have become our popu-

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lation's widely accepted beliefs. Therefore, what you are suffering today is, taken all together, the experience of living inside the fog end of a popular delusion.

We have, still, even at this late date, the opportunity to survive, but, if that is to occur, two conditions must be met. First, we must make the implied sudden, and radical, changes in the cultural paradigms governing our policy-making. Second, we must do this promptly, without whimpering delays.

Merely typical of the more recent trends of wrong-headedness of official and popular opinion, are the disastrous effects of the 1995-2001 delusion called "the new economy," or the widespread damage done to the economy, and the great and increasing suffering spread among our citizens, by such delusions as belief in "free trade," "deregulation," "shareholder values," "out-sourcing," and "globalization."

Pity the stubborn fellow who says that "we must fix the system," but, like the IMF's Anne Krueger, insists that he will not permit us to act contrary to those infectious delusions which have been, for more than thirty years, the continuing cause of the present crisis. Typical are those who now concede almost anything else, but insist that we must not depart from the bounds of that present IMF, "floating-exchange-rate" system, which has been, in fact, the chief, continuing cause of the world's onrushing monetary, financial, and economic disaster of the past thirty years! If we were to leave such still prevalent, pathological assumptions as that untouched, no economic recovery of the constitution of the present society would ever become possible.

I do not propose that we should return exactly to the previous, 1933-1945, or 1945-1964 policies. I offer a much more modest, and realistic proposal. We must learn the lesson to be adduced from comparing an earlier success, with a subsequent catastrophe. We must apply that lesson in ways which include discarding the worst of those presently prevailing beliefs which were widely popularized during the recent thirty-five years. We must build upon the recognition of those achievements of that 1933-1964 recovery and growth, which led us out of an earlier economic depression and the after-effects of devastating world war.

But, we must also go beyond those precedents, to add some improvements which were either lacking in the general policies of the 1945-1964 system, or are peculiarly appropriate to the changed circumstances confronting us as a result of recent decades' developments.

## What This Report Contains

By the nature of the present world crisis, this report must include programmatic and analytic definitions of the problems and the methods of their solution. However, given the nature of competent knowledge of economics among legislators, economists, and citizens generally, the presentation of the essential elements of analytical and programmatic materials, must be supplemented by educational materials which are indispensable, if the reader is to achieve competent under-

standing of both the crucial features of, and solutions for this onrushing, global economic-social catastrophe.

If the reader is patient with me — when I am compelled to turn for a moment to relevant educational material which may, at some points, annoy him — we may hope that history will repay his or her courtesy to me, with the kindness of the benefit he or she will therefore receive from times to come.

This present report, taken as a whole, includes contributions by EIR economics specialists Richard Freeman, John Hoefle, and other contributors; particularly their study of some of the presently most relevant features of the successful measures of economic recovery from a general depression, which were taken under the leadership of President Franklin D. Roosevelt. A review of crucial features of the Franklin Roosevelt approach to recovery, is being supplied by those specialists.

In my part in this report, my assigned focus is limited, as much as is allowable, to those other, presently most crucial, issues of scientific method, which were either not included in that President's approach, or are changes which have not been taken into account until now.

My part features certain key excerpts from among my original contributions to economics, excerpts which not only make it possible to explain the roots of the Franklin Roosevelt reform's success from a scientific standpoint, but which also identify those features which must be added to our present monetary, financial, social, and economic policies, if we are to bring a successful economic recovery into motion, under the specific circumstances of the present crisis.

Meanwhile, it is most important for the reader, that I emphasize that which recent developments have demonstrated, and that in the most dramatic way. My qualifications for speaking with such a tone of authority on these matters, are outstanding in the world today. What I have proposed are bold, sudden, but indispensable measures; therefore, they must tend to meet stiff resistance, unless the depth and extent of my authority in such matters were clearly stated. Therefore, I must emphasize, that more than thirty years of my consistently successful long-range forecasting, has settled factually the crucial questions of the dispute between me and my opponents. The experiment has been conducted, over nearly two generations, and the results are conclusive, in my favor.

For related reasons, my part in this report must include emphasis upon certain notable elements of analytical method, which are uniquely the fruit of original discoveries made by me in the specialized field of the Leibnizian science of physical economy.<sup>2</sup> The combination of the present world crisis,

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2. The science of physical economy was originally developed by Gottfried Leibniz through a series of original discoveries of universal physical principle which he introduced during the interval 1671-1716. My intensive adolescent studies in Seventeenth- and Eighteenth-Century philosophy, made me a disciple of that great man's work, which led me, more than a decade later, into my own original, additional contributions to that field. Notably, the American System of political-economy, as associated with the work of Benjamin Frank-



The preceding, 1967-2000 take-down of American economic infrastructure and industrial capabilities, makes this crisis qualitatively different from the 1930s Great Depression. The tens of thousands of laid-off New Yorkers in late 2001 were not industrial workers as in the 1930s, but service workers, New York's industry having long since disappeared.



and the changes in the physical-economic conditions of the planet during the recent half-century, present the world with problems whose significance had been overlooked in earlier times. My own special contributions to the science of physical economy, are therefore an integral part of the new subject-matters which must be included within our nation's economic-policy deliberations.

### Worse Than 1930s Great Depression

For example. For reasons to be considered in the course of my account, consider the following.

At the present time of accelerating world crisis, the re-shaping of the interacting, but distinct factors in our national monetary, financial, and economic policies, must go beyond

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lin, Alexander Hamilton, the Careys, and Friedrich List, were largely products of the impact of Leibniz's work on those minds, each in his own time. The American System of political-economy has nothing in common with the teachings of John Locke and Adam Smith, but is directly opposed to both, on grounds of fundamental opposition respecting scientific principle.

what was done in organizing earlier recoveries of our national economy. Typical among the causes for the difference between the earlier and present world depression, are the following.

As I have emphasized in earlier locations, when the preceding world depression struck with global force, during 1929-1933, about a dozen years (less than a generation) had passed since the massive build-up, during the 1861-1917 interval, of European civilization's physical-economic growth of productivity, military power, and other technological advances.

Today, nearly thirty-five years have passed (nearly two generations) since the willful destruction of the per-capita physical-productive power of civilization began, a destruction typified, at the beginning, by the savagery wreaked upon the United Kingdom's economy by the first Harold Wilson government. The challenge today, is therefore of qualitatively greater relative magnitude and complexity than that confronting Franklin Roosevelt during the 1930s.

Apart from Harold Wilson's almost Luddite wrecking of

FIGURE 1a

A Typical Collapse Function

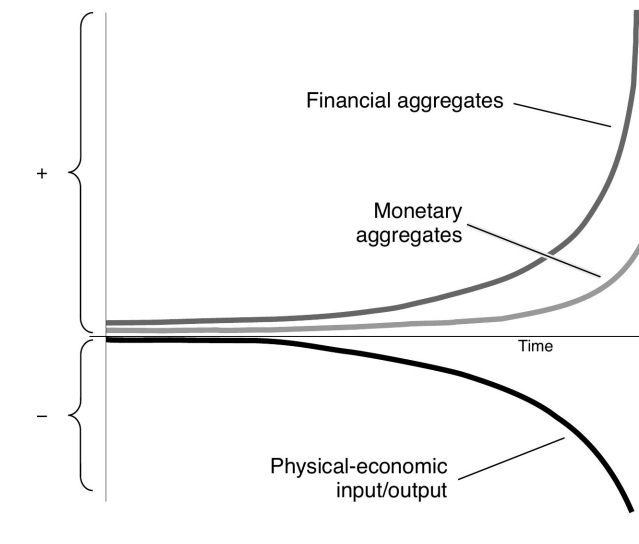
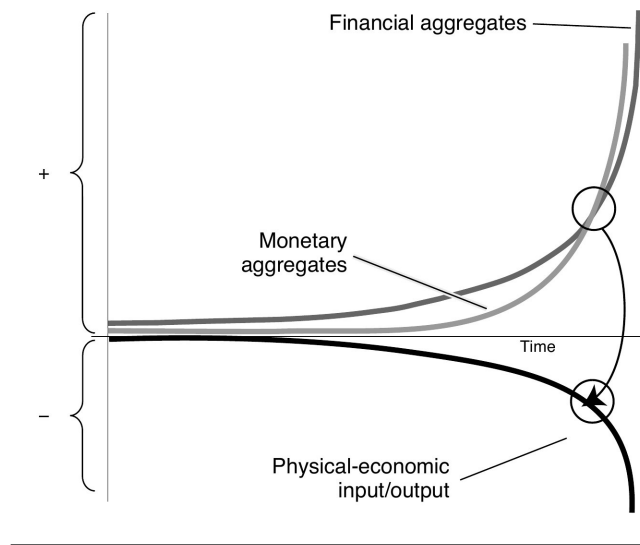


FIGURE 1b

The Collapse Reaches A Critical Point Of Instability



the British economy, the principal other initial damage to the 1945-1964 recovery of the U.S. and world economies, was introduced by Richard M. Nixon, beginning with the impact on national policy of his 1966-1968 campaign for the Presidency. Nixon's later decision of August 1971, wrecking the original Bretton Woods system, and putting the world under the ruinous lunacy of a floating-exchange-rate dictatorship, is crucial. His launching of the present, floating-exchange-rate monetary system, then, built into the present world monetary-financial system those axiomatic features which foredoomed it to collapse, unless those changes had been reversed.

The worst damage done to the U.S. economy itself, even worse than by the Henry A. Kissinger-controlled Nixon's follies themselves, was set into accelerating motion under the Zbigniew Brzezinski-controlled 1977-1981 U.S. Carter Administration. The latter administration, following the script which Britain's H.G. Wells had presented in his 1928 *The Open Conspiracy*,<sup>3</sup> willfully wrecked the largest ration of the physical and financial infrastructure upon which both the U.S. economic recovery from the 1930 depression, and the post-war growth had depended.

The world monetary-financial system is now hopelessly doomed. It can not be reformed; it can only be replaced, by returning to something like the original Bretton Woods system of the 1945-1958 interval. During the entire period, especially during the period since Alan Greenspan's predecessor Paul Volcker introduced the present policies of "controlled disintegration of the economy" into the Federal Reserve Sys-

tem,<sup>4</sup> the 1979-2002 addition of this set of axioms into the world monetary-financial system, by Volcker, turned monetary and financial policy into an engine for destroying the real economy. This was accelerated under Presidents Nixon, George H.W. Bush, and William Clinton, beginning with two notable pieces of 1982 legislation: Garn-St Germain, and Kemp-Roth. The real economy has been accelerating downhill ever since (Figures 1a and 1b).<sup>5</sup>

4. Fred Hirsch, former editor of the London *Economist*, writing in *Alternatives to Monetary Disorder* (New York: Council on Foreign Relations, 1977), affirmed that "controlled disintegration in the world economy is a legitimate object for the 1980s." Paul Volcker delivered the Fred Hirsch Memorial Lecture at Warwick University in Leeds, U.K., in November 1978, and began his speech by citing Hirsch's dictum on controlled disintegration. Campaigning as a U.S. Democratic Presidential pre-candidate, in New Hampshire, on Oct. 16, 1979, I denounced Volcker's October 1979 actions (published in *EIR*, Oct. 23-29, 1979). The Carter Administration's demolition of the U.S. economy was pre-designed by the New York Council on Foreign Relations' 1975-1976 *Project for the 1980s* (New York: McGraw-Hill, 1977), a project co-supervised by Carter National Security Advisor Zbigniew Brzezinski and Secretary of State Cyrus Vance.

5. The combined Nixon and Carter Administrations set into motion a set of relations among monetary, financial, and economic processes, which I have illustrated by the pedagogical Figure 1a: *The Triple Curve*, or "Typical Collapse Function." Speculative gains in financial markets are sustained by diverting monetary flows out of the real economy, into financial markets. This is sustained, increasingly, by looting the economic basis through large-scale attrition in basic economic infrastructure, and by driving down the net after-inflation prices paid for wages and production of operatives. Thus, we have a "hyperbolic" curve, upward, of financial aggregates; a slower, but also hyperbolic curve, upward, of monetary aggregate needed to sustain the financial bubble; and, an accelerating, downward, curve in net per-capita real output. This reflects the accelerated looting of the base (e.g., Garn-St Germain, Kemp-Roth), to sustain the financial bubble.

3. H.G. Wells, *The Open Conspiracy* (London: Victor Gollancz, 1928).

The impact of this long wave of post-1964 destruction of the physical economy of the U.S.A. and much of the world besides, has not only introduced policy-making problems of great magnitude. Also, as I shall indicate, the measures which must be taken, to ensure a durably successful economic recovery, will take the world into new categories of activity, including new approaches to managing the biosphere. These two, respectively quantitative and qualitative considerations, point toward problems of a type which might have been safely overlooked during earlier periods of successful economic growth. It is the urgency of these new policy-making problems, which most clearly defines my contributions to the practice of economic-policy-shaping as indispensable at this time.

I recast that just stated, crucial point, as follows:

Some of the new problems to be considered here and now, involve recently emerging strategic factors, and also strategic opportunities, which had not existed, at least not immediately, over the earlier course of the history of the world since 1776-1789. These new conditions of combined threats and opportunities, have become functionally unignorable under present circumstances. That is where my original discoveries in the field perform an essential role.

## Moving Safely to the Exits

The current stage of the world depression can be compared to a fire in a crowded theater. The economy in which you are seated, is that theater. Do not panic, but, rather, prepare to move, as I shall direct you, to the exits—that, in an orderly fashion, at a steady pace. First, as if to calm the nerves of the panicked fellow standing next to you, I must remind both of you, briefly, of my authority for dealing with crises of this specific type. “The doctor who specializes in such diseases, is,” so to speak, “here.”

To seek to calm the nerves of excitable fellows, I situate the discussion against the background of certain relevant, crucial patterns in developments over the period since the election-crisis of Nov. 7, 2000.

During the interval from U.S. Election Day, Nov. 7, 2000, through Jan. 15, 2001, I issued a series of forecasts, identifying both the issues of that election-crisis, and the expected character of certain crucial developments which would unfold during the first twelve months of the next President’s term. During that period, reports documenting those economic and political forecasts appeared in such readily available website and other locations as that of the weekly *Executive Intelligence Review*, and publications of my campaign for the Year

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During no later than 2000, the amount of added monetary aggregate reached the kind of cross-over point (Figure 1b) which set into motion the Weimar Germany hyperinflationary explosion of June-November 1923. When such a cross-over point is reached, the system is doomed to an early end, a threatened breakdown-crisis. At that point, the system must be overhauled in bankruptcy, most of the financial aggregate wiped from the accounts, and a new system supplied to give the economy itself a fresh start.

2000 U.S. Presidential nomination.<sup>6</sup>

Today, none of those recent forecasts, nor my earlier, documented long-range forecasts, dating back thirty-five years,<sup>7</sup> have ever been refuted by subsequent events.

A year later—November 2000-January 2001, through November 2001-January 2002—the majority of the same set of forecasters opposed to me then, are still echoed by most of the establishment mass-mediaocracy, repeating today the same kind of foolish propaganda they were emitting a year earlier, with but one curious point of emphasis added. Earlier, that crowd had promised an early rebound of a shaky economy’s financial and monetary markets; a year later, approximately the same crowd of forecasters is gushing out similarly dubious sophistries: But, the wildly hysterical mercenaries of Wall Street have added their non-sequitur. They have argued, that since the markets have taken a terrible beating over the course of the past year, now the markets have no room to maneuver; they have no way to go but up. These spinners conclude: the markets will surely go up, more or less spontaneously. With a gloat in their eye, they predict, either, that the upward bounce must come some time later this year, or, perhaps, the next.

Those who recall the 1930s, will be reminded of the 1929-1933 world depression, when, during the Hoover re-election-campaign of 1932, the Republicans and most Wall Street survivors promised the voters, “recovery is just around the corner.”

Now, today, the “new economy” has collapsed, Enron is a shambles, the role of the U.S. economy as the “importer of

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6. For the text of these economic and political forecasts, see the following issues of *EIR*: Dec. 1, Dec. 15, and Dec. 22, 2000; and Jan. 12, Jan. 19, Jan. 26, Feb. 16, and Feb. 23, 2001. *EIR*’s website address is <http://www.larouche.com>; the Presidential campaign site is [www.larouchein2004.org](http://www.larouchein2004.org). Most relevant for the topics being presented above, are the following items presented in *EIR*: “LaRouche Addresses Washington, D.C. Conference” (Nov. 14, 2000) on the subject of the implications of the Nov. 7 Presidential-election crisis (also webcast worldwide); LaRouche’s Dec. 1, 2000 “The U.S. Strategic Interest in Russia” (*EIR*, Dec. 15); LaRouche addresses a Dec. 12 Washington, D.C. seminar, “Presidential Election Campaign 2000: ‘The Fall of Ozymandias’ ” (also webcast worldwide); LaRouche issues his “The Demise of an Importer of Last Resort” (*EIR*, Dec. 23, 2000 and Jan. 19, 2001); LaRouche addresses a Jan. 3 Washington, D.C. seminar (also webcast worldwide), and issues his Jan. 4, 2001 announcement of his official Presidential pre-candidacy for the year 2004 (*EIR*, Jan. 12, 2001); “We Told You So: The LaRouche Record of Economic Forecasts, Fall 1999-Election 2000” (*EIR*, Feb. 9, 2001); LaRouche statement of Feb. 4 “On the California Energy Crisis: As Seen and Said by the Salton Sea” (*EIR*, Feb. 16, 2001); LaRouche Jan. 15 address, “The New Bretton Woods System: Framework for a New, Just World Economic Order” (*EIR*, Feb. 23, 2001).

7. In my conventions, a “short-term” cycle is one year; “medium-term” signifies three to seven years; “long-term” signifies a period of approximately eight to twenty-five years, or more. All my basic forecasting, since 1959-1960, has been long-term. My occasional forecasts of probable conditions to be reached within the short- to medium-term period ahead, have always been based upon a forecast for a long-term cycle. The reasons for those kinds of distinctions and forecasting practice, will be indicated within the body of this report.



last resort” for most of the world, has already collapsed, and will collapse much more. Unemployment zooms, as the increase in the number of employers going bankrupt, or hovering at the edge, also zooms. As governments turn to a next round of budget-cutting, they are shocked to discover that the loss of tax-revenue caused by the cuts, necessarily exceeds the amount cut from government expenditures. A sense of desperation spreads throughout the Americas, western Europe, Japan, Korea, and elsewhere.

All in all, this will look to some like a new world economic depression, like that of 1929-1933. In fact, it is much worse than was experienced in such places as the U.S.A., Canada, or Europe during the 1930s. Presently, if we put the special cases of Russia, China, and India to one side for the moment, most of the world has clearly entered the beginning-phase of what some early Twentieth-Century economists discussed under the academic heading of an hypothetical general breakdown-crisis.

### Quantitative and Qualitative Recovery Measures

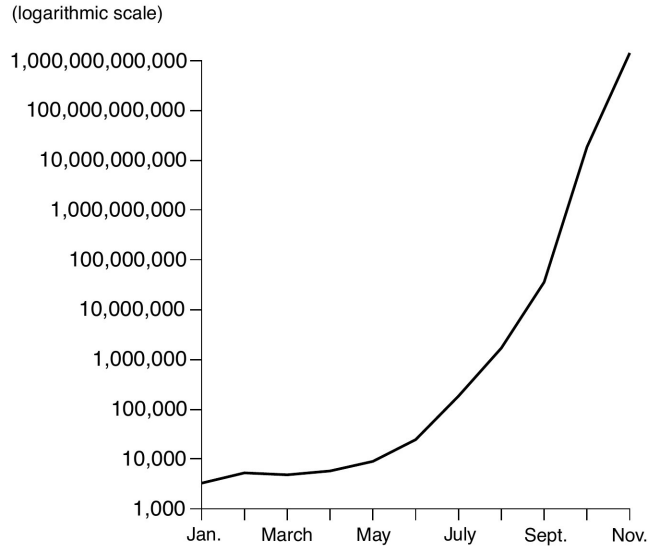
When compared to today’s crisis, the depression of the 1930s seems relatively a problem of more sharply reduced quantity of economic activity. It would appear to those earlier economists, that, as in the case of a depression like that of the 1930s, recovery could now be effected by reversing trends in generation and flows of credit into investments in increased quantities of existing categories of physical output. Those opinions are far too optimistic. The present crisis, is essentially qualitative. In the case of the present collapse of the world’s monetary-financial system, the distinction between “quantitative” and “qualitative,” is crucial.

In the first, simpler case, a quantitative solution for an economy may be more or less adequate, if putting the combination of bankruptcy-reorganization of the monetary-financial system, combined with addition of protectionist measures, could utilize state-created credit to bring the reorganized economy up to a breakeven level, merely through reactivating existing productive and related physical-economic capacity.

In the second case, the combination of monetary-financial reorganization and credit-expansion, does not rise to a sufficient level of combined active and idled physical-productive capacity to reach a breakeven level of real turnover. No solution is available within the limits of existing categories of such investment, without radical structural changes in the composition of categories of investment and production.

A glance at the difference between the first, pre-war phase of the U.S. recovery measures of the 1930s, and the war-mobilization phase, helps to clarify the meaning of a distinction between a quantitative and qualitative form of economic depression. The examination of those successive intervals affords a first approximation of the distinction between quan-

FIGURE 2  
Weimar Hyperinflation in 1923: Wholesale Prices (1913 = 1)



The historical result of such a point of instability in the collapse-process: the hyperinflationary outburst in Germany, May-November 1923.

titative and qualitative cases.

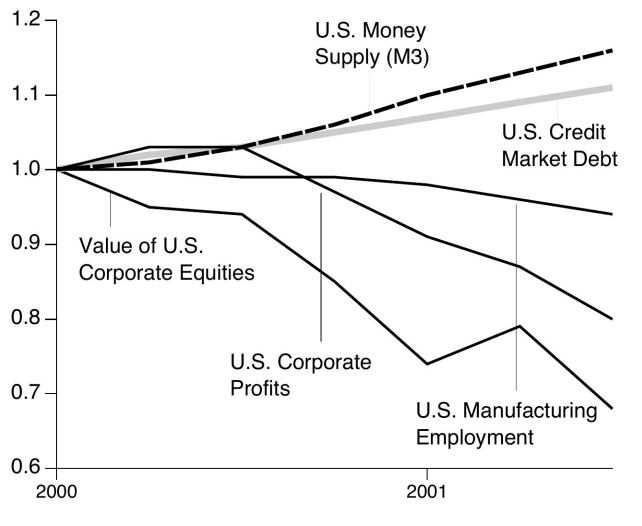
Even into the war-mobilization phase, which began in the United States even prior to the Nazi invasion of Poland, the U.S. economy was still using up significant rations of inventories of semi-finished goods dating from prior to October 1929. Even during that period, large-scale public works programs of more or less qualitative significance, such as the TVA program, did build up the base on which the later, relatively explosive war-time economic expansion was based. Indeed the war-time mobilization would not have been possible without such public works and related investment.

The explosive growth in the economic-recovery program was a characteristic of the shift of U.S. economic-policy priorities to a national “arsenal of democracy” mission-orientation. For those of us who were adults during the 1940s and 1950s, the most accessible “marker” of this “arsenal of democracy” phase, was the U.S. government’s production and continued ownership of a vast inventory of machine-tools, which were, in large part, leased to private contractors as part of the package for military and related production. The early super-achievement of President Roosevelt’s pre-announced targets for levels of production of military aircraft, is typical of the phenomena.

It was the combination of infrastructure build-up, heavy rations of capital-intensive production investment, and not only a massive decrease in unemployment, but an accelerating

FIGURE 3  
**U.S. Economy's 'Triple Curve' Collapse Function, 2000-2001.**

(Indexed To 2001/1Q = 1.00)



Sources: U.S. Department of Commerce, Federal Reserve.

Since no later than 2000, U.S. monetary printing has grown at a rate faster than the financial assets the money-printing was trying to hold up. Meanwhile, the underlying real economy has fallen at an increasing rate: this is LaRouche's Triple Curve Collapse Function.

up-shift in technological categories of employment, which characterized the qualitative transformation of the U.S. economy, upward, over the 1939-1945 interval, even under the condition that about 16 millions of us were drawn out of the labor-force for military service.

I shall return to examine this matter of qualitative recovery-measures in more precise terms, at an appropriate, later point in this report. At the present moment, my point is to illustrate the distinction between merely quantitative and qualitative recovery-measures; and that, with the relatively most accessible choice of real-life clinical case.

Today, a general, qualitative breakdown-crisis is already darkening the horizon. To illustrate the nature of that challenge, I list a number of typical actions to be taken to halt the depression and launch a self-sustainable recovery.

1. We must a.) put the international monetary-financial system into immediate, governments-dictated reorganization; b.) restore a fixed-exchange-rate system; c.) establish exchange, capital, financial controls, trade controls, and fair-trade forms of protectionist measures internally and externally; d.) increase drastically rates of taxation on financial capital

gains, and substitute production- and technology-oriented medium- to long-term investment tax credits to entrepreneurs; e.) generate large masses of government-created credit at rates between 1-2% for, chiefly, a combination of entrepreneurial investment production and infrastructure investment; and f.) implement a general bank-reorganization program, which keeps needed banks performing essential functions for the community while under even drastic financial reorganization.

2. We replace "free trade" with the promotion of protected hard-commodity international trade, as part of the promotion of a global, long-term economic-recovery effort.
3. We must introduce the economic equivalent of a high-technology-oriented "arsenal of democracy" recovery program, both in the domestic economy and in world trade, to provide the qualitative dimension needed to reverse the monstrous loss of technologically progressive, physical-productive capacity and potential—a loss which has accumulated in the world as a whole during the recent thirty years, especially the recent quarter-century.

We had better take such measures, to stop that process of collapse before it hits with irresistible, crushing force.

With the guidance and backing of the world's leading economist of that time, Henry C. Carey, President Abraham Lincoln made possible the U.S. economic miracle of 1861-1876, as Franklin Roosevelt, at a later point, saved the U.S.A. Under the impact of Roosevelt's intervention, the U.S.A., and the world, avoided the risk of a slide into an actual breakdown-crisis.

Nonetheless, as I have already indicated above, I say again, that there are certain crucial points of difference between the challenge of organizing an economic recovery under conditions of today's threatened breakdown crisis, and the challenge of the world depression successfully met by incoming President Franklin Roosevelt. I shall deal with the most typical such new challenges, in my section of this report.

By this means, by introducing science to replace the forms of mysticism which have become popular among most U.S. academic economists and their dupes, we aim to free the people of the U.S.A., and other nations, from the deadly grip of that delusion which has brought those dupes, like fabled lemmings, to the brink of catastrophe. Whether we purge our nation's policy-shaping of those popularized follies, or the nation destroys itself by clinging to those follies, we may safely forecast the end of a delusion, either way: by ridding the victims of their fatal follies of belief; or, by witnessing the institutions eliminating the carriers of those delusions, themselves.

The ball is in your corner.

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## 1. What Is Economics?

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No rational discussion of “economics” is possible, unless we define what that term should signify. Unfortunately, especially today, after the so-called “cultural paradigm-shift” which erupted during the late 1960s, most of today’s generally circulating definitions of the term, are proffers of allegedly “self-evident” gobbledegook, which are not designed in a way which might provide the hearer with a sense of functional correspondence to reality.

The first thing to know, is that, contrary to some ivory-tower “true believers,” the subject of economics did not exist in any rational form prior to what is known, alternately, as the Fifteenth-Century, or “Golden” Renaissance. It was that Renaissance which defines the difference, between, the essentially medieval, A.D. 300-1400 history of European civilization, and its post-1400 phase, as modern civilization.<sup>8</sup> Economy began with the birth of the modern nation-state, over the course of the Fifteenth-Century, Italy-pivoted Renaissance.

By national economy, I mean a continuing process of durable improvements in the potential relative population-density of the whole population and its posterity. By economics, we should signify the existence and use of some scientifically demonstrable principle, which permits us to forecast efficiently the connection between today’s practices and the worsening, or improvement of the relative well-being of the present population and its posterity, as a whole, a generation or two ahead.<sup>9</sup>

“Economic Forecasting,” properly understood, signifies assuming accountability, in the present, for the future consequences of the choices made today. Without such accountability, there is no morality worthy of that name. That requires the existence of a form of government which holds itself efficiently accountable for ensuring such improvements as are

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8. Although, as Professor von der Heydte stressed (1952), the emergence of the struggle to establish modern society dates from such points as the work of Abelard of Paris, the ideas associated with the work of Frederick II and Dante Alighieri, were not brought into their political realization until about the time of the emergence of the great Platonic school at Padua at the turn into the Fifteenth Century.

9. The reader should be forewarned, that I do not accept the definition of the U.S. economy as a “capitalist economy.” Since the close of the Eighteenth Century, especially since the collapse of the Soviet economy, the planet has been dominated by a conflict between two persisting, leading forms of national economy. On the one side, there has been what Alexander Hamilton and others defined as “The American System of political-economy.” On the opposing side, the principal, perspective adversary of that American System, has been the dogma and practice of Lord Shelburne’s British East India Company’s Haileybury School. Today, when the term “capitalist system” is used, that usually signifies “the British system,” as it did for the Karl Marx of his *Capital*. I recognize the contrary, American System, as the natural expression of the healthy form of the economy of a sovereign nation-state republic, as I qualify the functional significance of that definition at appropriate places below.

measurable in terms of their per-capita and per-square-kilometer physical effects.<sup>10</sup> In applying that definition of “economics,” it is not sufficient that that government should intend to bring about such beneficial results; the intention must be an efficient one.<sup>11</sup>

Societies qualifying as such economies did not exist in ancient or medieval history. Those who ruled then, used the subject populations as virtual human cattle, for the advantage of the ruling oligarchy and its lackeys. For them, as for the notorious feudalist Dr. François Quesnay, the fruit of society belonged, by divine right, to the overlord; the rights of the toilers were limited to the same kind of rights a farmer accords to the lower forms of life he hunts down, or maintains, or culls as cattle. That oligarchical system is also typical of the philosophy of John Locke, and the radical-positivist<sup>12</sup> definition of “shareholder value” recently upheld by the majority of the U.S. Supreme Court. The notion of accountability for the general welfare of a human population, as specifically human, as a whole, did not exist.

Although the first reasonable approximations of true nation-state economies, were those of France’s Louis XI and England’s Henry VII, the adoption of the set of universal principles on which the modern sovereign form of nation-state and its economy have been based, the notion of the general welfare, had been already brought into being, earlier in that same century, largely through the leading role of Cardinal Nicholas of Cusa, as typified by 1.) His *Concordantia Catholica*, which set forth the principled argument for replacement of the imperial system as it existed under feudalism, with a community of principle among individually sovereign nation-states; 2.) His founding of modern experimental physical science, as merely typified by his *De Docta Ignorantia*; 3.) His role in pulling together the circle of scientists and other influentials, on whose work Columbus, among others, depended, for the wave of great trans-oceanic explorations launched during the latter decades of that century.

The pivotal principle of law, upon which that coming-into-being of the sovereign nation-state republic was premised, was the adoption of the doctrine of natural law known variously as the general welfare or common good, as typified by the central argument of law later expressed by the 1776 U.S. Declaration of Independence, and as stated explicitly as the fundamental law of the U.S.A., in the Preamble of the

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10. As qualified later in this report, I define “physical effects” from the standpoint of what Vladimir Vernadsky identified as the Noösphere. I mean the measurable effects on the physical domain which are categorically attributable to either an abiotic, living, or cognitive phase-space. The standard of proof for each case, is that which has been defined at length by Vernadsky.

11. The applicable definition of “physical” for this purpose, is broadly the same which Vladimir Vernadsky employed in defining the Noösphere. See Lyndon H. LaRouche, *The Economics of the Noösphere* (Washington, D.C.: EIR News Service, 2001).

12. E.g., “neo-Ockhamite.”





“Fascism is typified today by such lackeys and cronies of the late Professor William Yandell Elliott as” (left to right) Zbigniew Brzezinski, Samuel Huntington, Henry Kissinger.

U.S. Federal Constitution.

Although this involves subject-matters which are, in part, lodged in the history of pre-modern centuries, even the mere right to existence of the institution of the modern nation-state, has never been uncontested, even within globally extended European civilization, up to the present day. Brutish cultural relics of the cultural heritage of the ancient Rome and medieval feudalism, have more than merely persisted into the Twentieth Century; the effort to reverse the clock of modern history, back to brutishness, has been the dominant post-World War II trend in Anglo-American policy-shaping for about a half-century. The U.S. wars against its historic adversary, the British monarchy, are an example of the conflict between the U.S. defense of the principle of the general welfare, against that modern relic of the Norman-allied, imperial maritime power of Venice’s pro-feudalist rentier-financier policies, the policies of the British monarchy since 1714. The Preamble of the Constitution of that British puppet, the Confederate States of America, for example, stressed the suppression of the principle of the general welfare, in favor of the immoral John Locke’s defense of slavery.

Today, the depraved relics of Europe’s ancient and medieval past, are resurgent in such forms as so-called “globalization,” “shareholder value,” “the rule of world law,” and the effort to establish a military dictatorship in the form of universal fascism.<sup>13</sup> Fascism is typified today by such lackeys and cronies of the late Professor William Yandell Elliott as Henry A. Kissinger, Zbigniew Brzezinski, and Samuel P. Huntington. These are typified today by family interests, and associated major law firms, gathered around such influential institutions as the H. Smith-Richardson, Olin, and Mellon-Scaife

13. Cf. Michael Ledeen, *Universal Fascism: The Theory and Practice of the Fascist International, 1928-1936* (New York: H. Fertig, 1972).

foundations, and associated circles such as the Foreign Policy Research Institute, the American Enterprise Institute, the Cato Institute, and the RAND Corporation. That fascist ideology is also rooted axiomatically in the doctrines of the Mont Pelerin Society, the Heritage Foundation, et al.

Typical, as I have summarized this in earlier reports on the implications of the celebrated events of Sept. 11, 2001, are the views expressed by the collaborators Zbigniew Brzezinski, Samuel P. Huntington, and British Arab Bureau veteran Bernard Lewis. Inside the United States itself, a new, utopian military doctrine, has sought to destroy the legacy of that citizen-soldier typified in military history by Germany’s Gerhard Scharnhorst, and the republican U.S. legacy of Benjamin Franklin, Abraham Lincoln, General Douglas MacArthur, and President Dwight Eisenhower.

As Huntington speaks for today’s often explicitly self-described universal fascists generally, the Huntington-Brzezinski image of the role of the military, harks back to the genocidal practices of the Roman legions and the Nazi Waffen-SS: legions of the professional warrior, recruited from assorted nationalities, as the instrument of death deployed by a global neo-Roman, universal fascist tyranny, which hunts, herds, and culls populations as the Nazi Waffen-SS echoed the Roman legions in this genocidal practice.

These universal fascists have appeared in the Anglo-American sphere as chiefly products of the process out of which the British Fabian Society emerged. The most influential such ideologues include Thomas Huxley’s Golem, H.G. Wells, whose 1928 *The Open Conspiracy* typifies the way in which the Fabian method promotes the universal fascist influences expressed by such Wellsian fanatics of the Brzezinski circle as the former U.S. Secretary of State Madeleine Albright, who confessed herself a Wells follower, speaking as Secretary of State, openly, in a 1999 public address. The

influence of Bertrand Russell, and his Unification of the Sciences project, is an integral part of that same campaign for universal fascism detailed, step by step, in Wells' *The Open Conspiracy*.

The principal target for destruction chosen by these contemporary universal fascists, is always the modern sovereign form of nation-state republic, and the doctrine of the general welfare or common good. It is sufficient to study *The Open Conspiracy*, and to note that Bertrand Russell signed on to that policy publicly, to understand how the influences of universal fascism work intellectually, as they permeate the departments specializing in the so-called "social sciences," in academic and related life in the United States and its government institutions today.

In summary, these universal fascists, with their present, frantic search for an "integralist" "pagan ethic," are the modern expression of the attempted resurgence of the model of the ancient Roman and kindred empires, and of the worst of medieval Europe's history. The essence of the movement for universal fascism, typified by Brzezinski et al. within the U.S.A., is a movement whose purpose for existence is to eradicate the existence of the modern nation-state from any and all parts of this planet, and to replace the nation-state with world-government over the population-controlled inhabitants of a global, dehumanized zoo.

There is no significant danger to civilization on this planet today, which could not be made manageable, were this threat to be removed. To paraphrase a famous Harvard professor, those who do not wish to recognize my emphasis upon history, may be forced to relive the very worst part of what they, who presently profess "I don't go there," prefer to ignore.

Therefore, all competent policy assessments of the present world economic situation, that of the U.S.A. itself most notably, are rooted in a grasp of the continuing historical origins of modern society. The following brief summary of the point elaborated in other published locations, should therefore be sufficient here.

During the pre-Fifteenth-Century history of Europe, especially since the emergence of imperial Rome out of the its military conquests during the same general period as the close of the Second Punic War, the power to make law came to be invested in a figure selected to perform the function of a pagan Pontifex Maximus, an emperor whose function was centered in his authority to arbitrate disputes respecting essential matters of doctrine and related practice among the diverse religious and cultural groups of which the subjects of that pantheonic tyranny were composed.<sup>14</sup> In other words, like many of

14. Friedrich Freiherr von de Heydte, *Die Geburtsstunde des souveränen Staates* (Regensburg, Germany: Druck und Verlag Josef Habel, 1952). The actually adopted form of the Roman imperial model, was the outcome of crucial, seminal negotiations between the faction-leader Octavian (the later Emperor Augustus) with representatives of the cult of Mithra, in discussions held on the Isle of Capri. It was this alliance which enabled Octavian to defeat Anthony and Cleopatra, and found the empire on that basis. The alliance of

today's would-be busy-bodies setting themselves up as the arbiters of peace, the Pontifex Maximus imputed to his own person the right to "play God." The Roman Empire, in particular, was thus maintained as a permanent state of warfare, representing a process of hunting and culling the ranks of, even exterminating, some of the sundry religious and cultural groupings, either within the Empire or at its periphery, as the associates of Brzezinski and Huntington adhere to such perspectives today.

This state of imperial depravity of ancient Empires, such as Babylon and Rome, was also characteristic of the ultramontane faction of medieval society over the interval A.D. 300-1400. It was this characteristic of medieval Europe under domination of the Venice-Norman alliance, which led into that vast depopulation and lunacy of the mid-Fourteenth-Century "New Dark Age," a dark age of genocide which one Twentieth-Century historian has characterized as "a distant mirror" of that troubled century's likely outcome.<sup>15</sup>

By its essential implications of doctrine and practice, the oligarchical interest represented by the function of Pontifex Maximus, divided the subjects of that imperium between the oligarchs and their lackeys, on the one side, and the mass of the subject population, the human cattle, on the other. The human cattle fell into two grand sub-classes, herded and hunted (e.g., "rogue") cattle. Thus, the imperial law of the ultramontane tradition, by reducing herded and hunted subjects to cattle, reduced the rulers themselves, including the Pontifex Maximus himself, to the axiomatically implied status of a beast like that which Britain's Thomas Huxley claimed to be, a beast from H.G. Wells' *Island of Dr. Moreau*.

Thus, in an imperial, or kindred social order, the mass of the human population, of all categories, was herded and culled according to the perceived interest, or merely the caprices, of the ruling authority. Thus, in imperial society (including all those societies called variously "ultramontane" or "integralist," or "globalized"), the people exist for the convenience of the ruling power. Whereas, in the modern form of sovereign nation-state, as prescribed by our Federal Constitution, the state exists for the promotion of the welfare of the present and future population as a whole.

I emphasize the most crucial point of relevance for shaping contemporary economic policies.

The state must therefore be subject to control by the principle of its obligation to serve the promotion of the general

the Roman legions with the cult of Mithra was certified by the establishment of Capri as the hereditary property of the reigning Emperor, until the transfer of the title approximately a half-century later. It is this tradition among the imperial legions, which forms the basis for both the Nazi Waffen-SS and the kindred philosophy of the U.S. military utopians today. Ironically, according to usually reliable sources on such matters, it was the cult of Mithra which invented the theological doctrine of the Hell unknown to the Hebrew theological tradition.

15. Barbara Tuchman, *A Distant Mirror: The Calamitous Fourteenth Century* (New York: Alfred A. Knopf, 1978).

welfare, to serve the common good. The moral right of the government to exist, is conditional upon its efficient promotion of the general welfare of all of the present generations and their posterity. No type of rule of law may be tolerated, which violates that principle.

That notion of law premised upon the notion of the common good, is the distinction of civilized government in modern society. That is the distinction which defines the modern sovereign nation-state republic; that distinction was the essence of the continuous quarrel between the patriots of the United States and the British monarchy over the interval 1776-1901, and the quarrel between President Franklin Roosevelt and the British monarchy's Prime Minister Winston Churchill, during World War II. That is the essential difference between the American System of political-economy, as exemplified by the work of Hamilton, the Careys, List, and Lincoln, on the one side, and the neo-Venetian, British rentier-financier system of Adam Smith, Jeremy Bentham, and the Mont Pelerin Society, et al., on the other.

This function of the principle of the general welfare, is no mere precept, no mere tradition. It has a functional basis in the essential distinction between a man and an ape, between the human individual and all other living species. This connection is, as I shall indicate here, the key to understanding the physical principles of economy on which the entirety of a competent practice of statecraft, including economics, depends in an efficient and fundamental way.

For reasons included in this chapter of my report, an efficient understanding of economics, and of the economics issues underlying the present world crisis, could not be attained within that medley of mysticism and reductionist fanaticism which pervades today's usually taught classroom instruction in, not only economics as such, but also much of the teaching of mathematics in particular and science in general. Therefore, the required understanding of the problems of policy-shaping posed to us by the present crisis, must include emphasis upon certain issues of scientific method. The feature of economic science on which I have placed emphasis in this chapter of the report, is the deeper practical implications of the notion of physical-economic cycles, especially long-range cycles.

## A. The Physical Basis for Economic Cycles

To serve the stated purpose of this report as a whole, I must now turn to define what I mean by the practice of a science of physical economy. I must show why and how that science is indispensable for understanding the predominant influence of long-range and other physical-capital cycles, in steering the evolution of the economy, from point to point, within such governing cycles.

Economics, when properly defined as a branch of physical science, should be understood in terms of principles defined

in the same way universal physical principles are, first, hypothesized, and, later, proven experimentally, in any competent form of physical science.<sup>16</sup> In practice, the measurements to be made for society as a whole, are to be made in reference to general cycles, long-ranging cycles, of not less than one to two generations. This means, that the measurement of performance in periods of less than a generation's span, must apply to the short-term measurements in economy, echoes of those same methods Kepler used for astrophysics, in connection with his original discovery of a principle of universal gravitation.<sup>17</sup>

So, Kepler defines the universal physical principles of organization of the Solar System, from the standpoint of the long-range cycles which are commensurate with completed orbits, and with the cycle of those combined planetary, lunar, and comets' orbits, of which latter the System as a whole is visibly composed. The motion within any local, much shorter interval, must be understood as an expression of the orbit as a whole; not, contrary to today's typically foolish Wall Street statistician, the orbit as the expression of the cumulative effect of localized motions. This is as true for economic cycles, as it is for Solar ones. This approach to the principle of cycles, was, incidentally, the method underlying and permeating the original, 1676, first published announcement of the discovery of the calculus, by Gottfried Leibniz; therefore, the principle I am invoking here, is by no means a Johnny-come-lately innovation, but is an elementary, and solid matter of scientific method, as it should be taught in all respectable secondary schools and universities today.

The long cycles built into the top-down design of the Solar System, do have a determining influence upon the circumstances in which life within the Solar System depends; but, for reasons I shall identify here a bit further on, the authority of those cycles does not prevent man from changing even the Solar System itself, including changing it for the better, if but only gradually, and over very, very long periods of sustained action, as living processes have transformed the Earth into a Biosphere.

The widely accepted methods among today's economists, of measuring economic cycles in a simple statistical way, commit the same blunder which Kepler exposed as the common, anti-scientific error of the earlier astronomical dogmas

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16. In applying the notion of physical science to economics, I signify the connections between science and culture which I have taken up in comparing my work in the science of physical economy with the definition of the Noösphere introduced by Vladimir Vernadsky. See, for example, Lyndon H. LaRouche, Jr., *The Economics of the Noösphere*, op. cit. I emphasize, that Vernadsky, while defining the principle of abiotic, living, and cognitive processes, as reflections of mutually distinct classes of universal physical principles, nonetheless based the notion of scientific proof of principle for living and cognitive processes on necessary and sufficient evidence based on conclusively demonstrated paradoxes presented by effects of life and cognition on the abiotic domain.

17. As documented in Kepler's 1609 *The New Astronomy*.

of such diverse authorities as the Aristotelean Claudius Ptolemy, Copernicus, and Tycho Brahe.<sup>18</sup> The use of the mere describing of nature as a substitute for discovering the underlying universal physical principles at work, is the typical folly of those intellectually impaired statisticians who pretend to be economists, a folly abhorred in competent modern astrophysics since Kepler.<sup>19</sup> It is for the reason of their refusal to recognize this issue of method, that all the principal forecasters opposing my forecasts, have been, at their best, simply incapable of providing competent projections of their own.

The source of the failure of those forecasters, has been, to a large degree, the incompetence of the way in which economics has usually been taught in all leading universities, and often practiced in the profession in general. For example, if they had studied and understood Kepler's founding of the first approximation of a comprehensive mathematical physics, and the developments in the same direction, through Leibniz, Gauss, and Riemann, et al., after Kepler, they would not have produced the often catastrophic effects typical of their work on business cycles, and the continuing influence of that misguided work on policy-shaping today.

The importance of Kepler which must be recognized among economists today, is that he was the founder of the first successful effort to establish a comprehensive form of mathematical physics, the first to establish a comprehensive method of attack which freed science from the ivory-tower mathematician's blackboard, and to civilize mathematics by bringing it into the real world, the world of universal physical principles, rather than the purely imaginary world of abstract ivory-tower mathematical speculations. The first discovery of an experimentally defined principle of universal gravitation, by Kepler, is the point of departure from which all subsequent progress in developing a comprehensive form of modern physical science has emerged. So, it is inevitable, that fertile scientific minds are impelled, repeatedly, to return to Kepler's arguments, as Albert Einstein did in his reappraisal of the importance of the discoveries of both Kepler and Bernhard Riemann.

Kepler recognized certain anomalies in the orbit of Mars, which had been overlooked by Brahe. This led him to recognize, not only that the Mars orbit was elliptical in general form, but that the Sun was located at one of the two focii of that ellipse. Kepler observed that the measurements made by aid of his normalization of an observed orbit, precluded the possibility of predicting, statistically, both the position and velocity of the planet's motion within an immediately subsequent portion of the orbital cycle as a whole.

This required throwing away all as-if-at-the-blackboard varieties of Euclidean mathematics, such as those used by

18. Ibid.

19. Thus, Mrs. Joan Robinson rightly ridiculed the foolish, but dangerous Professor Milton Friedman, as an apostle of post hoc ergo propter hoc. Friedman is the sort of menace his victims might prefer to curse in Latin.



“The use of the mere describing of nature as a substitute for discovering the underlying universal physical principles at work, is the typical folly of those intellectually impaired statisticians who pretend to be economists, a folly abhorred in competent modern astrophysics since Kepler.” Here, a statue of Johannes Kepler in Weil der Stadt, Germany.

Ptolemy, Copernicus, Brahe, Galileo, et al. For Kepler, there must be a physically efficient intention embedded in the Solar System, which determined the characteristics of the orbit. By that use of the notion of intention, Kepler signified the existence of some corresponding, experimentally demonstrable, efficient, universal physical principle, such as his original discovery of universal gravitation. This notion of a universal quality of intention, by Kepler, has been the definition of an experimentally validated universal physical principle, among all competently educated persons, ever since.

Therefore, as I shall summarize the case here, anyone who would wish to become a competent economist, should study the pivotal ontological paradox, which led Kepler to a crucial discovery of a universal physical principle, in this case, gravitation.

Kepler recognized, that although the orbit as a whole was observed and knowable with experimental precision, the velocity and position of the planet at any time could not be predicted as a simple statistical projection of its immediately

preceding action. Kepler's measurements led the way to Leibniz's future development of the calculus, by showing that the orbit fit such rules as "equal areas, equal times," for the case that the angular measurement was made with respect to the relatively fixed position of the Sun at one focus of the ellipse. The measurable fact of "equal areas, equal times," pointed to the existence of an efficient agency existing beyond statistical comprehension of the mere moment-to-moment motion observed for the planet itself. Kepler's development of the concept of the relationship among the harmonic ratios of orbits, in the ordering of the Solar System as a whole, was a continuation of that same method and approach.

The same class of problem confronts the attempt to solve the mystery, concerning the way in which long-term economic cycles interact with short-term changes in economic policy. In examining long- to medium-term economic cycles, we must adduce the demonstrable physical principles characteristic of each phase of the cycle, and assess the local phase of the ongoing process from the standpoint of an experimentally-based insight into the systemic characteristics of that process which defines the cycle as a whole.<sup>20</sup>

To restate that point with an eye on the referenced work of Kepler, there is something outside, "behind" the sometimes apparently simple statistical projection of trends, which controls, and accounts for the ironical, ultimately contradictory relationship between short-term performance determined statistically, and medium- to long-term cycles. The challenge presented is, therefore: Is there some ontologically paradoxical, undeniable empirical evidence, which points our cognitive powers toward an appropriate search for a relevant hypothesis, which might, in turn, lead us to an experimentally defined universal physical principle? That "external" action by a principle is embodied within the cycle itself, that more or less in the same sense that it is the orbit as a whole which determines the short-term motion of the planet. In astrophysics, or economics, it is a universal physical principle, which is both embodied within the cycle as a whole, and which, pending the efficient introduction of a newly added long-term cyclical principle, subsumes the idiosyncrasies observable, in effect, at each moment.

Therefore, in physical science, and the methods of mathematics appropriate to that science, the secret of competent forecasting in general, is the same which Leibniz developed in his unique, original discovery, and continued refinement of the calculus. This was a discovery which met precisely the challenge which Kepler had bequeathed to future mathematicians. We must discover the cycle, first, and then assess the local action within that functional frame of reference.

It is the long-term cycles which are of the greatest importance. Therefore, in all my forecasting, I have always fore-

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20. For relevant readers: I am using the term "characteristic" here in the strict sense of the usages of Gauss-Riemann. I emphasize the highlights of some extremely relevant implications of that usage, at a relevant later point here.

casted from a long-range cyclical standpoint, as Gauss, in his development of his general notions of curvature, and Riemann later, successively, perfected this conceptual approach for mathematical physics in general. Reliable long-range economic forecasting depends upon that conceptual approach.

Yes, the human will does intervene in this: but how? Effective intervention occurs by acting, in effect, upon the long-range economic cycle itself, rather than upon the local interval of that process! The purpose of economic forecasting, is to discover how to intervene, in the relatively short term, if possible, to change the characteristics of the long-range cycle in which events are currently trapped. By changing the characteristics of the long-range cycle, we are able to change the effect which the changed long-range cycle now imposes upon the local interval.

To illustrate that point:

When we discover a new universal physical principle, and then apply that principle intentionally to a process previously defined in terms of earlier discoveries of such principles, the addition of that new universal principle, changes the characteristic action in every interval of the process. It changes the characteristic effect of willful forms of human action upon the universe. The development of the notion, by Leibniz and Bernoulli, for example, that isochronic pathways in physical processes are implicitly those of a catenary, rather than, for example, a cycloid, typifies the mathematical-physical idea of applying a new notion of extended magnitude (i.e., a universal physical principle) to change a previously assumed characteristic of a process.

That is the key to any competent appreciation of the role of scientific and technological progress, in bringing about a medium- to long-term trend of increase in the productive powers of labor, as this effect is expressed in the short to medium term. This is, in fact, the only true source of the increase in the physical-economic rate of profit.

That, in short, is what I mean by changing the cycle as a whole, as the way to alter the characteristic behavior in the localized part of that process. That is the kind of systemic effect we are attempting to induce, when apply a new principle, expressed as a technology, to an already established productive process or product design. I repeat, for emphasis: This kind of transformation, in characteristic, is the only true source of physical-economic profitability of an economic process. The complex of principles expressed by the process, has the quality of a more or less long-range cycle. By integrating an added principle, through the medium of new technology, we transform the characteristic of that cycle, and, thus, transform the characteristic action in the local situation.<sup>21</sup>

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21. This defines the indispensable function of the notion of Riemannian manifolds in addressing the subject of economic cycles. The efficient introduction of a new universal physical principle, changes the physical geometry of the economic cycle as a whole, thus changing the characteristic of the system, and thus changing the value of the local action.



A long-term cycle is the reflection of the action performed by a complex of universal physical principles upon the universe. In scientific and technological progress, we may correct erroneous assumptions from the past, but, usually, in practice, we do not otherwise change any of these principles; we bring additional such principles into play voluntarily, just as we do through the successful discovery and application of any previously unrecognized universal physical principle. Thus, by bringing an additional such principle into play, thus altering the long-term cycle, we alter the characteristic quality of action, the systemic quality of action, in the short term. In other words, we change the physical geometry of the system.<sup>22</sup> This alteration is a typical form of anti-entropic action. Such is the nature of the determining relationship of scientific progress to physical productivity of labor, per capita and per square kilometer.

The most commonplace foolishness practiced by my opponents, in the name of forecasting and related analysis, today, is that exemplified in the extreme by the pathetic case of the Mont Pelerin Society's Professor Milton Friedman's post hoc ergo propter hoc school of forecasting.<sup>23</sup> The reading of trend-line charts, for purposes of forecasting real economic processes, is a form of sheer buncombe, into which contemporary financial accountants are prone to fall all too often. The past certainly does predetermine the conditions on which the present and future will be built, but the simple statistical reading of a trend from the recent past, tells us nothing so much as the fact that the believer in such methods of forecasting has learned less than nothing from the past five centuries of scientific progress.

Thus, there is a deep scientific principle involved in that distinction of economies from mechanical systems. I summarize that crucial topic as follows.

The long-term rise or fall of economies, is determined, as I have just pointed out, by the fact that healthy economies are of a special quality of characteristic, which is defined by an intrinsically anti-entropic process. In effect, any competent measurement of the characteristic features of an economy which is increasing its potential relative population-density, is a measurement of the reflection of anti-entropy, or want of it, in the cyclical aspects of the process as whole. It is the intervention, by means of an added universal physical principle, or a technology derived from that principle, that long-range and other economic cycles are profitably transformed in their characteristics. The physical-economic profit generated locally, or in the large, is an expression of implicitly measurable local anti-entropy. Thus, competent long-range economic analysis, is focussed upon discerning functions of technological change, which either increase the entropy of the

22. In the sense of a Riemannian differential geometry.

23. A characterization of Friedman deliciously served by Cambridge's Mrs. Joan Robinson. Friedman, like the typical Gila Monster, may not be an impressive intellect, but he is no less nasty on account of that shortfall.

cycle, or its anti-entropy.

So, in summary of what has been said on this matter thus far: in defining any long-term or medium-term cycle, the immediate object is to determine whether the trajectory is toward an increase or decrease of the entropy of that cycle over its term. The function of informed intervention, is to take some action, either to remove an axiomatic feature of the cycle which increases the entropy of the cycle as a whole, or which, happily, will increase the expressed anti-entropy of the cycle. True profit, as defined from the standpoint of a science of physical economy, expresses a net gain attributable to anti-entropic action within that economy. No other definition of profit is acceptable for purposes of long-term forecasting of the course of physical economies. Belief in a zero-growth model of a stable, so-called "sustainable" economy, is not an option which will permit an economy to survive over the relevant long term.

In the matter of organizing a recovery from the physical-economic depression brought about through a defective monetary-financial system, as today, the essential mission must be to reverse the characteristic of the physical economy as a whole, from a state of self-aggravated entropy, to one of significant anti-entropy. This is accomplished, primarily, not through the simple sum-total of individual productive and related actions, but through changing the characteristic of the system considered as a whole. The value of production, is not the sum-total of estimated value added at local points. It is the relative anti-entropy of the economy considered as an indivisible whole.

The desired, happy outcome, is accomplished by a combination of measures. Increase the ratio of useful employment relative to the potential labor-force as a whole. Raise the level of technology relative to infrastructure, production, and design of products and processes, within the whole. In the course of this report, I shall clarify that approach to bringing about a general economic recovery.

Rather than merely describing my relevant discoveries respecting the specific point just made, I prefer that you should actually know what I am describing here. I describe the initial phases of my original discoveries in the science of physical economy, the discoveries on which all of my successes, relative to the work of my professional and other rivals, have depended. These are the principles upon which competence in economics depends today, especially under conditions of crisis, in which all conventional habits fail. These are the principles which dominate any competent discussion of the situation in the U.S. and world economies today.

## The Trouble With Sense-Perception

The central, controlling issue of scientific principle in politics, and in economics, is implicitly, whether or not man is simply another animal. Most present-day economists would not, and most probably could not explain that difference competently. That is one of the several crucial reasons for the

demonstrated incompetence among most of our leading economists today, the worst being the radical empiricists such as the followers of Norbert Wiener and John von Neumann.

The principle of natural law called variously the general welfare or common good, pivots upon the evidence, that man is not merely another form of animal life, but has a distinct quality, expressing a universal physical principle which is absent in the beasts. This crucial evidence proving the existence of this quality, is typified by fact of the power to generate valid, revolutionary discoveries of experimentally verifiable universal principles. The difference in effect, flowing from the acceptance, or rejection of this principle, is the proper basis for defining all civilized law, when the principle is efficiently understood as both a universal physical principle and a principle of equity.

This quality is, therefore, the essential referent for all investigation of economic cycles.

The basis for all proper constitutional law is, therefore, the notion that the conduct of man, and the rights of man, are to be derived from nothing other than the discernible implications of the specific quality of difference which sets man apart from the mere beast. The scientific, and, therefore, the legal conception of man, and the governing intent of law, must always be derived from the practical implications of this distinction. The substitution of a religious doctrinal tradition for science, on this account, does not provide proof of principle of law in the deliberations of a sovereign nation-state. Plausible sincerity of assertions of belief, is never rightly admissible as evidence of a witness' truthfulness.

These principles of law have axiomatic authority in the domain of physical economy, and of policies of practice which affect the outcome of practice bearing upon the physical economy as a whole. Violations of those principles of physical economy, are the principal cause of all of the economic catastrophes which a modern nation-state may inflict upon itself.

The so-called "ecological" difference between mankind and the animal species, is that the sovereign power of *cognitive potential*, which is specific to the human individual, does not exist among the beasts. *Cognition* signifies the power of an individual human mind, to form a successful hypothesis as the solution to a well-defined ontological paradox, and to verify that hypothesis by the quality of experiment required to demonstrate that hypothesis to represent a universal physical principle.

From the standpoint of animal ecology, a variety of a species of beast has a systemic ability to adapt to its environment in a way which is defined by a combination of ostensibly fixed, genetic and kindred characteristics. With mankind, it is different. Through the discoveries of universal physical principle, which are generated through the sovereign cognitive powers of the individual, mankind is able to increase what animal ecologists might describe as its relative ecological potential as a species; that, in a fundamental way, a way not found among higher apes and other beasts. This is the basis

for my own central contribution to the science of physical economy, the notion of potential relative population-density.

If I use "ecology" here in the sense of "animal ecology," as I do, this is not to be read as adopting the methods of animal ecology for man; quite the contrary. It is to employ the experimental implications of the Socratic method of negation, as Pasteur, Curie, and Vernadsky, et al., did, for defining the existence of a non-abiotic class of universal physical principle, a principle which does not exist within the bounds of principles extant in an experimentally defined notion of what might be assumed, often, if wrongly, to be an originally abiotic universe. That a process identified as living, is shown to be able to produce effects in an abiotic medium, which could not be generated within an axiomatically abiotic domain, is the experimental basis for the definition of life by the succession of Pasteur et al.<sup>24</sup> The distinction between man and the animals, may be shown in a similar way, by showing that human behavior accomplishes a physical effect which could not occur within the axiomatic bounds of an animal ecology. Any competent teaching and practice of economics, including forecasting, is premised on an understanding of the crucial importance of those threefold, categorical distinctions among experimentally defined phase-spaces.

However, that is not sufficient. This brings us to a crucial sub-topic of my hitherto unique achievements in long-range forecasting, the functional notion that certain principles of Classical artistic composition, are also universal physical principles. Without examining economic processes from the included standpoint of the role of social relations in defining possible forms of scientific cooperation around the discovery and use of the universal physical principles of both abiotic and living organizations, it is impossible to account for the way in which long-range economic cycles, or kindred processes, have been ordered in previous history.

This functional distinction between man and the lower living species, is otherwise expressed in an essential way, by the functional distinctions between sense-perception and knowledge.

As I shall indicate here, my original discoveries in the science of physical economy, were derived from further development of the argument I crafted first as an adolescent, and which I refreshed at the close of the war, for refuting the attack on Leibniz by Immanuel Kant. I signify that attack which had been the central feature of Kant's notorious series of Critiques. Through this approach to refuting Kant, I was able to define the meaning of cognition in a fresh way, and continue to improve upon that definition later. The result was not inconsistent with the outcome of the spiritual exercises better known as Plato's series of Socratic dialogues,<sup>25</sup> nor with

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24. LaRouche, op. cit.

25. This use of "spiritual" is neither gratuitous, nor cute. In physical-scientific method, the only rational definition of "spirit," is a manifest quality of an individual human mind. It is shown to exist by reason of the fact, that the

Leibniz's insight into the principle of Plato's dialogues; but my application was an original one, prompted chiefly in reaction to the influence of Leibniz upon my studies. This discovery defined a method which subsequently proved itself to be peculiarly best suited to the task of accounting for the essential features of long-range economic cycles.

As I have presented the case in locations published earlier, the action of generating a valid discovery of a universal physical principle, occurs only within the perfect security of the sovereign cognitive processes of an individual human mind. I shall explain some points on this matter of crucial relevance to economics, during this immediate portion of the report.

This fact of sovereignty presents us with a paradox: since no person can observe directly the cognitive process of another person's generating a provable hypothesis, how is it possible to organize effective cooperation in society's use of such universal physical principles? Discovery of principles, is always an individual act of a sovereign individual mind. However, this is paradoxical, in the Socratic sense, since technological progress in society does not occur through the bare discovery of such a principle by a single discoverer. The will, and knowledge needed for effective cooperation in use of any discovered principle, is a product of a social process, not a purely individual action. Thus, the demonstrably perfectly sovereign quality of individual cognition, presents us with a true ontological paradox.

This, in turn, generates a nice nest of multiply-connected, subsumed ontological paradoxes. For example: since we can know that a discovery is valid, only through its efficient effect in a social setting, how can cooperation in use of that principle be organized within society? Since the maintenance of the human species requires the transmission of accumulated successive advances in such knowledge of universal physical principles, it is the ordering of the related social relations within a society, or among societies, and from generation to generation, which defines the possibility of a society's realizing the benefit of such discoveries, and transmitting the accumulation of such cognitive experiences from one generation to the next.

### Human 'Super-Genes'

Consequently, the essence of human nature, does not lie in the mere reporting of sense-experiences, or tricks, as "information," from one individual to another, but rather the

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individual human mind has a physically-efficient capability to accomplish what no other living species can do: discover the kind of universal physical principle, which can become known only through cognition. This implies the related significance, that the induced replication of an individual's discovery of specifically cognitive ideas, has the effect of transmitting a spiritual existence, that of the original act of discovery, for example, to future generations, as such cognitive products were transmitted to that individual from their origin in an ancient original discoverer of such a principle. Since the actions involved produce effects expressed as physical effects, the transmission of such ideas by stimulated replication of the act of discovery, is also a physical effect, and thus a subject of crucial-experimental verification. The

prompting of the cognitive processes of one individual, to replicate the cognitive act of discovery of a universal principle which has been made by another.

It is that cognitive aspect of social relations, which defines an individual's relationship to previous generations, over thousands of years, or more, and, similarly, to future generations. It is that aspect of social relations, which distinguishes the human individual, as an integral part of humanity as a whole, from the individuality of the mere beast. It is that relationship which expresses on the largest possible scale, the proof of an absolute distinction between man and the beasts.

The matter does not end there. The ability to demonstrate that transmittal of discoveries of knowledge of universal physical principle, is universally efficient in this universe, is a definition of truth. For example, what I have just written is demonstrably true, but, it is nonetheless highly debated. The empiricists, Kantians, and logical positivists, like the anarcho-syndicalists, for example, disagree most vehemently with what I have just reported here. The Kantians, for example, would deny the existence of knowable truth; the radical positivists and existentialists,<sup>26</sup> especially the sociologists of that curious persuasion, would go into a frenzy like that of angered rhesus monkeys in a cage, and do, if the issue of truthfulness were raised in their classroom.

The point, respecting that quality of difference between man and beast, which I have just summarized, is the most hotly contested issue of all modern civilization. It is, for example, the issue posed by the true statement, as by me, that "information theory" is one of the most monstrous, and most destructive of the hoaxes popularized during the recent sixty years. The issue arises in a general way by posing the inherently paradoxical question, whether knowledge is located within the domain of sense-perceptual experience as such, or whether human knowledge must be defined as of the form of experimentally demonstrated, cognitive generation of universal physical principles.<sup>27</sup>

This method of transmission of discoveries of universal physical principle, not only from one individual to another, but over successive generations, obliges us to define cognition in a way which goes beyond the argument of Vernadsky, and that in a qualitative way, rather than in degree of refinement. We are implicitly obliged to recognize the existence and role of a class of phenomena unique to human social relations, phenomena which we might best term "super-genes." For this, we resort to the same experimental method of negation,

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greatest theologians known to me through my studies, employ that method of "spiritual exercises."

26. "Frankfurt School" existentialists Theodor Adorno and Hannah Arendt, for example.

27. In modern European history, this conflict was centered early around the figure of Nicholas of Cusa. The cases of the irrationalist Wenck and Henry VIII's Venetian marriage-counsellor, Giorgi (Zorzi) are typical, as are Pietro Pomponazzi and, later, the author of modern empiricism, Paolo Sarpi.



by means of which living processes are distinguished from abiotic ones, and cognitive from animal life.<sup>28</sup>

The relevant argument goes as follows.

Since the act of cognition occurs only within the perfectly sovereign cognitive processes of individual mentation, the act can not be transmitted in that form from one mind to another. It can be transmitted only by replication. This does not leave the equivalence of the act, occurring in two distinctly separate mental processes, a mystery. The experimental method enables two minds to be certain of the equivalence of their discovery, once the relevant, crucial form of experimental proof of the coincidence has been achieved.

On this account, we are able not only to speak with certainty of an absolute distinction between man and the lower forms of life, but to define that distinction as the essential quality of social relations among the members of our species. On this account, there is no essential equivalence between animal and human behavior, except to the degree men and women are bestialized in both their sense of identity and behavior. Indeed, the proper notion of "evil" is the notion of bestialized man, the notion of man typically associated with

28. I have referred to this phenomenon of "super-genes" in earlier locations, but the present setting provides the medium in which to state the case in a more thorough way.

modern existentialists such as Nietzsche, Richard Wagner, Hitler, Heidegger, Adorno, Arendt, Sartre, et al.

This notion of the specifically human quality of the cognitive form of social relations, is not limited to the isolable individual act of verification of a replicated discovery of principle. Human nature is located essentially, primarily, in the way in which the cumulative effect of transmission of discoveries is expressed over successive generations. Study of this aspect of the matter, requires that we recognize the existence of a phenomenon fairly described metaphorically as "super-genes."

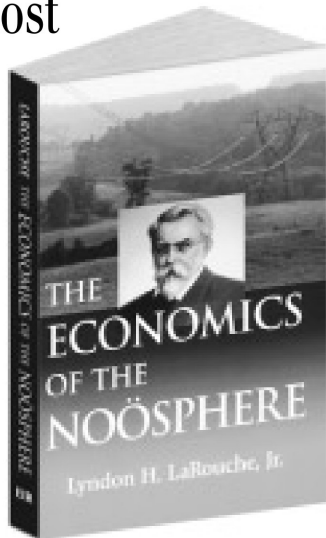
The clearest expression of the function of such "super-genes," is found in the mode of transmission of knowledge of principles called "Classical humanist education." However, we must also take into account, that such forms of communication of cognitive ideas, are not limited to a formally Classical-humanist mode of education. It is readily demonstrated, if one takes the time and effort to demonstrate this, that the Classical-humanist mode is a concentrated expression of principles which have always operated among human beings, especially in the loving relationship with child and parents, as from birth, if not, as is probably the case, even while the infant is gestating in the womb.

Ask: What is happening in the cumulative social process, of transmission of cognitively generated, and replicated experiences of discovery of experimentally demonstrable universal physical principles? What is happening physically? Very well: what should we mean by use of the term physical?

Without going beyond what Vernadsky has accomplished, the rational use of the term "physical" finds an adequate basis in those qualities of experimental demonstrations of principle, which are distinguished from one another by their distinctive form of regular physical effects. Thus, we define universal physical principles of an abiotic phase-space, by physical experiments which are coherent with the notion of an abiotic sub-universe. We define living processes, the Biosphere, by means of physical effects which could not come into being in a universally abiotic phase-space. We define the Noösphere by physical effects which could not come into being within the experimentally defined confines of either an abiotic or biotic phase-space, or both combined. This is, therefore, the only rational, experimentally based method, for the definition of the term "physical."

Vernadsky's notion of the Noösphere carries us through to the notion of the physical impact of individual cognition. I carry this same approach a step further than he does, to the notion of the effect of a principle of cognitive social relations. Here, we encounter another, distinct physical effect, defined in a manner consistent with the way Vernadsky defined the Biosphere and Noösphere, to which I give the name "super-genes." This effect reflects the physical basis for what is otherwise recognized as the methods and products of Classical modes of artistic composition associated with the influence of such as Solon, Plato, Dante Alighieri, Leonardo da Vinci,

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Rembrandt, J.S. Bach, Kästner, Lessing, Moses Mendelssohn, Mozart, Goethe, Schiller, Beethoven, Heine, et al. This is identified with the function of irony, metaphor, and the subjunctive, in both Classical modes of artistic composition (and performance), and in the work of statecraft, as in physical science.

All of these expressions of that principle of cognitive social relations, have the useful name of Classical culture. This means not only the transmission of what is explicitly and rightly distinguished as Classical forms of culture, but also all social processes which express the same principle within them, whether the culture is otherwise meaningfully definable as “Classical,” or not.

The accumulation of transmitted discoveries of principle, of science and art combined, over successive generations, results in a type of individual, and society, which is more or less far removed, in physical effect, from a simple individual person with the cognitive potential in general embedded within his nature. This transformation occurs through the cognitive form of the special quality of social relationship expressed by the effective transmission of cognitively generated conceptions from one generation to another, or across cultural currents. The effect of such transformations is equivalent, in physical effect on the Biosphere and Noösphere, to the same general effect as culturally effected “genetic” change, as genetic change would be observed in the character of a lower species or variety.

Clearly, the effect of cultural transmissions of this cognitive type, produce their characteristic physical effect in terms of the capabilities and other characteristic responses of the persons in whom that experience has had its effect. There is, in short, a change in the physical principle expressed by both the individual and the social relations among the individuals of the relevant culture. This is the effect which prompts theologians to locate the immortality of the mortal human individual, as living in a simultaneity of eternity. The continuity of that continuing cognitive process, within which the mortal individual exists, is never broken.

There are also reverse effects, virtual species-downshifts, such as the pestilence of cultural decadence which erupted in globally extended European culture during the recent thirty-seven years of the so-called “rock-drug-sex counterculture.”

The significance of these issues is shown more clearly, when we apply the method of very long cycles to the most crucial topics of theology.

In the Classical Greek treatment of the nature of God, as by Plato’s dialogues,<sup>29</sup> the idea of God appears, in first approximation, as a universal principle; or, in Greek, a Logos. The experimental proof that the principles underlying both life and cognition, respectively, are universal principles, signifies that no universe existed, or will exist, without their

29. E.g., the *Timaeus*, in *Plato: Vol. IX*, Loeb Classical Library (Cambridge, Mass.: Harvard University Press, 1975).

efficient, anti-entropic presence within it. If creativity is a universal physical principle, as Vernadsky’s approach suffices to define such a noëtic principle, then it was always and everywhere efficient, existing in the form reflected as cognition within the human mind.

Yet, the universal physical principle of creativity is known to mankind only in the sovereign individual form of the act of cognition. Here, we are confronted with the same kind of argument made by Leibniz, in his conceptualization of our universe as organized according to a monadology. Thus, to our knowledge, creativity exists efficiently in the universe only as an expression of a perfectly sovereign being, a being which expresses His existence in such forms as those intentions which Kepler equated to universal physical principle.<sup>30</sup>

It is the continuity of such a universe, through its included expression as the human species and human history, which is subtended by the physical principle I have associated with the notion of “super genes.” The continuity of the cognitive creative principle has itself a sovereign identity, a quality of personality, as the Creator Himself exhibits this in creation considered in the large. So, although this is a physically efficient principle, it is also a spiritual principle, the reflection of a physically efficient power acting upon what we otherwise perceive as the physical universe. In that case, we are employing the term spiritual as a term of physical science, in the same sense that we employ the term life to distinguish the principled difference between a living and an abiotic process.

These cultural processes which I have associated with the notion of “super-genes,” play a critical role in determining the characteristic features of long-range economic cycles. I shall address this effect at an appropriate point below.

## Anti-Entropy vs. Entropy

To understand the functional definition of those economic cycles which increase the potential relative population-density of a society—that is, generate true physical profit—we must define the way in which individual persons are able to inject an added factor of what must be recognized as anti-entropy into the economic cycle. That brings us into direct confrontation with the popularity of the absurd, currently pop-

30. The argument which Leibniz summarized as the set of theses called his “monadology” was an outgrowth of, and expression of Leibniz’s uniquely original (circa 1676) discovery of the calculus. The emergence of the conception of a universal principle of “least action,” in the course of his further development of the calculus, poses the notion of a monadology implicitly, as I have argued for the sovereignty of the individual processes of cognition. Hence, the castration of the Leibniz calculus by Augustin Cauchy, is to be seen as the third of a series of hoaxes by the apologists for Isaac Newton. The first was the discredited, “least action” hoax of Berlin’s Maupertuis. The second attempt, after Maupertuis’ fraud was exposed, was the hoax of the “Letters to a German Princess,” by Maupertuis’ Berlin confederate Leonhard Euler. The third, was the assertion, by Laplace’s accomplice Cauchy, of the essential intent of Euler’s hoax, as the linear approximation passed down as customary classroom dogma since.

ularized, pseudo-scientific fad of “information theory.”

This issue, whether or not man is a creature of cognition, unlike the beasts, is inseparable from the issue, as posed by Plato, for example, of whether or not sense-perception as such, affords the mind a competent representation of that actual experience which prompts our sense-perceptual images. In the history of ancient through modern philosophy and science, the effort to reach a rational form of conclusion in this matter of sense-perception, has been reduced to two general types of results.

In these systems of the first type, the believer is constantly confronted with the evidence, that the behavior of the processes in which he is situated, is not fully consistent with the assumptions deduced from sense-certainty. This persistent inconsistency within the domain of sense-certainty, has repeatedly driven the philosophical reductionist into wild-eyed mysticisms, and, therefore, sometimes, also into conducting religious wars.

Among the one type of cases, we include all superficially rational systems which sought to defend sense-perception from intrusions by cognition, such as the systems of Aristotle, the modern empiricists, Kantians, and such devotees of Bertrand Russell as Norbert Wiener and John von Neumann. The most typical expression of this is therefore found in those known as the reductionists. In contrast, in the second, contrary type of cases, such as my own, that same inconsistency attracts the delighted thinker with the prospect of discovering some truth which overturns shopworn prejudices.

This is key for understanding the chief characteristic error common to the otherwise incongruent systems of Ptolemy, Copernicus, Brahe, and to the empiricist Galileo. By assuming that Aristotle’s method, as followed blindly by Ptolemy, was valid, or, in Paolo Sarpi’s alternative, the neo-Ockhamite versions known as empiricism and logical positivism, they degraded science to the mere attempt to describe nature in conformity with an adopted set of purely arbitrary, “ivory tower” assumptions. They did this without adducing any universal physical principle which would actually resolve the ontological paradoxes erupting from within the phenomena under examination.<sup>31</sup>

These “ivory tower” systems of the reductionist, include the more extremely pathological expressions, such as explicit

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31. Typical of the error common to the reductionists on this account, are the effects of teaching secondary geometry as a subject whose principles can be adduced without taking physical processes into account. By drill and grill in such ideas about an assumed pure mathematics, the student is misled into such follies as attempting a geometric representation of physical processes, as if to explain what such “mere describing of nature” excludes from consideration. Compare Bernhard Riemann’s arguments on this problem in his 1854 habilitation dissertation, with emphasis on the concluding section, and also the closing sentence of that dissertation. Bernhard Riemann, *On the Hypotheses Which Lie at the Foundations of Geometry*, Henry S. White, trans., in David Eugene Smith, ed., *A Source Book in Mathematics* (New York: Dover Publications, 1959).

satanism, or varieties akin to Romanticist composer Richard Wagner’s ring myth, *The Lord of the Rings*, the Harry Potter cult, or the axiomatically irrationalist notion of “freedom” associated with John Locke, Bernard Mandeville, Dr. François Quesnay, Adam Smith, et al. In these reductionist expressions of defective mental development, the victim gropes in the unseeable. Like Marlowe’s or Goethe’s Faust, he yearns, as the superstitious gambler does, for some magical power, perhaps satanic, outside the universe, which is wishfully presumed to act upon that universe, if one could but win that mysterious and axiomatically mystical power to service of one’s desires.

The mind of that poor fellow presumes that the imperfection of sense-perceived reality, as he misperceives that reality, is sufficient evidence of the existence of some utterly irrational form of higher authority, beyond the senses. Adam Smith did this. His lunatic notion of the “invisible hand,” typifies the kind of superstition to which the wishful devotee might appeal for such beneficent interventions as fixing the outcome of the role of the dice. That sort of “invisible hand,” of Bernard Mandeville and Smith, is the mystical authority to loot farmers as prey, which Quesnay’s *laissez-faire* attributes to the aristocratic landlord. So, the pro-satanic Mandeville, the official prophet of the pro-satanic Mont Pelerin Society, saw public virtues as the fruit of private vices, as Mont Pelerin’s Milton Friedman promoted drug-trafficking.<sup>32</sup>

The advocates of these systems, have been compelled to acknowledge the existence of some efficient agency, beyond the reach of either sense-perception or their personal comprehension, which, they fraudulently assert, as Mandeville and Adam Smith did, accounts for certain deductively paradoxical patterns in sense-perceived experience. The so-called “invisible hand,” as variously presented among empiricists such as John Locke, Isaac Newton, and Bernard Mandeville, are examples of this. The same pathological feature appears as the crucial defect debunked by Kepler, in the flawed physics of Ptolemy, Copernicus, Brahe, and Galileo. I emphasize: a related variety of obscenity appears in the *laissez-faire* of the radical pro-feudalist, Dr. François Quesnay, as Quesnay is plagiarized as the “invisible hand” of the British East India Company’s Adam Smith.

There is a real world, beyond direct access by the simple senses, but it is in no sense an arbitrary concoction, as those reductionist fairy-tales are. It is a rationally comprehensible universe, once we have come to know what it is through the methods of scientific discovery of universal physical principles. In that aspect of science lie the efficient, knowable realities for which the images of sense-perception are merely shadows.

The same general problem is inherent in Euclidean, so-

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32. See Lyndon H. LaRouche, Jr. and David P. Goldman, *The Ugly Truth About Milton Friedman* (New York: New Benjamin Franklin House, 1980), pp. 306-322.

called non-Euclidean, and related formal systems of classroom geometry. In these ivory-tower systems, a set of definitions, axioms, and postulates is introduced arbitrarily, on the presumption that sense-perception, as supplemented by some antic inspiration, makes these assumptions “self-evident.” Again, the attempt at making science from the vantage-point of such ivory-tower, so-called a priori assumptions, is self-degraded into yet another substituting of the mere describing of nature according to those arbitrary presumptions, as Ptolemy, Copernicus, and Brahe did, instead of discovering the universal physical principles at work, as Kepler did.

These ivory-tower systems have often led the classroom instructor to abuse the students with such absurdities, as assertions equivalent to, “we have not yet proven that life is possible in this universe,” or, the worse assumption, that “life (or, even human mentation) is a product of trillions of transactions within the framework of purely abiotic transactions within a strictly abiotic universe.”

From the contrasted viewpoint, of which my own work is typical, we have the approach which leads into that worldview which is indispensable for comprehension of the origin and functional characteristics of physical-economic cycles. In this case, the recognition of the existence of ontological paradoxes in the world of sense-perception, does not lead to faith in magic, but, rather, a search to discover experimentally valid, universal physical principles.

The most famous paradigm for this second view of sense-perception, is the use of the pedagogical ruse of the “Cave” in Plato’s *Republic*. What sense-perception apprehends, is as but the shadows cast on the irregular wall-surface of a dimly-lit cave. The task of the viewer is to discover, and learn to control, the unseen object which the shadow reflects. Today, the very existence of microphysics offers an elementary illustration of that point. Fermat’s adducing a principle of “quickest time” from the paradoxical juxtaposition of reflection and refraction, is a perfect illustration of the argument of “Plato’s Cave.”

The role of the reductionists as the kind of lunatics which John Maynard Keynes showed Sir Isaac Newton to have been,<sup>33</sup> arises from the fact that, on the one side, they are fanatical slaves to sense-certainty, and yet, at the same time, as Leibniz pointed out to Newton and to Antonio’s agent Dr. Samuel Clarke, they themselves premise what they offer as the most precious parts of their theory, upon intervention by an agency from outside the reach of sense-certainty. By denying the path to sanity, in the existence and role of hypothesis, they impel themselves to worship, or fear, otherworldly, purely magical and fantastic forces and agencies, for which there is no experimental proof of principle that these fantastic concoctions ever did, or ever could exist. Newton’s “scientific” chest of experiments in black magic, are typical of the

lunacies implicit in empiricism.

Since it is in precisely those connections, that experimental method reveals and verifies the specific distinction of man from the beasts, the impact of tolerating the influence of reductionism in education and popular opinion, is the denial of the nature of man, and, therefore, of man’s God. Reductionist mysticism is, therefore, a lie, and, worse, implicitly as prosatanic as the secondary and other pupils who turn themselves into lunatic mass-killers of the current times’ spread of “new violence,” through such recreations as cultivated addiction to the positivist’s reductionist extremes of what are inherently de-humanizing, Nintendo and kindred games.

The fallacy of such ivory-tower viewers as the Aristoteleans and modern empiricists, was recognized in this or kindred ways, by many ancient and other thinkers. The case of the Socratic dialogues of Plato, is exemplary. The humanism of Solon of Athens, is to be contrasted thus to the psychotic image of Lycurgan Sparta and the Roman imperial legionnaire, or the Nazi Waffen-SS model which mimicked those legions. The issue served as the basis for the development of modern experimental physical science, by Nicholas of Cusa, in his *De Docta Ignorantia*. Followers of Cusa such as Luca Pacioli and Leonardo da Vinci addressed this. The line of development of approaches to a comprehensive form of mathematical physics, by Kepler, set into motion a process, leading through Leibniz, Kästner, and Gauss, to Bernhard Riemann’s overthrow of all “ivory tower” mathematics, in his 1854 habilitation dissertation.

With Riemann, space, time, and matter, as many had thought we had known them a priori (with assumed self-evident certainty), were banned from all competent physics thereafter. There was no Santa Claus, but only real adults who bestowed loving considerations upon children. In place of arbitrary, ivory-tower sorts of definitions, axioms, and postulates, only experimentally validated universal physical principles were allowed.

To understand the anti-scientific character of concoctions such as “information theory,” one must focus on the characteristic problem presented to society by the question: Do the individual powers of sense-perception represent a faithful image of the real universe around us, or not? Understanding this problem, shows us how technologies are generated. An understanding of the fuller implications of that matter, leads us, in turn, to a conception of the functional meaning to be attributed to the term “economic cycles.” Are these notions of technology derivable from the interpretation of sense-perception, as Wiener’s argument, and silly statisticians such as Milton Friedman and Senator Phil Gramm imply, or are they obtained, as they are in fact, by discovering ways for overcoming the fallacies inhering in a naive faith in sense-perception?

### My Attack on ‘Information Theory’

One of the common pathologies of contemporary policies of practice in education, is the practice of demanding that the

33. John Maynard Keynes, “Newton the Man,” in *Essays in Biography* (New York: The Norton Library, 1951).



LaRouche's reading of Norbert Wiener's *Cybernetics*, sparked his discoveries in economics in the 1948-1952 period. Wiener's "information theory" dogma was a hoax, which excluded the existence of cognition in human behavior.

students learn, and pass an examination in a taught doctrine. That is essentially a fraudulent practice. Teaching of ideas, is properly accomplished by inviting the pupil, for example, to experience what the teacher has experienced in the struggle to discover the relevant principle. All honest teaching is biographical, and, often, autobiographical. So, proceed as I did, in making my original discoveries within the science of physical economy.

It happened during the years 1948-1952. It began with my reaction to an early 1948 reading of an advance-publication copy of Professor Norbert Wiener's *Cybernetics*.<sup>34</sup> I was, at first, entertained by Wiener's discussion of some designs, but then angered, by that book as a whole. What angered me, was Wiener's use of both Ludwig Boltzmann, and of echoed effects of Wiener's own Faustian training under the Mephistophelean Bertrand Russell of *Principia Mathematica* notoriety.<sup>35</sup> Wiener excluded the existence of cognition in human

34. The Paris edition, loaned by a friend who had received a copy from Wiener's daughter. The difference between the time of my reading of the advance copy, and the publication of the U.S. edition, is relevant to the way in which the sequence of ensuing developments occurred in my initial discoveries of that year and the next.

35. The controversy between Russell and Alfred North Whitehead, concerning the way in which the *Principia Mathematica* was produced for circulation, and the way in which Russell's acolytes organized a decades-long, vengeful campaign against Kurt Gödel, for Gödel's proof against the central thesis of Russell's intrinsically fraudulent book, merely typify the notoriety. As illustrated by that case, Russell and his circles belonged to the school of ethics, which teaches its acolytes: "If you are caught stealing a church, and the steeple is sticking out of your hip-pocket, deny everything, but, as an added precaution, also order the killing, and perpetual, shameless libelling of all known immediate members and distant relatives of the families of the witnesses." Global nuclear-warfare zealot Russell was not only, probably, the most thoroughly evil man of the Twentieth Century, Adolf Hitler notwithstanding. In all of this, what is to be recognized, above all, is that his role in projects such as the efforts to eradicate the modern nation-state through nuclear terror, is not a trait external to his, and his acolytes' activities in

behavior. *Cybernetics'* entertaining examples aside, for anyone with actual knowledge of technological changes in physical economy at the point of production, Wiener's "information theory" dogma was a hoax, from beginning to end.<sup>36</sup> For anyone who had wrestled successfully with the fallacy of Kant's attack on Leibniz, as I had been seasoned in that subject since adolescence, the diagnosis and cure of Wiener's fraud, was also evident.

We must take up this matter at this point. I emphasize, that, the basis for systematic understanding of the function of economic cycles, depends upon an adequate comprehension of the way in which the cognitive development, or lack of such development, of improved technologies, determines the principal kinds of general characteristics of those cycles. My 1948 reaction against Wiener's "information theory" hoax, was therefore essential in prompting my fascination with the task of discovery of solutions for the then hitherto unresolved problem of redefining the general notion of economic cycles in a physically meaningful, functional way.

Qualitative improvements in productivity, are reflected at the legendary "point of production" through the use of what are called "technologies." Technologies, efficiently defined, can never be reduced to the form of what Wiener et al. define as "information."

The development of any valid technology, occurs as a by-product of a special kind of proof-of-principle experiment. In the attempt to test an hypothetical form of universal physical principle, a successful series of experiments qualifying, in total, as "universal," pin-points certain features of the relevant design of the experiment, as situated within the medium employed for the chosen experimental subject. By "abstracting," so to speak, this feature of the experimental design, the discovered principle can now be employed as a technology which reflects the relevant specific hypothesis's application to the relevant medium.

In addition, not only do such discovered technologies contribute an essential part to the increase of the effective productive powers of labor. It is the additional experimentation re-

academic fields; it is an expression of that satanic quality of hatred which Russell himself sometimes expressed explicitly, which motivates their role in the academic fields, to the present day. This connection between nuclear-warfare impulses and anti-scientific frauds, is of the utmost relevance for understanding the character of all the leading "Enlightenment" and later empiricists, to the present day.

36. Whether Wiener knew that his "information theory" was a hoax, or did not, I can not tell. I have no proof that he was truly witting of the fraud on which this folly was premised, or whether, in the alternative, he was simply motivated to lie, as lackeys are wont to do, to promote the reductionist fanaticism of the Bertrand Russell whose devotee he was. Notably, Wiener was not only a youthful devotee of the dogmas of Russell's *Principia Mathematica*, but radical positivist Wiener's role in the Cybernetics project was a project of the Russell-founded Unification of the Sciences project, which featured the Josiah Macy, Jr. Foundation, and such particularly odious examples of Russell's devotees as the dubious Margaret Mead and her sometime spouse Gregory Bateson.



quired to define ways in which previously known and newly discovered technologies might be combined, which points to the paradigmatic character of the relationship between original discovery of some universal physical principle, and the increase of the productive powers of labor, as if at the point of production.<sup>37</sup>

The significance of that experience of modern industrial production, is to be formulated as follows. The experimentally provable hypothesis, upon which the generation of individual and combinable technologies depends, is a product of a faculty specific to human individuals, the faculty of cognition, which the life's work of Russell and his acolytes Wiener and John von Neumann denies to exist. Immanuel Kant anticipated Russell, Wiener, and von Neumann, in Kant's famous Critiques. Russell, Wiener, et al., also went much further than Kant, into the kind of radically Ockhamite nominalism associated with those more fanatical reductionists such as Ernst Mach and Russell himself.

To understand both the anti-scientific character of concoctions such as "information theory," one must focus on the characteristic, elementary problem presented to society by the same question addressed above: do the individual powers of sense-perception represent a truthful image of the real universe around us, or not? Understanding this problem, shows us the way toward discovering how technologies are generated. An understanding of the fuller implications of that matter, leads us, in turn, to a conception of the functional meaning to be attributed to the term, "economic cycles." Are these notions of technology derivable from the raw, statistical interpretation of sense-perception, as consistency with Wiener's argument requires, or are they obtained, as they are in fact, by discovering ways for overcoming the fallacies inhering in a naive faith in sense-perception?

Contrary to the "information theory" cultists, in the history of ancient through modern philosophy and science, the effort to reach a rational form of conclusion in this matter of sense-perception, has been reduced to two general types of results. First, take a clinical look at the pathology called "information theory" from the standpoint of the transmission of knowledge of the way in which a principle was discovered and developed for use, rather than as a matter of descriptive instructions to be learned, animal-training fashion. Second, look at production, and "information theory," from the standpoint of economy as a social process.

To establish the basis for long-range forecasting, as I have done, it was necessary to define the general method for integrating all the most essential parts of the set of axiomatic-like constraints, which generate the effect to be recognized as a long-term physical-economic cycle. Since all such con-

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37. The introduction of the hoax of so-called "benchmarking" to industrial design, more than a decade ago, typifies the kind of ignorance of those characteristics of technology rampant among victims of the "information theory" cult.

straints are defined for knowledge by the processes of cognition, it would be impossible to conceive an effective functional analysis of the characteristics of such cycles, except through a rigorous examination of the most relevant features of cognition in general.

Civilized society has a convenient working-model for study of the characteristics of that function of individual cognition, in the set of Socratic dialogues of Plato. In fact, those dialogues are, so far, the only known, reasonably comprehensive model on which to premise a study of the general principles of cognitive behavior. Over the recent several decades, I have used the case of Kepler's discoveries in astrophysics, and crucial features taken from Nicholas of Cusa's *De Docta Ignorantia*, as the pedagogical standpoint, consistent with Plato's dialogues, from which to clarify the import of Plato's method for discoveries of experimentally demonstrable universal physical principles.

As I have emphasized in a number of published locations,<sup>38</sup> my approach overlaps the views of Vladimir Vernadsky, in dividing physical space-time among three distinct, but interconnected experimental phase-spaces. The first, and crudest of these phase-spaces, is the abiotic domain implied by experiments which ignore the existence of the effects of characteristically anti-entropic living or human-cognitive processes. The second, relatively higher, is living processes and effects on the abiotic domain of those processes, which Vernadsky defines as the Biosphere. The third, the highest, is effects on both the abiotic and Biosphere domains which are uniquely products of human cognitive intervention, the domain which Vernadsky identified as the Noösphere. On the proof of the existence of the Noösphere, I accept Vernadsky's notion of the experimental proof of this; however, as I have indicated, my own views on the internal characteristics of the action of the Noösphere, differ from that of his published accounts, in a significant way.

This threefold set of phase-spaces, then serves us as the basis for a general theory of physical economy. The characteristics which define long-range cycles in physical economy, are to be comprehended as the combination of human actions, and the reactions they evoke, from among, and within each of the three phase-spaces. These cycles are determined by the (physical) differential geometry cohering with the implicitly axiomatic features of the combined universal phase-spaces.

In the immediate discussion, on the subject of "information theory," the point to be emphasized, is that, in truth, science must explain everything in terms of experimentally demonstrable principles, always relating any such principle to a certain higher class known as universal physical principles. The relatively unique kind of common significance of my own and Vernadsky's conception of the Noösphere, is that this approach enables us to grasp all combined abiotic,

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38. LaRouche, op. cit.

biotic, and cognitive processes as both respectively distinct, and yet efficiently interconnected from the standpoint of a generalized notion of experimental development and application of universal physical principles. We must do this while considering each and all of these types as something commonly experienced in terms of evidence which is equally a set of physical products of the relevant activity.

Vernadsky's doctrine would agree, that it is cognitive action, as by discovery of an experimentally validated hypothesis, which generates new human knowledge of universal physical principles. His views I accept as corresponding to my own, insofar as we are considering the relationship between experimental proof of principle and the origin of new technologies subsequently introduced as effective innovations in both productive processes and product-design.

These cognitively generated discoveries of universal physical principles, from which technologies are generated as by-products, have the effect of changing the physical geometry of the physical domain in which human actions are located. In other words, we respond efficiently to our discovery that a previously unknown, universal physical principle was sitting out there, in the real universe, as if waiting for us to discover, and utilize its existence.

It is by these qualities of changes in our behavior, and in only that way, that mankind is able to increase its power to exist in, and over the universe. Indeed, we have reached the state of successful population of the planet, that society could not continue to exist without generating and applying to production, without limit, new discoveries of universal physical principle. Zero-technological growth, would be generalized attrition, and rapid extinction of most of the current levels of the human population, through the most horrible holocaust ever imagined. The recognition of these discoveries, and either cooperative action to employ those discoveries, or to abhor them, determines the general potential for increase or decrease of the effective productive powers of labor of an economy.

In my reaction against the obvious fraud of Wiener's "information theory" on this account, I focussed not only upon the cognitive features of the generation of technologies of design of processes and products, but on the matter of the mode by means of which cooperation in discovering and employing technologies, is fostered among human beings considered in the totality of their social existence as human beings.

### The Role of Art in Economics and Morals

Consider for a moment, as part of the indictment of the charlatans of "information theory," a commonplace, relevant illustration of the kind of socially-expressed economic dysfunction, which the popularization of "information theory" and related practices, has introduced to the design and use of manufactured products.

Look at the degeneration in the functional qualities of

material which so-called "tech writers" have inserted into the typical product description and use instructions, accompanying the delivery of a manufactured product. Consider also, a directly related pathology, exhibited in the past decade's often disastrous, increasingly widespread substitution of "benchmarking" for competent design-engineering. Then, after summarizing that case, contrast those indicated forms of cultural decadence, to the qualities of communication which the Classical English poet Percy Bysshe Shelley identified as periods in history during which there is an increase of the power for "imparting and receiving profound and impassioned conceptions respecting man and nature."<sup>39</sup>

It is readily shown, that the effort to make a separation between matters of artistic composition and subjects such as physical science and economics, reveals a moral impoverishment of the mind of the would-be scientist or economist. The included result of such an impoverishment, will be, inevitably, a contribution to society's loss of economic potential.

For an example of such a pathological influence, consider the following, relative simple quality of clinical evidence.

During and immediately following World War II, there was a significant, and expanding resort to dividing the work of the scientist and engineer who designed the product, from the writing of those descriptions and instructions supplied which were prepared for the user by persons who came to be known as "tech writers." At the outset, the resulting damage was apparently minimal. The "tech writers" tended to show actual, conscience-stricken comprehension of the product they were describing. Over the years, especially with the introduction of the unconscionable fad called "programmed learning," the always fragile functional relationship between the actual design of the product and the descriptions by the "tech writer," became an increasingly troubled one.

As it is said, the competent, or relatively competent "tech writers" of the immediate post-war period, into the 1950s, "took it from the top." In the instance of information associated with the product of any reliable firm, the reader was usually given an overview of the subject being addressed, and a sense of the relevant functional relations among the sundry components and operations referenced in that report. Over time, the quality of "tech writing" became increasing less coherent. The work-product suggested something assembled from the snippets sent in from sundry places. The effect of this loss of coherence was, that reading the finished, combined result, suggested, more and more, the image of a collage of lines, each written by one of a scattered herd of separate writers, many of whom were apparently on poor speaking terms with one another. The end result has been often something akin to the "recurring nightmare of the guilt-ridden nerd."

This problem, which was merely symptomized by the case of the apparently disintegrating mind of the evolving

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39. A Defence of Poetry, *Shelley's Poetry and Prose: Authoritative Text, Criticism* (New York: W.W. Norton and Co., 1977).

species of “tech writer,” was aggravated, catalytically, in the extreme, by three social factors. First, the accelerating degeneration in public and higher education, over the course of the recent thirty-five years. This is typified by the influence of the 1963 OECD report on education issued by the influential malthusian Dr. Alexander King. Second, the disastrous effect of the post-1963 spread of the “rock-drug-sex cultural-paradigm-shift,” in destroying the intellectual and related emotional mission-orientations of dedication to competence, among secondary and higher education graduates. Third, the past thirty years’ process of combining intentional ruin of the former leading sector of U.S. family farming, and de-industrialization of urban industry, reflecting rabid devotion to “free trade” in general and “outsourcing,” most emphatically. The effects of these trends were aggravated by the introduction of related, novel, and extremely irrational notions of the nature of “intellectual property rights.” A recent novelty expressing the same pathological trend, is the idea of the patenting of John Q. Citizen’s genes; this has the smell of something invented by the notorious Dr. Mengele, or perhaps H.G. Wells’ “Dr. Moreau.”

Over approximately the recent decade, under the impact of the process called “globalization,” even the mission expected of the tech writer, and of the user of the product, have undergone an additional, qualitative change for the worse, to the effect of continually aggravated spread and intensification of functional illiteracy. From the evidence now at hand, it is implied, that the “tech writer” usually assumes that the reader should not attempt to understand the product, but that he should obey literally, and more or less blindly, the instructions supplied. Usually, the instructions themselves are incompetent in one degree or another. Implicitly, at least, the idea that the “provider” has a moral responsibility for being either coherent, or that the instructions given should be competent, has been abandoned; the peddler of the heavily “outsourced” product, shrugs off the complaint, as if to say: “Don’t blame me. I don’t make the stuff; I only sell it. If the instructions don’t work, accept the fact, that things are tough all over.”

Consider the case of problems created by the “outsourcing” of sub-assemblies. That the latter have often been assembled from other sub-assemblies, has become typical of the packaging of the process of production and distribution. The result is expressed in ways which not merely prohibit, but virtually outlaw the intelligent user’s sense that he or she has a right to know what is actually inside the package he is about to ingest. At least, the putative manufacturer ought to know, but often, apparently, he, too, does not. Try to buy a replacement part from the party under whose brand-name the product was sold; how could that putative manufacturer know where to get the part, or how to install it? He bought and installed the assembly within which that component, whatever it is, is buried somewhere, and the design of the component is in some place perhaps unknown.

Such manifest trends signify, that during the recent thirty-

five years, we have passed over, from a production-oriented society, to a consumption-driven society. Ours often appears to be a society with less concern for the nature of the stuff it is consuming, than a desperately hungry rat foraging in the garbage dump. The United States has been transformed from the nation of backyard repairmen, whose stubborn determination to make things work, contributed much to our capabilities for winning World War II. Ours has become a population employed increasingly in relatively unskilled “services,” of persons who are conditioned not to wish to know what they are actually consuming, using, or doing.

“Benchmarking” carries this process of degeneration to the logical extreme implicit in the “information theory” hoax. Benchmarking’s nominal designer of the product, is no longer assured the means to challenge the assumptions underlying the mathematical packages he or she is combining into the design of a product. These are often products which will no longer be tested by former standards of automobile or other manufacturer’s accountability, or for even the simple safety of the prescribed use of that product. It is cheaper (ostensibly more profitable) to kill people, than to lessen the current diversion from income to “shareholder value,” by spending what we used to spend to ensure the safety and other satisfaction of the user. Benchmarking virtually ensures that things move in such directions. It has been a process of slightly more than a decade, in eliminating the existence of a type recognizable as a qualified design engineer.

In summary of that and kindred observations, it is to be said, that as part of the past thirty-six years shift, away from a producer economy, to a consumer society, policy-makers and public have lost the capacity for insight into the requirements of producing the essentials of civilized life. Society has come to view the world economy itself as like nothing as much as an endless nightmare, searching for bargains amid a globalized huddle of gigantic, Orwellian shopping malls. People just don’t think the way they used to, forty years or so ago, and the inhumane, poverty-stricken economic policies which they have come to prefer, show it.

These and related trends, considered as a whole, are reduced to a single underlying issue. The fostering of the cult of “information theory,” has defined a quality of society in which people’s knowledge of what they are doing, or of what is being done to them, might remind us of those students in Jonathan Swift’s tale of Lemuel Gulliver’s visit to the Island of Laputa, where students learned by swallowing slips of paper on which was written the information they were to assimilate in that fashion. The slips of paper might have been written by Eighteenth-Century versions of “tech writers,” who took courses in the equivalent of today’s “programmed learning,” instead of science and engineering. Perhaps, therefore, it was Jonathan Swift, not Norbert Wiener, who invented “information theory,” that as a joke on “ivory tower” varieties of Eighteenth-Century academic asses in general. The breed of such asses has not been improved since.



The pervading issue, among all of those issues listed, and also many other leading contemporary cultural disorders, is the failure of common practice to recognize the essential features of the principled distinction of the behavior of man from that of beasts. In each of the listed, and many additional examples of the same principled social dysfunction, the pathological element is the same. That essential element, is the failure to apply the processes of cognition to the formation and communication of those ideas which are of crucial importance for sustaining the viability of an existing culture.

In his celebrated essay, *A Defence of Poetry*, Shelley described a renaissance, as a period in which there is, as I have stated above, a general increase of the power of imparting and receiving profound and impassioned conceptions respecting man and nature. The expressions of post-1945 intellectual decadence, especially post-1962-65 decadence, which I have just sampled here, typify periods in which these moral and intellectual powers tend to vanish into a condition like that of the Seventeenth-Century Britain depicted by Hogarth, or by Jonathan Swift's *Gulliver's Travels*, or described by Cotton Mather as his observations on the period of decadence of the post-1688 Massachusetts Bay Colony.<sup>40</sup>

In contrast to such periods of decadence, the leaders whose influence distinguished the quality of renaissances, such as the referenced case of the leaders of the Fifteenth-Century Renaissance, walked the user of a technology through the cognitive experience of the passage from the initial, ontological paradox, which prompted the search for the hypothesis which would solve that paradox, through to the experimental work which proved the hypothesis. In all known cases of a renaissance, Shelley's formulation is clearly upheld. Examples of this include, the cultural renaissance known as the German Classic, which was led by such avowed followers of Gottfried Leibniz and Johann Sebastian Bach as Kästner, Lessing, Moses Mendelssohn, Goethe, Schiller, Wolfgang Mozart, Ludwig van Beethoven, and the Humboldt brothers, for the German-speaking world. The examples include the Italy-centered Fifteenth-Century Renaissance earlier.

This effervescence, shown in such renaissances, in the power of communication of "profound and impassioned conceptions of man and nature," always expresses certain specific qualities, which have a common form and character of expression, whether in physical science or in Classical modes of artistic composition. It is the dominant role of those modes within certain influential currents within a culture, which warrant describing such expressions of moral and intellectual fertility as specifically "Classical," as distinct from, and opposed to the quality of the French and English Eighteenth-Century "Enlightenment," for example, or Romantic, modernist, or post-modernist effusions.

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40. H. Graham Lowry, *How the Nation Was Won: America's Untold Story*, Vol. I (Washington, D.C.: Executive Intelligence Review, 1988).

The principle of any such Classical productive experience is the same, in principle, as that of the students in a class who are each simultaneously experiencing the way in which some original discovery of universal physical principle was prompted and accomplished. The successful student had relived the act of discovery and empirical verification. Intellectually, "he now owned" the principle whose act of discovery he had replicated within his own cognitive processes.

The reenactment of the cognitive act of discovery, rather than "programmed learning," for example, must become rec-

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*The United States has been transformed from the nation of backyard repairmen, whose stubborn determination to make things work, contributed much to our capabilities for winning World War II. Ours has become a population employed increasingly in relatively unskilled "services," of persons who are conditioned not to wish to know what they are actually consuming, using, or doing.*

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ognized, once again, as the standard for transmission of knowledge within society. Probably, that sort of sanity about economics will become prevalent, only when the standards exemplified by Wilhelm von Humboldt's program for Classical humanist education, are restored as a model for what secondary education throughout humanity must become.

As a matter of first approximation, we may divide communications expressing the quality of explicitly "cognitive" activity into the sovereign personal act of discovery by an individual, and the process by means of which cooperation in use of those discoveries of principle is motivated in relations among persons within society. Classical modes of artistic composition typify the modes of cognitive cooperation. Plastic and non-plastic modes of Classical artistic composition, especially the non-plastic modes in poetry, drama, and polyphonic music, typify the form of the latter cognitive modes, but the significance of such art is that it also serves society as a model for understanding history, and for formulating policies of government. Examples of this include the opening paragraphs of the 1776 U.S. Declaration of Independence, the Preamble of the U.S. Federal Constitution, and President Abraham Lincoln's 1863 Gettysburg address; each and all these examples are consistent with the intent of a renaissance.

Back during the 1948-1952 interval, as a result of seeing issues implicit in the difference between what we may recognize as a Classical humanist and contrary, morally defective forms of education, I came to recognize a lesson of crucial significance, to be adduced from comparing mathematical formulations used to describe aspects of physical processes, and the often contrasting mental image expressed by a rigorously composed verbal description of what might be presumed to be the same process.

On the surface, a good verbal description of the process and the mathematical representation, could be at least ostensibly consistent. Yet, a good verbal representation conveyed important included notions, which were lost in the translation, as if stripped away by Ockham's Razor, when stated in the generally accepted classroom form of mathematics. Over the course of the 1947-1948 interval, I approached this paradox from the standpoint of Classical forms of poetry, drama, and Classical settings of poetry as song. I posed the question: Why is good Classical poetry superior, as a disposition of mind, over mathematical language, in conveying important ideas of physical science? Years later, I discovered that like the greatest teacher of both Lessing and Gauss, Kästner, the best Classical poets already knew the answer.

In thinking through the apparent paradox, one should come to the eerie, but therefore truthful conclusion, that the act of cognition exists only within the limits of the sovereign cognitive processes of an individual mind; but, that the possibility of the validation and realization of that discovery for social practice, lies in an aspect of "social relations" which can be generated only, paradoxically, by human individuals.<sup>41</sup> When the significance of those cognitive forms of social relations are viewed in a certain special way, the individual develops a quality of personal moral character which sets him or her apart from the run of the mill among nominal leaders, as exceptionally qualified to be a leader in that society. Friedrich Schiller's follower, the Wilhelm von Humboldt who launched Nineteenth-Century Germany's system of Classical humanist education, has emphasized this same connection which I came to recognize from my own vantage-point, during the course of the 1947-1952 interval, between Classical humanist education and the development of the moral character of the student.

Up to the present time in known history, the primary distinction of the individual of truly moral character, from the more ordinary members of society, is a certain kind of impas-

sioned attachment to his, or her personal cognitive relations to the greatest known creative thinkers of both the past and the future. By reliving the experience of replicating the act of original discovery of truly universal principles from the past, that individual brings that moment from that original discoverer into his, or her own sovereign cognitive processes. He, or she brings that cognitive moment from the mind of the original discovery to life within his or her own living cognitive processes. If the education, and related development of the young person is steered with great emphasis on this kind of cognitive act, this quality of historically determined cognitive experience affords the young person an insight into the proper definition of truthfulness.

With the ground so lain in the educational and related development of the young, that young person will soon begin to think of his, or her own future adult life as having the character of a personal mission. The child will express that sense of mission in such forms as describing the importance of the profession, or equivalent, he or she intends to accomplish "when I am grown up." This is often expressed with a manifest aura of spontaneity and passion; one senses that that child "owns" that sense of mission.

For the Christian, for example, the sense of Jesus Christ's gripping sense of mission, expressed in such ways as J.S. Bach's settings of the Passions of St. John and St. Matthew, typifies the sense of the immortality of the individual cognitive self residing within the mortality of the individual. Such a person lives for all humanity for all time, with special emphasis on the mission implicit in the society, the culture, with which he or she is immediately most closely associated.

The distinction of the leader, is that he or she puts that universal mission and interest foremost, and resists the diverting, immoral temptations flowing from a contrary passion for "my own and my community's immediate interests, in the here and now." The person who is incapable of meeting the requirements implicit in such a challenge, excuses himself in such forms as the following expression: "Yes, I care about the future of my country and the world, too, but my immediate family and community interests in the here and now, must come first!" The less moral person can sometimes lend lip-service to the words: "Of course, I know that since I am mortal, I should care about the kind of world I leave behind me, but I must work within the culture of my society"—and, there we have, once again, as in Shakespeare's case of Hamlet, the moral failure.

Hamlet is not the cause of the doom of his Denmark. He, like Fortinbras, is an expression of the fatal moral flaw which pervades the leadership, and more, of his culture at that time. His fatal error is to be an obedient participant in the "popular culture" of the realm; only a leader who could save the realm from itself, would have been of any use in that circumstance. Between being and not, he chose, explicitly, in the course of that soliloquy, "not to be." Only the leader who marches out of step, can bring that parade safely across that bridge of crisis

41. On the subject of the form of socialized relations which develop between man and beast within the framework of social processes, my wife and I have come to share the relevant view of the scientist-theologian Nicholas of Cusa. I mean the notion, that the inferior species, the "socialized" animal of household and herd, "participates in the higher species," man. This is demonstrated, perhaps most easily, or most commonly, in the laughter-filled play between child and puppy. The puppy participates happily in the games invented by the child, and can learn those games, as animals in the wild also do, but can not invent those games, as the child does. This view of the matter encourages an impulse for humane dealings with both cultivated and wild animals.

to the safety of the future.

The true leader, as I have just summarily described those distinctions, is a leader because he, or she places the emphasis on cognitive relations, rather than merely sense-perceptual ones. Herein lies Leibniz's passion for the truthfulness which Kant and Kant's followers abhorred. There is a corrupted Faust lurking within the hide of every Kant. The Kantian, or his like, abhors the truth, because the truth might deprive him of his preference for those circus-like learned tricks, by means of which he hopes he might reap the sensual pleasures of Earthly Paradise.

It is when the individual view of society is that of a sovereign cognitive agency, maintaining the continuity of the development from past into future, that the individual has a sense of himself, or herself which is truly a moral one. That is to say, it is only in that view of the immortal self, the cognitive self, lodged in the mortal passage from the past, to the future, that that person is motivated to recognize his, and his society's essential self-interest. He finds that essential self-interest, in the outcome of the present for both that society in particular, and humanity in general. He locates himself, or herself, in personal devotion to the intention that society's self-interest will be honorably served. That is precisely the moral quality which the putative leadership of today's United States has lost, a quality which has generally withered away, decade by decade, since the untimely death of Franklin Roosevelt.

Now, that summary given, take into account what has been explicitly written, or referenced in this report, up to this point. The challenge of statecraft, is to effect and maintain progress in the quality of the human condition across successive generations. That must be the orbit of our intention, in the sense that Kepler introduces intention as the notion of an efficient, universal physical principle. Against the backdrop of such considerations, the relative quality of the type and mode of communication employed to organize scientific and other forms of cooperation, becomes a subject of crucial importance in itself, as I am stressing and elaborating some essential features of that argument here.

The challenge of statecraft, especially in times of crisis, is the production and role of those qualified to be leaders, so qualified by their dedication to fostering the influence of the higher morality within the mass of a general population which otherwise can not free itself from the fatal trap of small-minded, and hence corrupting, intrinsically immoral obsession with the smallness of soul expressed by obsession with personal family and community relations.

This brings us to a crucial aspect of the matter which Shelley addressed in his *A Defence of Poetry*, the specific role of ambiguity in the cognitive aspects of communication.

### Ambiguity As Truth

As Plato echoes Heraclitus in the *Parmenides* dialogue, the remedy for the fatal ontological paradoxes of the Eleatics



LaRouche's 1947 investigation of the principle which sets the greatest Classical Greek sculpture apart from the archaic, was an integral part of his reaction against Wiener's reductionist "information theory." Here, the Winged Victory of Samothrace.

and their like, is recognition of the universal principle of change. We must recognize that, as a matter of universal principle, nothing is constant, but constant change. Thus, cognition shows us an experimentally provable image of our universe, which is unlike a naive reading of the images of sense-certainty.

In life, and in the self-ordering of the affairs of the human species, change ceases to be a nebulous idea, when that term is defined as broadly interchangeable with anti-entropic action, as I have defined such a notion for the science of physical economy. The quality of anti-entropic change specific to the human species, to society, to the sovereign nation-state republic, is knowledge of the type of cognitive action which proceeds from ontological paradox, to experimentally defined universal physical principle.

Now, look! How is the specific quality of cognitive change expressed in language? In principle, it is through the use of the subjunctive, and in the resort to the devices of irony in general, and metaphor in particular, to impose the expression of the hint or actuality of an ontological paradox upon what might otherwise be a syllogistic, or outrightly sophistical form of "spin."

In the mouth of a moral speaker, the ambiguity of these apparent literary devices, never appears, except when it occurs truthfully. Such is the specific quality of truthfulness which sets Classical artistic composition in opposition to any other mode. We must never refer to a phenomenon as ambiguous, unless the object of the statement is itself actually ambiguous.

For example, take the case of Fermat's argument for a concept of "quickest time," as opposed to "shortest distance." When Fermat compared the reflection of light with the refraction of light, the difference between reflection and refraction was, in truth, an objective ambiguity in the propagation of light. The juxtaposition of the two cases, for the propagation of light, was thus a true ontological paradox. The solution for that ontological paradox was among the most crucial of the continuing discoveries of the succeeding two centuries, from Fermat through Huyghens, Leibniz, Bernouilli, Fresnel, Ampère, and Wilhelm Weber: all dealing implicitly with the physical principles underlying electromagnetic propagation in general.

To express a phenomenon as ambiguous, as by resort to mere tricks of symbolism, when one has no knowledge on which to premise that representation, as Romantic poets and playwrights often do, and modernists do invariably, is a more or less vicious form of lying. The ability of the conventions of language to convey those objective ambiguities of meaning which qualify as ontological paradoxes, is therefore a quality of Classical modes of poetic and related composition, on which we largely depend for those discoveries which lead to progress in the human condition, economic condition included.

This will bring us here to a point to be emphasized respecting the difference between my conception of the social organization of the Biosphere, and that implicit, to a significant degree, in Vernadsky's writings on the subject.

Throughout this report, I return repeatedly to focus on two closely related, if distinct implications of the principle, that the universe is composed of three component phase-spaces: abiotic, pro-biotic, and cognitive. In each of these three, the characteristics of the three phase-spaces are defined in terms of a common, universal standard of physical-experimental proof of universal physical principles. In each instance, in turn, the discovery of the principle demonstrated by the physical experiment, was introduced for experimental study by a preceding hypothesis. This hypothesis was provoked, in the sovereign cognitive processes of individual minds, by scrutiny of experimental evidence of an ontological paradox.

Now, respecting those processes of cognition, within which all of these discoveries of principle occur, cognition itself has internal laws, which are laws in the same sense that we define laws discovered to operate within the respectively abiotic and pro-biotic domains. The nature of those laws internal to the efficient forms of cognitive relations among individuals, are most readily identified by comparing the princi-

ples of Classical forms of artistic composition and performance, to certain intrinsic failures incurred by the very nature of the violation of an otherwise more or less indispensable and comprehensive mathematical physics of a Riemannian type.

Early during the 1948-1952 interval, my attack on the fallacy of Wiener's, and also John von Neumann's work, was enriched by reflection upon my earlier attraction to William Empson's *Seven Types of Ambiguity*.<sup>42</sup> From my special standpoint, I saw flaws in some aspects of Empson's work, but, that taken into account, it was a very good, mature, and searching piece of scholarly work. I recapitulated what I gleaned from him, by working from the standpoint of the notion of cognitive processes which I had acquired in the course of my adolescent and later pro-Leibniz attack on the absurdities of Kant's Critiques.

A truthful ambiguity, whether in the description of a rigorously defined experimental subject-matter, or in the composition of Classical poetry, has the characteristic significance of betraying the shadowy, but efficient existence of something which, in reality, exists outside the scope of a statement lacking that ambiguity.

The physical principle of ambiguity is beautifully illustrated for study, as I did during 1947, by seeking to identify the physical distinction, on principle, which sets the greatest Classical Greek sculpture from the archaic. I began to equate this, already, then, to the roles of the subjunctive, irony in general, and metaphor in particular, in poetry, drama, and Classical song-settings of poetry. This came to serve as an integral part of my reaction against Wiener's radically reductionist notion of "information theory."

There is a recognizable element of imbalance in the Classical piece. It is not an arbitrary imbalance, but, to succeed, must be credibly a body caught in mid-motion. The same is the case in Bach's method of well-tempered counterpoint, in which the development of the entire composition expresses a single conception of contrapuntal development in mid-motion. In Classical poetry, it is irony, ambiguity, especially true metaphor. All Classical ambiguity is truthful, not arbitrarily fanciful; it expresses a true paradox, for which the mind must supply a solution. It is Classical art, only to the degree that the solution to the paradox, is of the quality of a truthful act of cognition.

Try an elementary, but crucial sort of experiment. Take a mathematical expression from the domain of mathematical physics. Now, think of describing the corresponding physical process as such, which leads from an initial experimental form of ontological paradox, through the generation of an hypothetical solution, to the experiment which expresses the proof of that hypothesis. Now, express that process, as a physical, rather than mathematical form, in poetry, or prose. Best

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42. William Empson, *Seven Types of Ambiguity* (Middlesex: Penguin Books, 1961).

of all, if you have the skill for it, compose a compact Classical form of poem, which presents each and all phases of that paradox, hypothesis, and proof. Add nothing not relevant to that mission. No symbol-mindedness, please! No frosting on the cake! If you succeed in that mission, you will probably understand the principle of metaphor as I do.<sup>43</sup> Focus on the essential cognitive feature of that representation: the paradox, as I have referenced the relatively simple, but richly devastatingly significant case of Fermat's paradoxical juxtaposition of reflection and refraction.

The relative fault in the mathematical formulation, is that, when applied according to today's generally accepted classroom tradition, it lacks poetry. It lacks the obligation of the poet, to embed a truthfully stated ambiguity in the composition. It fails to compel the mind to capture the image of the idea in mid-motion, the form in which all true ideas exist. "Q.E.D." is a lie, if it is claimed on the basis of what can be demonstrated at the blackboard.

For example, the danger to the student's (and teacher's) mind, in at-the-blackboard mathematics, even mathematical physics, is that the victims lose sight of the reality of the matter, in their zeal to find a deductive or similar form of literal meaning. An elementary example of this, is the attempt to teach at-the-blackboard Euclidean geometry, in which no physical action is taken into account. Kepler's observation of the "equal time, equal areas" definition of the planetary orbit, and of the harmonic ordering within the array of Solar orbits, are examples of an ironical evidence of the existence of an underlying physical principle governing the way the geometry of the situation unfolds. The function of the catenary as the relevant model for isochronic action, is among the best pedagogical exercises for showing the relationship between universal principles of geometries (e.g., orbits, cycles) and physical action.

Ideas are communicated only as what is not said. They are imparted, as Plato's Socratic dialogues do: as the stimulation of the creative (cognitive) powers of the mind, by posing an ambiguity which impels the mind to generate the idea which replaces the ambiguity as such.

The point being developed should be restated for physical-science practice as follows. The characteristic activity of competent physical science, is the discovery of verifiable hypotheses which are generated as solutions for experimentally defined ontological paradoxes. This is the characteristic of an original discovery; it is also the characteristic of the individual's reenactment of a valid discovery of a universal physical principle. When we describe this characteristic feature of scientific activity to a Classical poet, such as a Shakespeare, Shelley, Keats, Goethe, Schiller, or Heine, his comment would be: "Aha! We Classical poets call that the principle governing irony and metaphor!"

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43. Try a famous model, Shelley's *Ozymandias*. Compose according to the kinds of restrictions accepted by Shelley on that occasion.

Think of how much effort was expended, from Fermat, through Huyghens, Leibniz, Bernouilli, Fresnel, Ampère, et al., in search for a clearer, and deeper understanding of the ironical distinction between simple reflection and refraction. From Kepler through Gauss and Riemann, the essence of successive steps of fundamental scientific progress, is the ontological paradoxes inherent in the mathematical notions of number and of geometry, which alarm the mathematician into recognizing that physics is not a product of the application of mathematics, but, rather, that good mathematics lies essentially in the paradoxes which overturn previously accepted

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*The relative fault in the mathematical formulation, is that, when applied according to today's generally accepted classroom tradition, it lacks poetry. It lacks the obligation of the poet, to embed a truthfully stated ambiguity in the composition. It fails to compel the mind to capture the image of the idea in mid-motion, the form in which all true ideas exist. "Q.E.D." is a lie, if it is claimed on the basis of what can be demonstrated at the blackboard.*

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teachings of that subject, paradoxes of such types as isochronism, least action, and so on, which ultimately reveal themselves to be expressions of something superior to mere mathematics: physics.

The physical world's existence, does not lie within the domain of sense-certainty as such. It exists as the reality which prompts those shadows we know as sense-perceptions. The prompting of a sense of reality occurs by forcing sense-certainty to reveal the fact that its objects are merely shadows. We must prove the existence of that which causes the shadows, by demonstrating the efficiency of a conception through which we, physically, can control the behavior of the ambiguity arising in the domain of shadows. That is the very essence of scientific method. It is also the essence of successful modes and forms of Classical artistic composition.

The power of Classical poetry, and of the development of language under the burden of being a medium of Classical poetry, points our attention to the origin of those qualities of such a literate form of language, which make it implicitly superior to mathematics in communicating ideas about the





“What poetry there is in Gauss’s mathematics!” Here, Carl Gauss (left), and his collaborator Wilhelm Weber.

physical universe. Language was developed as a tool of characteristic human behavior. This is more readily seen from the standpoint of Leonardo da Vinci’s attention to the tuning of voices according to Florentine *bel canto* voice-training. The argument is much clearer, when we examine the significance of *bel canto* voice-training as the basis for the development of well-tempered polyphony by Bach.

The very qualities of Classical poetry, and Classical well-tempered polyphony, which offend the mathematics student’s blind zeal for strictly literal meanings, does not make the student a better mathematician, only a relatively sterile personality, and an awfully bad artist.

Take a lesson from a scientist who was a leader in Classical art, and also in mathematics, our friend, and Benjamin Franklin’s, Kästner. Kästner was apparently the first to insist explicitly that we must orient future mathematics to the goal of developing an anti-Euclidean geometry, rather than a non-Euclidean one. Great progress toward this goal was made by his student Gauss, on the subject of curvature. The objective was reached by Gauss’s student Riemann, as announced in the latter’s habilitation dissertation. Kästner told his collaborators and followers, we must not attempt to improve upon Euclid, we must challenge the fallacy-ridden, aprioristic assumptions which underlie Euclid’s principles, thus introducing an anti-Euclidean geometry.

Take the case of Kästner’s most famous student, Carl

Gauss. What poetry there is in Gauss’s mathematics! Or, the discoveries of Gauss’s most celebrated student, Bernhard Riemann.

That said, on background, apply the same principle of ambiguity to a crucial problem in economics. I refer to the hoax of “free trade.”

### ‘Free Trade’ As Colonialism

Take a typical economics example of such ambiguities. Take a factory from the U.S.A. Move it to a nation in Asia, where labor is said to be cheaper, and so forth. In this case, it has been wrongly assumed among those who do not understand economics, that that sort of “outsourcing” will increase the profitability and growth rates of the world economy. The latter, foolish belief, has been the leading feature of the argument in favor of the deadly pandemic disease known as “globalization.”

For a comparable case, examine Henry C. Carey’s book on the slave trade.<sup>44</sup> The person ignorant of the ABCs of economics, tends to believe that the U.S. economy as a whole profited from slave labor. Carey demonstrates that, while the British monarchy and some Americans were enriched individually by the traffic in the products of slave labor, the U.S. economy as a whole suffered a massive economic loss as a result of the looting generated as the effects of slavery. The surge of the U.S. economy to great power status, during 1861-1876, was a result of liberating the nation from these inherent effects of slavery.

Compare the case of the transfer of a manufacturing unit to Asia, from the standpoint of Carey’s study of the effects of slavery on the U.S. economy.

Should we encourage the promoting of modern manufacturing in Asian nations? Yes, without doubt. The benefits of raising the productive powers of labor there, for the consumption of the internal economy, should be obvious. Should we, therefore, substitute cheap-labor production in Asia, as a source on which the United States depends for its products? It would be folly to do so, and of no benefit, either to Asia, or, in the end, the U.S.A., either.

This is true by the nature of the interdependency among what I define as the economy’s political, social, and economic characteristics: this use of characteristic is adapted from Bernhard Riemann’s definition of that term, as a term of a physical form of differential geometry. A national economy is not the sum-total of its independently defined component parts, such as individual firms. It can not be competently represented, as a Euclidean geometry does, as a mere statistical description of observed motions among events. Rather, it represents a more or less inseparable sort of functional interde-

44. Henry C. Carey, “The Slave Trade Foreign and Domestic,” in W. Allen Salisbury, *The Civil War and the American System: America’s Battle with Britain, 1860-1876* (Washington, D.C.: Executive Intelligence Review, 1992).

pendency among the totality of its principal such components, the reciprocal interaction of the whole.

In other words, if two identical productive facilities, with identical designs of products, and so on, are situated in different national economies, the contribution of the average productive powers of labor, meeting identical specifications for employment, will vary according to the characteristic relative productivity of each economy as a whole. The difference will be of the significance of a difference in attributable physical-economic curvature of the space-time represented by the respective economy. For example, the proposal that developing nations rely on tourism, rather than building up basic economic infrastructure, is among the most efficient ways of ensuring that such a nation prevents itself from developing successfully up to modern standards of productivity per capita.

For example, from its beginnings as English-speaking colonies in North America, the welfare of that nation depended upon its sovereign access to the development of basic economic infrastructure, agriculture, and manufacturing, and technological progress in all of those categories. Among the related strategic features of the U.S.A. toward the close of the Eighteenth Century, was the advantage represented by the fact that the average real income was more than twice that of the United Kingdom. The cultural standard of literacy of the American "Latin farmer," typified the fact that the literacy of the U.S. household was better than twice that of the United Kingdom. The relative strength, and the interdependency of these kinds of essential sovereignty assets of the U.S. economy, was a characteristic of the U.S. economy as a whole. This was a characteristic of the whole which was reflected as a characteristic of the activity within the parts of the whole.

In former, saner times, not many decades ago, the prospective investor would locate the development of industries on the basis of studies of the characteristics of the labor-force, basic economic infrastructure, and so forth, of the localities compared. The level of education, and of technological aptitudes of the population generally, and labor-force more narrowly, were among the prime considerations in choosing a location for the new plant. Among these considerations, were transport of goods, in and out of the locality, the quality of the local educational institutions, and geographical proximity to relevant categories of relevant suppliers and customers.

In that practice, intelligent managements, of either government or industry, would be assessing the prospective performance of the individual enterprise, within the terms of the relative economic characteristics of each locality considered.

In assessing the potential for medium- to long-term economic development in a so-called "developing region" of the world as a whole, the same considerations are to be applied in reverse. How should the potential of the population, and of various regions, be developed, that to the purpose of optimiz-

ing the rate of improvement of the economic characteristics of the national economy?

What has tended to happen, under recent decades' trends of exporting the productive capacity of the United States to poorer nations, is that the U.S. interests involved have mimicked the approach which the Portuguese, Spanish, Dutch, British, and French colonial powers took toward their colonies. Those powers were lustfully zealous in their zeal to extract from the colonies, but usually with more or less disastrous effects respecting the possible, alternative goal of bringing those colonies as a whole up to the level of the characteristic productive potential of a modern European society.

The referenced European colonial powers, had a certain type of practice, from the establishment of that form of colonialism beginning the late Fifteenth and early Sixteenth Centuries. All were dominated by the influence of the imperialist maritime power of Venice, and most of the practice by Portugal, Spain, the Netherlands, England/Britain, and France, was either done in partnership with Venetian rentier-financier interests, or explicitly modelled upon Venetian precedents for this practice. The leading exception, but not the only exception, was the development of the English colonies in North America. Thus, if we identify the prevailing practice of colonialism initiated by the Portuguese, Spanish, Netherlands, British, and French interests, as the Venetian or British model, we are not misleading anyone by stating that there are only two post-Fifteenth-Century models for development of colonial regions, the Venetian-British and American types. By types, we mean paradigms, not necessarily always the practices to be observed in the relevant locality. In this comparison, the practice of slavery, first introduced by the Portuguese and Spanish colonialists, is a manifestation of the Venetian-British type.

The American paradigm is otherwise known as the American nation-building paradigm. This means that economic and related policies are aimed at achieving a healthy form of what is called a "full set" economy. "Full set" should be taken to signify, among other things, that the economy is adapted to achieving and maintaining efficient technological parity with other nations generally, and aiming for parity in physical standard of living and relative productivity among the labor-forces.

By contrast, the British System, whose characteristic features were established under the direction of the British East India Company during the Eighteenth Century, is characterized by its design for a combination of colonialism with looting of nations through a system of international loans, similar to the looting of the nations of Central and South America, by the U.S.A. and others, under the post-1971 "floating-exchange-rate" IMF system. The contrast between the two historically leading systems of the world during the past two centuries, the British system, loosely termed "capitalism" and the opposing American System of political-economy, is essentially the following.

## American vs. British System

The American System is premised upon the principle of promotion of the general welfare, and upon the so-called American patriotic intellectual tradition, which President Franklin Roosevelt largely defended, and of which I am a leading spokesman today. It is aimed at that social and economic result in its domestic affairs, and is inclined to promote what is termed today a “multi-polar” configuration of power, a community of principle, based upon the notion of the general welfare, within, and among the members of a system of perfectly sovereign nation-state republics. In service of the promotion of the general welfare, the American System is intrinsically protectionist.

The British system is premised upon directly opposite fundamental principles, those of Thomas Hobbes, John Locke, Bernard Mandeville, Adam Smith, Jeremy Bentham, et al., as developed by the British East India Company’s Haileybury School ideologues. It is based upon the predatory principle of conflict of each against all, and upon strictly predatory and hedonistic motivations on all accounts. It was, until recently, strictly protectionist in respect to its homeland market, but was the leading advocate of the predatory doctrine of “free trade” in matters of trade and international loans. U.S. circles which think and act in accord with the anti-American, British model, are known traditionally, since the American struggle for independence, as by Franklin Roosevelt, and by me, as “American Tories.”

The function of “free trade,” in world trade and in the matter of international loans, is to force down the prices of other nations to the lowest, and to pursue this policy as a way of ensuring their relative subjugation to the imperial interests of the British system and its American Tory co-thinkers. Thus, the recent decades’ Anglo-American advocates of “free trade” and “outsourcing,” have dumped upon so-called “emerging markets” the opportunity to produce, but only under terms, prices, and conditions, which will efficiently prevent those “markets” from achieving the goals of their general welfare, and will enable the Anglo-American financier interests to loot those “markets,” at least for a time, more energetically and copiously in the process.

The essential premise for a policy informed by the American intellectual tradition, toward both other nations and our own, is that, in fact, the relative cheapness and quality of the product we can obtain through trade, is important to all nations. These admirable qualities are not achieved by cruelly reducing the price of labor in the vendor nations, as current IMF “conditionalities” do, but by advancing the productive powers of labor through raising the standard of living and technological practice in the vendor nations. In other words, measure how much quality can be obtained from a vendor nation, per average per-capita hour of work by the labor-force of that vendor nation. This depends upon our recognizing, that the standard of living and technology in the vendor nation will determine that nation’s ability to continue to

offer us that result.

The object is to increase the productive powers of labor of all nations, which can not be anything but of mutual benefit to each and all. This is accomplished by raising the standard of living and productivity, per capita and per square kilometer, among each and all nations.

Expressing the difference between these opposing roles of the American and British models, the British model assumes that the universe is a Hobbesian-Lockean nightmare, ruled by a principle of universal entropy. In this universe, one man’s gain can occur only as another man’s loss.

This was the assumption introduced to England by the English translation of the work of Venetian author Botero, and by the Venetian Giammaria Ortes whose English-language translation was plagiarized by the British East India Company’s Thomas Malthus.

The contrary, American System, whose essential features were derived chiefly from the influence of the anti-Lockean Leibniz, recognizes the effect of man’s cognitive action as intrinsically anti-entropic, as Benjamin Franklin’s sometime host Abraham Kästner, the teacher of Carl Gauss, did. In the American system, cognitive action generates the effects of anti-entropy. Trade among nations which is premised upon sharing the fruits of cognition, contributes to both the importer and the exporter, more or less equally. The source of this anti-malthusian gain, is the fostering of the role of the educable creative powers of the individual human mind. This is accomplished by such means as developing the cognitive powers of the individual, and by reshaping production to rely increasingly upon forms of economic activity which incorporate more advanced expressions of scientific and technological progress.

My opposition, as an American patriot, to the generally taught, loose-boweled use of the term “capitalism,” should be registered again at this point. It should be sufficient to read the U.S. Declaration of Independence, the U.S. Federal Constitution of 1787-1789, the Reports to the Congress by U.S. Treasury Secretary Alexander Hamilton, the defense of the American System by Mathew Carey, Friedrich List, Henry C. Carey, and Abraham Lincoln. “Capitalism,” is used as the term was used by the Karl Marx who, according to a knowledgeable study of his writings, lacked any competent knowledge of U.S. history and the American System. The term is used in a similar way by not only Marx, but other admirers of the British system. That meaning is wholly antithetical to not only the American System, but the notion of the sovereign nation-state republic in general.

Instead of using the misnomer “capitalism,” we should recognize the kind of division of labor between the state and private entrepreneurship described so aptly by Treasury Secretary Hamilton. Hamilton’s celebrated *Report on the Subject of Manufactures*, is the most relevant, of early official U.S. documentation on this account. We should see that not merely as peculiarly the U.S. patriotic tradition, but as the



implicit design of economy under any sovereign form of nation-state republic.

Thus, from the American patriot's standpoint, the flaw in the economic design of the Soviet system, was the lack of efficient comprehension of the indispensable, voluntarist role of entrepreneurship, and of the proper role of government in preferring entrepreneurship to that implicitly oligopolist reign of financier-controlled large corporate organizations which has looted and supplanted the U.S. entrepreneur since the 1901 assassination of President William McKinley.

This distinction is made clearer by considering my own arguments on the subject of the most significant flaw internal to the non-military side of the Soviet economy as such. That is to say, that the goal of modern economy, as since France's King Louis XI and England's Henry VII, has been to promote the freeing of the creative cognitive powers of the individual for the development of those innovative practices through which scientific progress is realized as technological progress in development of both the processes of production and designs of products. However, since the individual entrepreneur, as distinct from the public stockholders' corporation, usually represents an enterprise employing between several and a hundred-odd employees, the entrepreneur can not flourish in a natural way without extensive measures of protection, measures which can be supplied efficiently by no other agency but government.

Thus, if we consider all of the costs of production of a product, the cost of producing the same average quality of product in a so-called developing nation, is higher, if all physical-economic costs, including long-term ones, are considered. As we see in the history of European colonial practice prior to 1939, the apparent development of some local parts of the colony's economy, came at the expense of the looting of other sectors of the colony. Consider, for example, the apparent development of a port-city, as in the British colonial history of rural Bengal, in light of that city's non-functional, or nearly non-functional relationship to the economy of the interior.

The general lesson to be adduced from evidence of the type presented by the case of colonialism, is that, once again, as in parts of the preceding discussion here, the value of the individual productive, or related act, lies in the relationship between the quality of the individual, or local action considered, and the characteristic of the national economy, for example, considered as a whole. This is typified by the role of the general forms of basic economic infrastructure in determining the characteristic potential of the nation, or region in which the individual's, or other form of local action occurs. The relative productivity of a national economy, lies not in the sum of its individual parts, but, rather, in the crucial relationship between the character of the individual or local action, and the characteristic of the national economy, or larger region, considered as a whole.

Thus, for example, when we permit the looting of a large

## President McKinley: 'Cheap Men Mean a Cheap Country'

President William McKinley's (1843-1901) assassination was a turning point in history, against the Lincoln tradition and in favor of the British free-trade system. In a speech at the University of Pennsylvania, McKinley denounced the mind-set of the free-traders:



"They say 'everything would be so cheap,' if we only had free trade. Well, everything would be cheap and everybody would be cheap. I do not prize the word 'cheap.' It is not a word of hope; it is not a word of comfort; it is not a word of cheer; it is not a word of inspiration! It is the badge of poverty; it is the signal of distress; and there is not a man in the audience, not a white-haired man, who, if he will let his memory go back, will not recall, that when things were the cheapest, men were the poorest. . . . Cheap? Why, cheap merchandise means cheap men, and cheap men mean a cheap country; and that is not the kind of Government our fathers founded, and it is not the kind their sons mean to maintain. If you want cheap things, go where you can get them. . . . We want labor to be well paid."

See John Ascher, "Remembering William McKinley 100 Years After His Assassination," *New Federalist*, Sept. 3, 2001.

region of the world, such as Central and South America since 1971-1982, or sub-Saharan Africa, we lower the productive potential of regions such as North America and western Europe. This points to the inherent idiocy of efforts to apply contemporary standard financial-accounting practice to economies, and, therefore, the intrinsic, potentially criminal insanity of current monetarist theory in general.

Developing nations should be given access to full-set capabilities, because they need those capabilities for both internal development, and to acquire the means to participate in the world economy in an equitable way. However, the real cost of production is not cheaper in those nations, except as looting of them might appear to be so for some part of the population; the average of the total social cost, which is the real cost, is higher than in the industrially developed nation.

Those observations considered, to explore the role of ambiguity in a more thorough way, consider the import of Vernadsky's demonstration that, when Vernadsky's proofs are viewed as situated from the standpoint of Riemannian differential geometry, the universe is composed of three distinct but interacting sets of universal physical principles, corresponding, respectively, to the domains of the abiotic, living processes, and cognition. The very existence of viable economies depends absolutely on ambiguities which reflect the determining role of a set of principles which today's prevalent accounting practice implicitly denies to exist: the human cognition on whose actions the continued existence of economies depends absolutely. All competent economics focuses upon avoiding the common ignorance of human reason among most practicing economists today.

On such and related accounts, there are sundry features to realizing such objectives, but one is of both overriding and underlying importance: the development of the per-capita cognitive powers of each nation, and of humanity as a whole.

The nature of these relations is made clear only when we take the nature of physical-economic cycle into account, as I have promised here. Turn to that matter now.

## B. The Structure of Cycles

That much said, now, for this moment at hand, I focus the discussion on the elementary features of the functional definition and role of medium- to long-term economic cycles. I include a focus on the aspect of cycles which, as I have just emphasized above, is presently not recognized within the financial-accounting profession or related circles: the functional value of the individual's physical-economic activity, as it must be assessed from the standpoint of the cyclical form of the national-economic, and international economic processes in which that activity is situated.

From my first enterprise in forecasting, which took shape back during 1954-1957, I based my method for study of short-to medium-term processes, on consideration of the medium-term capital-investment cycles inhering in certain post-1954 changes in national credit and related features of economic policy. A study of the methods of credit-creation used for marketing of automobiles, was a central, but, yet, only a pivotal feature of what emerged then as my pioneer venture in forecasting for national economies. I assessed the relevant individual manufacturing operative, for example, as, on the one side, a participant in production, and, on the other side, at the same time, the user of the product.

The pivotal problem which I addressed by that approach, is the counterproductive tendency to assess the role of the manufacturing operative, for example, from a reductionist's cost-accounting standpoint. The role of the individual's cognitive potential in the functioning of the process as a whole, is either implicitly denied by such financial accounting practice, or is relegated to discussions held apart from the general-

ity of the production-process as a whole.

One of the more striking indications of this, during my 1955 studies of the problems of U.S. automobile marketing, was the not uncommon problem of the coke bottle, or remains of a production operative's sandwich, within the walls, to so speak, of the automobile delivered to the retailer. Backtracking that phenomenon, showed that the efforts to design production and product according to such natural physiological characteristics of eye- and limb-movements, were already being implicitly discarded (even long before the notorious 1970s), in the effort to squeeze point-of-production cost-reductions out of the process. The cognitive factor in productivity, was being squeezed out of the operative's role in production.

It is useful to assess that kind of problem from the vantage-point of the role of *Auftragstaktik* in German military training since Scharnhorst (until recent decades). The touch of excellence, in tactical features of combat, as in production, is that cognitive "something extra" supplied by the subordinate leaders on the local ground, to the purpose of making the adopted mission successful in ways which could not have been anticipated at the higher levels of the command. The crucial feature of production, is the presence of a human being, rather than a programmed robot at the point of production.

Cognitive thinking, even about one's local place in the process of production, reaches outward, as if by instinct, to think of the product and its use from the vantage-point of the economy as a whole. The thinking operative is concerned about the quality of basic economic infrastructure in that locality, and recognizes a relationship of that to both the general conditions of life in that locality, and also the enhancement of the net productivity, in both quantity and quality, of the product being produced in, and shipped from that locality. He or she tends to adopt the firm for which he works as his own, and is concerned that that firm's product should be one deserving of pride. Similarly, he or she thinks of the real components of family income, not as something he or she "gets," but as something which our nation either produces, or imports. Overemphasis on financial cost-accounting, blurs or even suffocates the cognitive impulse in the operative, and others, and thus blurs the reality, that what we consume is an integral part of what we ourselves produce.

"Outsourcing" is thus, not only an affliction of the U.S. unemployed, but also a grave moral problem for the U.S. population as a whole. The sense of human identity of the present employee, and the former employee discarded onto the scrap-heap, has been attacked with serious moral effects on the ability to produce.

For example, by taking into account the known, typical span of the product's useful life, and including, for U.S. standard automobiles of that period, the role of the new-car/used-car resale-cycle, an approximation of a pervasive production-consumption cycle, expressed at every local point in the economy, was introduced. By comparing various important hard-



In his 1955 studies of U.S. automobile marketing, LaRouche noted the relevance of “the not uncommon problem of the coke bottle, or remains of a production operative’s sandwich, within the walls, to so speak, of the automobile delivered to the retailer.” Here, the last cars roll off a Ford assembly line in Mahwah, New Jersey, in 1980, prior to the plant’s closing.

commodity products with the case for automobile marketing, an interesting, accurate, mid-1956 forecast of an early and deep 1957 recession popped out. A modest accomplishment, but a qualified novice’s good first try at professional forecasting.

Most of published forecasts by notable others from that same period happened to be badly mistaken. I considered my own success only something better than standard economic analysis, until I discovered how stubbornly wrong-headed most published forecasts continued to be over the same period, into 1958. During later 1958 and 1959, my initial success of 1954-1957 prompted me to attack a problem in long-range forecasting. What would be the challenge faced by the U.S. economy as a whole, should Arthur Burns’ doctrines, or their like, be extended deep into the coming decade?

By 1959-1960, at the same time that I developed a proof, against MIT’s Marvin Minsky et al., why the attempt to establish what is now called a “new economy” would be a disaster, I reached the following general conclusion about the U.S. economy of the 1960s. If the U.S. continued to follow the pattern implicit in the Arthur Burns policy-syndrome, the second half of the 1960s would be dominated by a series of international monetary crises, leading toward a breakdown of the existing Bretton Woods monetary agreements. I maintained that forecast throughout the 1960s, pointing to the 1967 sterling crisis, the January-March 1968 U.S. monetary crisis, and the 1970 Penn-Central/Chrysler crises, in turn, as typical expressions of the situation I had forecast as likely for the second half of the 1960s. Thus, with the mid-August, 1971 break-up of the fixed-exchange-rate monetary system, I was

the only economist on the visible public record, whose forecast for the economy as a whole had held up over the course of the preceding decade.

My interest during all of this, was not to make a career as a forecaster. I was occupied with the development of the application of my discoveries of the 1948-1952 interval to the existential problem building up for the U.S. and world economies. The issue was: How to design policies which would enable the United States and other nations to avoid the disastrous blunders of the U.S. Truman Administration, and also the types of errors which Burns’ influence had embossed on the Eisenhower Administration. As an associated effort, I included special attention to the axiomatic fallacies of assumption embedded in the doctrines generally accepted among notable Marxist economists.

When I took up regular, part-time teaching duties, during the 1966-1973 interval, and my forecasts were publicized, beginning that period, as part of the work of my associates, my forecasts began to be circulated more and more widely, both inside and outside the U.S.A., such that when the August 1971 break-up of the fixed-exchange-rate system occurred, my unique authority as a forecaster was widely recognized among relevant circles inside the U.S.A. and abroad. Among other circles—among the world’s leading rentier-financier circles—my 1971 and later achievements on this account, marked me as an exceptionally competent, and therefore dangerous adversary, therefore a prime target for abuse and intended destruction. For reason of that 1956-1971 history, when I have written of my record as a forecaster, I have spoken of forecasts circulated during the recent thirty-five years, with

only occasional reference to the forecasts publicized in restricted circles during the 1959-1965 interval.

From 1966, until recently, the limitation upon my published work on the subject of economic science, was the lack of peers qualified to proceed beyond an introductory level of the principles of a science of physical economy.<sup>45</sup> The combination of my successes as a forecaster, the attention they have received, and the severity of the presently onrushing world monetary-financial and economic crises, have recently cre-

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*“Outsourcing” is not only an affliction of the U.S. unemployed, but also a grave moral problem for the U.S. population as a whole. The sense of human identity of the present employee, and the former employee discarded onto the scrap-heap, has been attacked with serious moral effects on the ability to produce.*

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ated the circumstances under which a more intense and thorough study of my discoveries and their applications has occurred. With today’s world crisis, the more sophisticated aspects of my thinking on these matters, is, in point of fact, a matter of urgent importance for many nations, including my own.<sup>46</sup>

Here, I summarize some of the conceptions which I have stated in the earlier part of this chapter. This time, I recast the argument from the standpoint of the crucial functional role of the individual person and activity within the production cycle as such. As I looked at the automobile industries’ cycle, during 1954-57: What kinds of activity by individuals are necessary for the performance of the whole enterprise, or national economy, and how is their relative value to be determined from that vantage-point?

I emphasize once again, the point featured in the preceding section of this chapter. Kepler’s method was based, as he insisted, upon his studies of the work of Nicholas of Cusa, Luca Pacioli, and Leonardo da Vinci. Kepler also credits a like-minded contemporary, William Gilbert, who had made

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45. For example, Lyndon H. LaRouche, Jr., *So, You Wish To Learn All About Economics?* (1984); 2nd edition (Washington, D.C.: EIR News Service, 1995). Since first issued in 1984, this book has been published in numerous languages, and is usually the work referenced. Also widely circulated and translated, is *The Science of Christian Economy* (Washington, D.C.: Schiller Institute, 1991).

46. Typical of more recent publications, is Lyndon H. LaRouche, Jr., *The Economics of the Noösphere*, op. cit.

important contributions to the work of Kepler’s *New Astronomy*.<sup>47</sup> That was also the method employed by the discoverer of the relativistic principle of quickest time, Pierre Fermat, the work of such followers of Kepler as Pascal, Huyghens, Leibniz, Jean Bernouilli, and such followers of Leibniz as Kästner, Gauss, and Riemann.<sup>48</sup> The same methodological approach must be taken in study of the underlying cyclical determination of both the overall and internal behavior of economic processes.

The following several historical points are made briefly in review of crucial elements of the preceding section of this chapter.

The crucial principle of a science of economics, is that the increase of mankind’s power to exist, is measurable in terms of potential relative population-density. This implies the measurement of the changes in that potential within the scope of a national or regional economy, and also the impact of the same process upon the economy of the world as a whole. So defined, increase in the potential relative population-density of an economy, is interchangeable with the notion of promotion of the general welfare, or common good.

Without introducing that principle of the general welfare, or common good, no rational definition of a national economy

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47. *De Magnete* (1600).

48. See Abraham Kästner, *Geschichte der Mathematik*, 4 vols., reprint edition with included foreword by Joseph E. Hofmann (Hildesheim-New York: Georg Olms Verlag, 1970). Notably, Hofmann writes: “In der Tat hatte es Kästner versäumt, sich rechtzeitig von der Vorlesungstätigkeit und der mathematischen Produktion zurückzuziehen—überraschend genug, da es dem witzigen Epigrammdichter, geistreicher Spötter und ein wenig boshafte Rezensenten keineswegs an der nötigen Selbstkritik fehlte. Dazu trat die erstaunliche Abwehr gegen die Hochleistungen der führenden Mathematiker in der zweiten Hälfte des 18. Jahrhunderts wie die Leonhard Eulers (1707-1783), Jean-Baptiste Le Rond D’Alemberts (1717-1783), Joseph Louis Lagranges (1736 bis 1813) und Pierre Simon Laplaces (1749-1829).” Hofmann’s passage is typical of the spirit of the fraudulent academic mythologies with which the modern positivists have saturated contemporary scientific mis-education. Kästner, born shortly after the 1716 death of his adopted intellectual predecessor, Leibniz, was the central figure in the launching of that mid-Eighteenth-Century upsurge of Classical German culture, whose role is indispensable today for understanding any of the greatest developments in Classical culture and science in Europe, especially in Germany, of that period. Kästner led the Eighteenth-Century fight, of Gotthold Lessing and Moses Mendelssohn, to defend the ideas of both Leibniz and J.S. Bach against the Europe-wide network of reductionists’ salons organized by Paris-based Abbot Antonio Conti. He is most famous for his life-long influence on his one-time student Carl Gauss, with especially notable relevance for Gauss’s treatments of the subject of bi-quadratic residues and the development of the notion of generalized curvature which contributed crucially to the central achievements of Gauss’s most important protégé and successor, Riemann. Euler, D’Alembert, Lagrange, and Laplace are notable as the avowed enemies of the tradition of Cusa, Leonardo da Vinci, Kepler, Leibniz, and, later, of the work of Fresnel, Ampère, Dirichlet, Alexander von Humboldt, Gauss, Wilhelm Weber, and Riemann. Hofmann’s praise of Euler et al., in what is typical of allegedly “scholarly” falsification of the work and character of the universal genius Kästner, is but one more example of the pathetic dishonesty pervading the intellectual life of Twentieth-Century science in particular, and academia in general.



By 1959-1960, LaRouche reached the conclusion that if the United States continued to follow the policies of Federal Reserve Chairman Arthur Burns (shown here, left, with Henry Kissinger), “the second half of the 1960s would be dominated by a series of international monetary crises, leading toward a breakdown of the existing Bretton Woods monetary agreements.”

were possible. Once the principle is introduced to any governing authority, such as the Fifteenth-Century Popes associated with the Council of Florence and Cardinal Nicholas of Cusa, and by the monarchies of Louis XI and Henry VII, all aspects of globally extended European society are defined by their relative adherence or opposition to that principle. All performance of society, including so-called economic performance, is to be judged according to the standard implicit in the notion of the overriding obligation to promote the general welfare. This means to defend the general welfare, but also to initiate changes, such as artistic and scientific progress, which raise the required standard of performance for that general welfare.

Such was also the birth of the post-Seventeenth-Century, more modern form of sovereign nation-state republic, in the 1776-1789 birth of the U.S.A. as a Federal Constitutional republic.

### The Role of the Individual in History

Against that background, it is to be emphasized that the included characteristic of modern European civilization, is the qualitatively new emphasis which that civilization has placed, both in practice and in conception, on the economic and related role of the cognitive individual in history. This is

called sometimes the “voluntarist” view of the role of the individual in history.

This “voluntarist” view, the compulsion to act on behalf of the common good, or *agapē*, is expressed in many ways, but, for our immediate purposes here, it signifies that the individual person in society is able to change the course of the history of his, or her society for the better, through acts related to the original discovery of, or transmission of valid universal physical principles.<sup>49</sup> This includes the primary, or contributing role of that individual, in altering the character of those cycles which determine the outcome of present and future history. It is also the implied proper basis for defending the principle of entrepreneurship under the American System.

In the Christian history of European civilization, this notion of a voluntarist role of the individual in history, is associated with the image of the passion of Jesus Christ. The notion of “the imitation of Christ,” as the highest calling of the individual, expresses that idea with a certain special intensity. The function of the individual, is to change the course of history, a quality of change which includes the particular matter under consideration here, the changes in the characteristics of historical cycles.

For those who knew history, this qualitative impact of Christ’s ministry, under those circumstances, was no mere coincidence. Under the awful conditions defined by the preceding two centuries rise of the power of Rome, and the reign of the Mithra-cult-allied Augustus Caesar, the threatened fate of the human individual was morally a disgusting one. Christ’s mission made the difference in man’s fate thereafter, establishing, for the Christian, a new, higher conception of the human individual’s power, and also his or her responsibility for the fate of humanity as a whole.

Thus, although the European civilization which Egypt’s influence had set into motion in ancient Greece and pre-Roman Italy, is best typified to the present day, by the figures of Solon of Athens and Plato, it was the ministry and Crucifixion of Jesus Christ which made the revolution, against the evil of Rome, upon which the possibility of the modern sovereign nation-state has been premised.

The destiny and duty of the Christian was, as put by America’s Cotton Mather, “to do good,” not only for the moment, the locality, but, to the extent possible, for all present and future mankind, and also on behalf of the just causes for which people had lived in the past. The principle of *agapē*, which is, as *I Corinthians* 13 typifies this, the central conception of both truth and law in Christianity, freed mankind from an externally imposed set of formal observances, to be self-governed by the inner quality of inspiration which *agapē*, the

49. This is in contrast to the image of the Roman legionnaire, or his modern imitation, such as the Waffen-SS types or the utopian model proposed by Samuel P. Huntington, et al. The Roman legionnaire performed his function, not as a human being, but a beast. It is the role of the cognitive individual in history, which is our subject here.





Lyndon LaRouche rips the lying Washington Post in a lecture in 1975—as he continues to do today. During the 1966-1973 period, his forecasts began to be circulated more and more widely, such that when the August 1971 breakup of the Bretton Woods System occurred, as he had forecast, top financier circles marked him as “an exceptionally competent, and therefore dangerous adversary.” The first editorial attacks on LaRouche by the Post, as well as the New York Times, date from this period.

meaning of the common good, connoted for Plato’s Socrates, as for the Apostles Paul and John.

However, approximately 1400 years from the birth of Christ passed, before a form of society consistent with the mission of doing the common good emerged, in the Fifteenth-Century, Italy-centered Renaissance. Yet, if that voluntarist principle, and the achievement it represents, are clear; the object was always, as now, to continue to move forward, not backward, along that continuing course.

The modernity of the introduction of this view into statecraft in general, and economy in particular, is made clearer when we consider the bestiality of the influential Code of the Roman Emperor Diocletian, and of the reactionary currents in European feudalism later: that each toiler of society must stay in the place of his father and grandfather before him, thus maintaining a fixed ordering of that society of virtual human cattle, which was the Roman and predominant feudal conception of society. All pro-feudalist ideas spread in modern times, such as the “malthusian” dogmas introduced to England by the writings of Botero and Ortes, echo the bestiality of ancient societies such as those of Babylon and Rome, and also Venetian-Norman-dominated feudal Europe. Contemporary neo-malthusian dogmas, such as those popularized in the United States by such means as Rachel Carson’s hoax,<sup>50</sup> and the opposition to the actuality of cognitive generation of new physical principles by such Russell and Wells followers as Wiener and von Neumann, represent a clear regression to a neo-feudal

50. Rachel Carson, *Silent Spring* (Boston: Houghton Mifflin, 1962).

world-outlook on the nature of man.

The American System of political-economy, as, for example, described by Treasury Secretary Hamilton, is a typification of the “voluntarist” conception of the economic and related role of the individual in history: the agapic devotion to the furtherance of the common good. This anti-Hobbesian, anti-Lockean, anti-Physiocratic conception of the individual, is at the core of what is rightly recognized as the American intellectual tradition of Franklin, Lincoln, et al. On that account, excepting cases such as Austria’s great reformer, Joseph II, that American intellectual tradition was hated bitterly by the Central European and Iberian peninsular circles around the Habsburgs, including, of course, the Holy Alliance’s Prince Metternich, and including degenerates such as the Carlists associated with the influence of the notorious Buckley family’s influence inside the U.S.A. today.<sup>51</sup>

In respect to the process of industrial and related production itself, we may distinguish the following as of primary significance. First, the discovery of the relevant scientific or technological principle, on which that productive process, or

51. The family of William F., James, and F. Reid Buckley, and Brent Bozell. This family, among its other predicates, marks, together with the legacy of G.K. Chesterton, one of the important overlaps of the historically anti-Semitic, pro-Carlist, Gnostic currents, which infest theologically unsanitary parishes of the Catholic Church, with the Nashville Agrarians followers among the most thunderous of the lunatic, “single issue,” Protestant Right. These elements are an important element in the fascist right-wing in the U.S. today, the so-called “utopian” military faction associated with such intellectual progeny of the Nashville Agrarians’ William Yandell Elliott as Henry A. Kissinger, Zbigniew Brzezinski, and Samuel P. Huntington.

its improvement depends. Second, the productive act which expresses that technology. Third, the administration of the organization of the division of labor, which that production requires. However, the significance of this act of production in the particular enterprise, is inseparable from its effect, through consumption, on that common good which is expressed as the increase of the potential relative population-density of the population as a whole.

The measurements to be made on this account, can not be made competently on the basis of a fixed set of input-output parameters for a national economy. The crucial factor is rate of change of those parameters, a rate of change which must be expressed implicitly in terms of changes in potential relative population-density. The driving force in this rate of change, is the cognitive action of the sovereign individual mind, in generating and replicating experimentally validatable hypotheses which are otherwise known as universal physical principles.

Restate what I have just written here, as follows.

Every case of the discovery of an experimentally validated universal physical principle, is made by the perfectly sovereign cognitive powers of each individual mind which either makes the original discovery, or replicates that act of discovery. In each such case, the individual generates a universal act, an act upon the universe as a whole. No other action by any person, or any group of persons has any actually universal value, except either that discovery itself, or action premised upon it.

This quality is expressed by any discovery, or other action which is subsumed by such a discovery of universal principle. This includes technologies whose existence is derived from, and depends upon such discoveries of principle.

That argument is already implicit in Leibniz's development of those universal principled conceptions associated with his monadology.

Thus, the core of human knowledge, and of the actions derived from knowledge of an imputably universal quality, presents us with true universals, which are recognizable by us as of distinct types.

Such is the intrinsic, universal truth and beauty of that which is a faithful expression of the distinctive type known as human individual life. It is from this standpoint, that the meaning of economic and related long-ranging cycles can be adduced. If my already identified correction to Vernadsky's notion of the Noösphere, is made, the concept of the Noösphere, as I have described it, affords us the simplest kind of comprehensive representation of the way in which long-ranging cycles appear and unfold in a manner fairly described as a Riemannian universe. I now proceed accordingly.

## Cycles in a Riemannian Universe

As Vernadsky and his followers recognize this cyclical process, the continued existence of man upon this planet, depends upon the universal physical principle whose natural

products are specifically an expression of the activity of living processes of human cognition. As I have emphasized above, this principle is not the product of some original germ of life, but a universal creative principle, an intention, in Kepler's sense of a universal physical principle, which acts upon the universe to produce what we recognize as life and its products. It is this principle, whether known as such, or not, which must be included as an underlying characteristic of all long-ranging cycles in the universe, physical-economic or other.

Thus, the student of Vernadsky's contributions to the notion of Biosphere and Noösphere, is impelled to measure the relative rates at which the Earth is producing those natural products of life on which continued human life depends, and the rate at which mankind, or other influences, are causing those products to be depleted.

The first concern of human life, is the maintenance of those oceans and atmosphere which came into existence as products of living activity, and are maintained through continued such activity. Coal is shown to be representative of those natural products of living processes which we term "fossil," whereas, there is reason to challenge the presumption that natural gas and petroleum are fossil in that same sense. There are also "fossils" of abiotic processes, although the term "fossil" is usually restricted to residues of living processes. What we term the Biosphere, contains an organization of literally thousands of known geological types of what are ostensibly pre-biotic minerals reported as not less than 4,000 known types, whose distribution and quality are either chiefly, or significantly the results of the long-term action of the Biosphere upon the pre-biotic Earth.<sup>52</sup>

In each first approximation, we are confronted with a volume of such fossils, including air and water, and a per-capita rate of their depletion, at varying rates, according to the level of technological development, and functional organization of that development, of entire nations, and of the planet in general. Forests, streams, and meadows, are also fossils, as are quicksand swamps.

However, society also generates, or causes the biosphere to generate, new kinds of supplies of useful fossils, as well as contributing to the replenishment of pre-existing types being depleted. Not only must society manage the depletion of fossil products of the pre-human Biosphere; the existence of the Noösphere creates new categories of what should be defined by any economist, and by national policy-makers generally,

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52. This rough census of the Earth's minerals deposits has been supplied by the relevant Moscow institution, an institution whose existence is a reflection of the wide-ranging influence of that still-existing Freiberg Academy, in Saxony, where Alexander von Humboldt, among many other scientific notables, studied. Two visits to Freiberg, by Czar Peter the Great, while prince and later as Czar, are key to the founding of those scientific institutions in Russia, upon which much of the world's knowledge of minerals has depended. This was the scientific environment, in Russia, which contributed significantly to the relevant contributions of both Mendeleev and Vernadsky, among other notable cases.

as functionally as fossils in fact. As society increases the effective level of energy-flux density of generation of usable power, and in other ways, mankind's ability to produce needed types of fossils of the Noösphere grows. New types of what would otherwise be considered as specifically abiotic and organic existence, are brought into being by man. The basic economic infrastructure of transportation, water management, energy production and distribution, sanitation, forestation, urban development, and so on, is an extension of the fossil Earth's development, bringing the "ecology" of our

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*One of the most notable peculiarities of the process of replenishing necessary fossil resources, and of generating new types of useful fossils, is the fact, that progress is not merely an option. A zero-growth policy is intrinsically a genocidal policy, a policy which is potentially the most effective of the means by which mankind might choose to destroy itself as a species.*

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planet to much higher levels of anti-entropic metastability than the Earth could have achieved without us.

The principled distinction among fossils is, therefore, the distinction among the kinds of processes which have brought them into existence, essentially the distinction between willfully human and other agencies.

Therefore, we must consider these works of man as included in the array of fossils on which, taken as a category, the continuation and improvement of human life depends.

Thus, investment of economic resources in development and maintenance of basic economic infrastructure, in productive facilities, in educational and health-care systems, in urban centers, are also fossil resources, subject to the threat of depletion. Sometimes, the teacher standing before the classroom is usefully described as a fossil, but that issue is a cart of a different horse than we are deploying here. However, the agency on which this entire process depends, is the human species, and, most emphatically, the progressive self-development of that species.

One of the most notable peculiarities of the process of replenishing necessary fossil resources, and of generating new types of useful fossils, is the fact, that progress is not merely an option. A zero-growth policy is intrinsically a genocidal policy, a policy which is potentially the most effective of the means by which mankind might choose to destroy itself

as a species. Mankind is a species whose physical characteristic is cognitive anti-entropy. It is by raising the level of that anti-entropy, that our species obtains the increased power to replenish, or supersede the fossil resources needed for sustaining human life, such as by inventing and amassing new categorical types of fossils which supersede that which we were depleting.

Thus, we are confronted, in first approximation, with two qualities of physical-economic cycles. In crude first-approximation, we have cycles of rates of depletion and replenishment of fossil conditions necessary for current modes of the existence of our population as a whole. However, in second approximation, we have a more refined conception of physical-economic cycles. A needed fossil resource to be maintained, is defined in terms of both the change in the array of technologies required to increase mankind's potential relative population-density, and the rate of anti-entropy in that per-capita potential which is being achieved.

It is the ratios implicit in such a view of the relationship between depletion and rate of superseding depletion, which defines the meaningful physical-economic cycles reflected as the long-ranging economic cycles expressed in the terms I had described such phenomena up to this present point in my report.

The most important of these long-ranging cyclical phenomena, is the cognitive development of the individual and the society in general. At this point, in defining the basis for economic cycles—in pointing to the significance of a Riemannian universe, for defining long-ranging economic circles—I go beyond the framework of Vernadsky's definition of the Noösphere, but without overturning any of the methodological assumptions embedded in his progress up to that point in his work. I simply correct for what his approach lacks.

The following interpolation makes the general principle clearer.

### A Universe of Fossils

The crux of the matter, is the following. The universe according to Vernadsky's view of the Noösphere, has the following principal, axiomatic requirements.

"Universe" signifies, axiomatically, nothing outside, prior to, or after that universe. This is not an a priori doctrine; it is an expression of the experimental methods on which we depend for all validated hypotheses leading to defining a universal physical principle. This universe is defined experimentally, as by Vernadsky, as a reflection of three interacting sets of universal physical principles. These three sets are, respectively, a.) the domain of abiotic experimentation; b.) the domain of phenomena which are called products of life, because they could not occur as a result of action within the assumptions pertaining to the realm of abiotic experiments (the Biosphere); and c.) physical effects which occur, but are not specifically consistent with living processes in general (the Noösphere).

Such a universe, the only actually known universe, may be fairly described only by proceeding from the premises set forth by Riemann's 1854 habilitation dissertation.

From the standpoint of the physical-economic impact of science-driven progress in the potential relative population-density of society, the cumulative impact of discovery of universal physical principles, defines a sub-class of universal experimental phenomena, within the domain of cognitive action (i.e., of the Noösphere), but which depend upon the cognitive form of social processes, as typified by universal principles of Classical artistic composition, rather than individual discovery of universal principles specific to either the abiotic domain, or living processes and their specific products in general.

Typical of this latter sub-category of specifically human behavior, is the challenge of providing either a Classical humanist form of universal education, or its functional equivalent. The transmission of knowledge of the cumulative store of discovered universal physical principles, as a cognitive, rather than a mere learning experience, is an essential determinant of the ability of society to maintain the level of pre-established progress in the human condition, and to go beyond that. Thus, the approximately twenty-five-year span, from birth to biological maturation, reflects a cycle which coincides with the core of the span of the educational process on which the development of competently adult individuals depends.

Because of the importance to all human beings, of the idea of death, all ideas and motives for practice, are implicitly tied up with the implications of the respective ideas of mortality and immortality. On this account, all human beings are implicitly spiritual individuals, that in the specifically Platonic sense of spirituality. They act in response to motives which express, at least implicitly, ideas of mortality and immortality. To understand our universe, and to understand humanity's role within it, this matter of spirituality must be situated within the framework of a scientific conception of the term universe, as I have summarily identified that just above.

In physical science, spirit signifies nothing but the sovereign cognitive potential and development of the mortal human individual. Spirit is the quality of intention, as Kepler employs the notion of intention, which is usually expressed as human discovery and implementation of a universal physical principle operating from outside the control of the abiotic or Biosphere's phase-space as such. Spirit is a quality of physically efficient existence located outside the abiotic and Biosphere as phase-spaces. It is physically efficient, because it effects specific kinds of physical changes within the domains of the abiotic and Biosphere. It is physically efficient as Vernadsky defines natural consequences of the life and cognition, as experimentally demonstrable. It is not a notion of spirit existing independently of science; it is a notion of spirit which goes directly to the essence of all competent science, in all aspects of scientific activity.

We have, thus, the following picture of certain essential,

implicitly Riemannian features of our universe, a universe which features a spiritual principle, the cognitive power of generating experimentally validated discoveries of universal physical principle, as an integral feature of the universe as a universe. The considerations we emphasize here, may appear esoteric to many, at first glance; but, as I shall indicate, they are nonetheless a highly practical, relevant matter for the understanding of what a long-range economic cycle signifies in practice.

The universe is, primarily, a multiply-connected interplay of three phase-spaces, all of which are interacting everywhere at all times and places, but which are each experimentally distinct, in specificity of principle, from the others. This much we know from the crucial experimental evidence, as evidence is defined by, for example, the work of Vernadsky on the Biosphere and Noösphere. As Kepler introduced a rigorous notion of a universal physical principle in his *New Astronomy*, universal physical principles are to be associated with intentions expressed by their effects, but are not themselves derived, as if deductively, from those effects. They are the laws of the universe, which we have discovered, and, if we are wise, have adopted as our intentions.

This interplay does not, however, support the notion, that a "germ" of life as such infects the abiotic universe, to produce such results as a Biosphere. Rather, what we actually know of the Biosphere, is that it is produced by the action of some universal principle, a principle of anti-entropic action which produces living forms, but is not itself limited to the array of forms whose existence it induces.

"Life" as we know it, exists only as itself a type of "fossil" of a higher ontological order. The principle expressed by life in general, life as distinct from an experimentally defined abiotic universality, always existed; it is an integral principle of the universe. Under certain conditions, yet to be determined by us, this principle generated life-forms, forms which are, in effect, "fossils" of that action; life as we conceive its expressions, is itself, collectively, a "fossil" of the principle which has generated the existence of those forms.

What we know, as a matter of principle, is that the conditions for generating what are recognized as such life-forms must have existed, at that time, within the self-development of the universe as a whole. We know very little more than that, but that much we know with certainty.

However, that much said, we also know, that the development of living forms is ordered, to such effect, that the pre-existence of some living forms, or their fossils, is necessary for the emergence of other life-forms, including, most conspicuously, higher life-forms.

The case is clearer, at least in first approximation, in examining the evidence bearing upon the natural products of cognitive action. Cognition is a principle expressed, in itself, as a sovereign function of the living human individual, but it is not to be inferred as an existently self-subsisting principle from its individual effects.

From the standpoint of physical science, the cognitive notion of the existence of God, is twofold in the following terms. First, as I have emphasized earlier here, God is universal cognition, anti-entropy per se: But! If we are to employ the term “creativity” in a way which represents experimental knowledge, rather than something like just another “self-evident” assumption, it means something we know, rather than something which is found merely convenient to believe. In the science of physical-economy, we know the efficient existence of a quality, called willful cognition, which Kant, for example, denied to exist. That cognitive action, which has the effect of increasing the potential relative population-density

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*In that universe, life, implicitly, always existed, not necessarily as life, but in the form of the anti-entropic phase-space which produces the generation of living forms as the existing conditions make this development appropriate. Similarly, the creative power which is the human species, also always existed, but was manifest when the preconditions for the creation of its existence had been developed.*

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of a culture, is what we know as creativity. That is, as I have emphasized here earlier, in first approximation, the scientific notion of the existence of a God-principle reigning in the universe; but, that, as I have warned earlier, is not all.

Creativity, as we actually know it, exists only in the form we actually know it, as human creativity. It is a sovereign quality of an individual human mind. The idea of sovereign individuality can in no way be separated, except in a purely irrational, arbitrary way, from creativity. Thus, for science, God exists only as a universal personality, as pure creativity existing as a universal personality; our notion of God is limited to the basis for that knowledge in what we experience and know as the unique quality of the cognitive power to create.

Furthermore, the relationship of the individual person to God, is of the same nature as a cognitive quality of social relationship among persons in society. As Cardinal Nicholas of Cusa expressed the point, we may participate in God.

These matters must tend to be misunderstood by many, at first, as the intrusion of religious ideas upon the domain of science. Yet, consider the most important question underlying all matters of policy of either persons or nations, the question

of intention. It is as societies, and individuals, define the relationship between, on the one side, the ideas of mortality and immortality, that the paradoxes inhering in the working definitions of personal self-interest must ultimately be reconciled. It is through the adoption of intention, ultimately an intention respecting adjudged self-interest, that choices of action in society are regulated.

In a Riemannian physical space-time which is derived, as a notion, from cognitive knowledge of both our individual and social relationship to the universe, the universe has an origin, but no beginning. It begins in its origin as such, before which no time or space existed. It is, in theological terms, a simultaneity of eternity. In this universe, we are made as in the image of the Creator of that universe. This image, expressed solely through the expression of our cognitive powers, is the immortality expressed by our brief mortal existence. In that immortality, lies the essential self-interest, the true practical self-interest, of each of us.

In that universe, life, implicitly, always existed, not necessarily as life, but in the form of the anti-entropic phase-space which produces the generation of living forms as the existing conditions make this development appropriate. Similarly, the creative power which is the human species, also always existed, but was manifest when the preconditions for the creation of its existence had been developed. The notions of development, which account for this unfolding of the universe up to the present, are, for us now, the basis for the notion of long-ranging cycles, including long-ranging economic cycles.

There is a process of consuming, replenishing, and superseding of the preconditions for the Biosphere and, also, the Noösphere. The development, through birth, youth, maturity, and demise, of the individual person, typifies such cycles. The maintenance, depletion, and improvements of the Biosphere, in ways which either accord with the requirements of progress in the human condition, or do not, are examples of long-ranging cycles. The development, maintenance, and depletion of basic economic infrastructure, including educational and health-care systems, is cyclical. And, so on.

In the course of time, the benefits and errors embedded in our management of that complex of long-ranging cycles, overtakes society, with either benefits or disasters. Thus, studies of physical-economic processes, which look ahead one to two generations, and even longer, are the way of thinking by which we should judge the performance of the physical economy (the society) in the short to medium term.

Indeed, the universe as we know it, is a fossil, in the deepest and most general sense of that term. It is a fossil of an ongoing process of development, of a continuing creation, in which new forms of processes emerge in response to the preconditions fulfilled by others. The universe is, thus, constantly producing, using-up, and superseding what it has previously produced. Herein lies the notion of long-ranging cycles. It is those cycles, so comprehended, which reveal universal intentions, as Kepler recognized intention, embed-



ded in that self-development of the universe.

Man exists in that universe, and operates on, and changes those cycles, to the intended purpose of the existence of our species. Those relations are expressed as they are reflected in the physical-economic cycles of modern civilization, as also earlier. The way in which one cyclical phase of the process leads toward the outcome inhering in the governing assumptions of current practice, is to be recognized as the most important feature of that cycle, its systemic characteristics.

In all competent such studies, our primary concern is to define the systemic characteristics of the long-ranging cycles being considered. The first object of such studies, is to detect and eradicate the false, systemic assumptions, which are impelling society toward self-inflicted catastrophe. The second object, is to adduce the principles which must supersede the assumptions we must discard.

Those principled underpinnings of the crisis before us so considered, proceed, so informed, to the immediate, practical measures needed to pull this planet back, safely, from the present brink of a prolonged, global new dark age of all humanity.

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## 2. The Present National Emergency

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Do you wish that the world's present, awful night would soon end? Most of you are now huddled fearfully around whatever fantasy you wish to believe would be a safe place. Meanwhile, the weather worsens more than you ever believed could happen. Many are clinging desperately to false dreams, hoping that this terribly stormy moment might just go away. Soon, there will come a death-like moment of false dawn. That will make some things in our landscape clearer to those who have the courage to open their eyes. The great battle for the continued existence of civilization, is about to descend upon us all.

For some, it will be as it was for cowards of the past. Some will say, "I always hated war; therefore, I don't see why I should be expected to fight it," or, "Don't bother me now; call me when I have returned from my vacation." Others will be like those in the Nazi concentration-camps, who, for a time, sought "to go along, to get along" with their captors. For the rest of us, if civilization is to survive what is now coming down upon us all, we must be prepared to support certain radical changes, away from the opinions and actions which have come to dominate popular opinion in Europe and the Americas, as elsewhere, since about thirty-five to forty years, and, in some cases longer. We must seek to bring to their senses, those self-doomed souls who are clinging to the defense of their presently habituated personal opinions, like a drowning man who had lashed himself desperately to the anchor of the sinking ship.

I now summarize the view of the present world situation, as developed, in successive stages, in earlier parts of this report. There are three leading causes for the disaster now descending upon all mankind.

The first big disaster, has been the post-McKinley, Twentieth-Century hegemony of an Anglo-American alliance of financier interests, which has sought to secure the permanent supremacy of the British system of political-economy. By "British economy" is meant, a system with the included axiomatics of such empiricists as Sir Francis Bacon, Thomas Hobbes, John Locke, Adam Smith, Jeremy Bentham, H.G. Wells, Bertrand Russell, and Winston Churchill. That is also the British system as worshipped by American Tories.<sup>53</sup> The latter include the beknighted British agent of influence (Sir) Henry A. Kissinger, and many other representatives of that Twentieth-Century Anglo-American bloc which was established by the U.S. Presidencies of Presidents Theodore Roosevelt and Woodrow Wilson. This Twentieth-Century fusion of British and American Tory traditions, constitutes the basis for the decadent and tottering Anglo-American System of today.

On the opposite side, since about three centuries ago, the chief threat to that British System and its Anglo-American successor, historically, has been, and remains my American System, that of Benjamin Franklin, Alexander Hamilton, Abraham Lincoln, and Franklin Roosevelt.

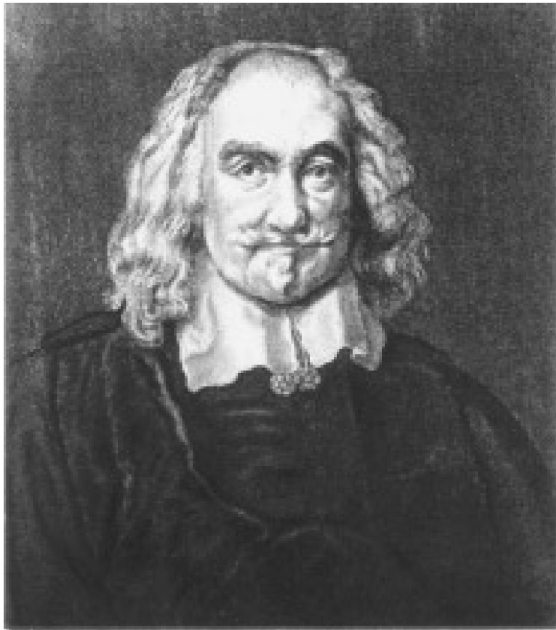
The second, post-Franklin Roosevelt phase of degeneration of the British System and its American Tory component, has been the cause of that presently threatened long-term doom of world civilization, which is implicit in the post-1971 form of the world's present "floating-exchange-rate" monetary-financial system.

The third phase, of moral and economic degeneration of the American Tories' own economic system, has been the post-1989 campaign to abolish the nation-state, in favor of a new, universal fascist form of Roman Empire, called today by such names as "globalization" and "world rule of (neo-Roman) law." This form of fascism is typified in its most morally degenerate expression by the utopian dogmas associated with the present-day heirs of the Nashville Agrarians' Professor William Yandell Elliott.

The overlap of these three, combined afflictions of our planetary civilization, defines that long-range cycle which has

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53. The British System signifies what emerged around the combination of the Eighteenth-Century British monarchy and the British East India Company, out of the tumultuous passage from the reign of the tyrant William of Orange to the seating of George I. As Graham Lowry and Philip Valenti have emphasized, among others, the process of division between British and American systems was defined during the first decade of that Eighteenth Century, around the key figures of Gottfried Leibniz, Cotton Mather, Jonathan Swift, et al. The heirs of Leibniz, Mather, and Swift, most notably Benjamin Franklin and his collaborators in North America and Europe, including the British Isles themselves, define the core of the Eighteenth-Century basis of a distinct American intellectual tradition.



The British economy has produced disasters around the world for centuries, because its underlying assumptions are those of empiricists, such as Thomas Hobbes in the 17th Century, and the evil, influential Bertrand Russell in the 20th, who deny the unique quality of human cognition, the source of economic wealth.

brought the planet as a whole into the present, terminal phase of a global, systemic, and existential crisis. During the coming decades, unless we now overturn the axiomatic assumptions implicit in those three, interacting, pathetic aspects of the past hundred years history, no continuation of this present organization of civilization will be possible on any part of this planet.

Therefore, one among the greatest dangers to human life on this planet today, is the tendency of pragmatists, to say: "Yes, we must reform the present system; but what you propose goes too far!" They are determined, not merely stubbornly, but suicidally, not to accept any reform which implicitly overturns any among the truly essential assumptions underlying the combination of those three pestilences: The Anglo-American system, the post-1971 floating-exchange-rate monetary system, and the presently self-doomed, post-1989 attempt at consolidating a utopian, post-nation-state form of new Roman empire.

Therefore, we have come to a time when the corrupt and the timid each seek a comfortable berth within a sinking ship, even a perch on that ship's anchor, making no suggestions which might upset their already hysterical fellow-passengers. However, if you are rational, and care about the survival of civilization, it is my proposals which you will prefer, and support, even if they are sometimes contrary to what you have been previously conditioned to believe.

### A. The Structural Reform of Employment

Today, as, increasingly, during the recent forty years, the influence of a mentality specifically rooted in recent decades'

ordinary ideas of management, will be a great source of self-inflicted danger to the continuation of any enterprise; either a corporation, private enterprise, or national economy. As merely typified by the bellwether case of Enron, those who have become conditioned to recent decades' financial buccaneering, will impose policies which ultimately ruin, or even destroy the enterprise, all in the name of "good, practical business management."

In better, former times, now as far into the past as a quarter-century ago, what had once been a notably successful private enterprise, was often ruined for the simple reason that, upon the death or retirement of the creative figure who had built up the firm, the enterprise fell under changes in management thinking brought in by the profit-minded heirs of the founder. In study of successfully launched, durable forms of business enterprises, there is often, in business as in political life, a personal factor of leadership, which many observers may have wrongly regarded as an almost accidental, mere idiosyncrasy of a leading figure of a successful organization. Yet, usually, it was often that personal leadership whose persistence had brought an enterprise to its relative success, where comparable other enterprises had failed, even absolutely.

It has been the virtual uprooting of the cultural traits associated with exemplary, technologically progressive, closely held entrepreneurship, which is today a characteristic, fatal expression of systemic economic decadence within the present Anglo-American-dominated world system.

Woe came to such a firm, had it fallen into the hands of heirs who ignored that factor of personal leadership, and who had substituted what were considered by them "modern, business-like methods of management coordination." So-called "systems analysis" has been among the worst such trends

toward the now pervasive decadence in the management of enterprises.

Thus, in some cases in which technological innovation had been the relevant predominant factor in the success of a closely held entrepreneurship, it was the loss of what seemed, to some, to be a mere idiosyncrasy of the entrepreneur which brought on the decadent phase. Such alleged idiosyncrasies of the figure sometimes slyly labelled a “tycoon,” might have been his creative engineering impulses, for example, which had been the easily recognized type of crucial factor in the enterprise’s success. However, the factor of individual creativity is also expressed in ways other than what is recognized as a factor of technological innovation as such.<sup>54</sup>

The principle which usually distinguishes the remarkably successful entrepreneurship, is the organization of productive enterprises around the sovereign cognitive powers of either a single leading individual, or, a close intellectual collaboration among a few such individuals. Stockholders may take a share of a firm’s profit, but it is the cognitive quality of the operating management of the enterprise, which actually generates the growth from which honest profit of private enterprise flows. The problem has been, that personalities which have developed their cognitive powers of economic leadership to this effect, have been, so far, relatively rare, not only in the population in general, but within the professional retinues of management generally. The notion that one could produce a qualified entrepreneur at Harvard Business School, or Wharton, for example, has been chiefly an insolent, failed delusion of the post-World War II “white collar class.”

Worse, among the retinues of management, there is usually a combined awe and deep resentment of the personality of the effective leader. The capable entrepreneur is resented among most of that retinue, increasingly so during the 1950s rise of the so-called “organization man.” The retinues of management have tended, increasingly over the past half-century, always to resist what they sometimes deprecate maliciously as the “authoritarian personality” of the entrepreneur, and would, if they could, drag the policies of the enterprise down to a level of mediocrity, called, euphemistically, “management,” with which they believe they will be “more comfortable.”

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54. This is not to deny that the tycoon was often his own worst enemy. In general, the most difficult problems in both closely held entrepreneurships and corporations, those which lead to bringing in the “outside consultant,” are sometimes rather simple ones, but which, simple or not, require bringing in an outside arbiter who, like a corporate sort of “marriage counsellor,” will sniff out and facilitate correction of some quirk embedded either in the behavior of the chief executive, or the management generally. Here, I emphasize the essential contribution of the entrepreneur, without exploring the afflictions to which that species of functionary may be susceptible. The fact that a husband uses bad language, is no excuse for a woman’s divorcing the man, and marrying an elegantly trained parrot. The fact that “tycoons,” as described by me here, are a necessary species, does not mean that they may not be susceptible to the kinds of diseases otherwise rampant in our society.

Thus, when the alleged “tycoon” moves on, or is moved on, the retinue inherits the reign. Usually, as we have seen among many of the once-celebrated names of corporate America, the ensuing course of events, is in the direction of corrosive decadence. It may be fortunate for society, if only temporarily, that such firms may continue existence, in their increasingly decadent state, in the short to medium term; in the longer term, the influence of such persisting decadence is like an infectious disease, which poisons the behavior of both enterprises and government in general.

It should be emphasized, at this point, that the entirety of the rise of modern civilization out of the swamps of ancient empires and feudal tyrannies, was premised on two, interdependent principles. First, the principle of the general welfare; second, the obligation to promote that general welfare through providing protection to the contributing role of the related cases of the individual scientist or creative Classical artist, and the individual entrepreneur. This is, in effect, the same thing as saying, that the superiority of the American System of political-economy, lies in a recognition of the nation-state to provide both the basic economic infrastructure, and the protection of the expression of the sovereign cognitive powers of the individual, upon which a satisfactory form of society depends. The business leader who combines a passion for promotion of the general welfare, with a cognitively inspired drive to make things better through the work of the enterprise, is the type we ought to desire and foster in our nation’s economic policy. U.S. Treasury Secretary Alexander Hamilton would agree.

In a related expression of the referenced class of causes for failures of formerly successful enterprises, the shareholder interest tends to bring about its own ruin. It does this through the role of mediocrity incarnate in the sentiment of small-mindedness which most among today’s customary retinues of management often share with the typical shareholder. Thus, we had, decades past, the myth of the alleged “tycoon:” the founder went to glory, and his heritage went to Hell.<sup>55</sup>

Take a third case, that of the effect of the untimely death of President Franklin Roosevelt, or the death of Abraham

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55. I saw this phenomenon in consulting and related practice, over the 1950s and 1960s. I was shocked, but not surprised, to see a related kind of incompetence creeping into the functioning of my own association, during the periods my freedom of functioning was crippled by assassination-threats from high-level circles, or otherwise. Whenever some among my associates assumed that I was out of action, they tended to introduce business practices of a type which I had repeatedly denounced as typical varieties of the common diseases of mismanagement. This was difficult to correct, because of the understandable tendency of those with the usual excessive inclinations toward a purely accounting-administration outlook, to protect their practices against the lurking hazard of my potential intrusion, and correction of such blundering. The worst problems, to similar effect, were those follies induced by government-controlled assets planted and maintained inside operations. The management which seeks to perfect the management coordination of existing practices, potentially dooms that enterprise, by excluding the innovations on which success of the undertaking depends absolutely.

Lincoln before him, or the comparable effect of the assassination of a unique quality of leader, the Reverend Martin Luther King, Jr., on the Civil Rights movement. Any leadership which is putatively assumed to carry on after the sudden loss of a certain quality of leader, has usually failed with that leader's absence from the scene. Usually, the heirs, even the relatively talented and well-meaning ones, simply can not fill the role of the person who led them jointly to success.

That characteristic personal defect in the history of modern civilization, is a reflection of the fact, that relatively few persons have been able to rise to a governing sense of mission in their personal lives, a personal sense of an identity in "the simultaneity of eternity." Even persons of otherwise great talent, but who have lacked that special quality of moral commitment, fail, repeatedly, when left to their own inner resources. They fail because they are tragically inclined to betray their appropriate sense of mission, for the sake of such narrower concerns, as so-called "practical," family and related considerations.<sup>56</sup> The extraordinary importance of the individual leader with an appropriate sense of mission, is not a genetically determined quality; the want of more such leaders, lies essentially in the fact, that the majority among even the leading circles of government, business, and science, in nations, have not yet really "grown up" morally and intellectually. We are left to make the best of the relatively very few real ship's captains available.

The case of the best entrepreneurs of the past, and the exceptional political leader, are, like the truly great scientist, a reflection of the continuing rarity of competent leadership in our culture thus far.

The case of the work of Franklin Roosevelt and his circle of leading personal collaborators, in building the U.S. economy, is significantly illustrated by Richard Freeman's part in this report as a whole. Look briefly at an aspect of the role of President John F. Kennedy. Focus on one clear demonstration of what the United States might have accomplished, had that President not been assassinated by his enemies.

Kennedy's successful initiative, committing the United States to put man on the Moon during that decade, is the most notable of the initiatives he introduced as President. In these cases, he did not personally create the conception which he implemented, but his personal manner and quality of initiative, as President, brought about a great national achievement

56. The frequent argument for celibacy of the clergy has often claimed the authority of the argument which I have made here. The mind shackled to what are perceived to be the immediate, and distracting personal obligations of family affairs, easily loses sight of the more pressing interests of his own immortal soul, and too easily corrupts his own conscience by susceptibility to such arguments. There are few corrupt politicians who did not, or might not have excused themselves, "I did it for the sake of my family and friends." "Go along, to get along," is a typical expression of such forms of immorality.



Thomas Edison, the exemplary tycoon of the American System of political-economy: "The business leader who combines a passion for promotion of the general welfare, with a cognitively inspired drive. . . ." Edison also bore the brunt of the typical attack as "an authoritarian personality," by accountants and bankers ruining his work.

which were otherwise most unlikely to have occurred. He acted, in that respect, in the manner of a good entrepreneurial "tycoon," that, in fact, as his book, *Profiles in Courage*, implies.

Contrary to the Wagnerian rant of Federal Reserve Chairman Alan Greenspan's Ayn Rand, the outstanding leader in business or politics, is never the poor simp who has mortgaged his soul to popular opinion, but the most social of all creatures, the individual who resists the tyranny of popular opinion, because he is consumed by practical love for mankind's general welfare. It is the moral mediocrity, the intellectual mediocrity, who is truly the asocial individualist, the individual who would sell his soul for the pottage of "immediate personal, family, and community interest."

In all cases of the distinguishable quality of leadership which underlies those cases, the quality which recent decades' run-of-the-mill business executive could never seem to grasp, as long as he was thinking of himself merely as an accountant or business manager, is the role of the cognitive factor in enterprise, whether that is leadership in government,

in a political party, or a business undertaking. This same cognitive factor has two principal expressions in the accounts of a national economy as a whole. As the case of President Franklin Roosevelt illustrates the point for his time, so now, there is no hope of U.S. recovery, in particular, from this awful, ongoing world-wide economic depression, unless that cognitive factor is the pivotal, dominant feature of U.S. policy. It is therefore urgent, that I identify, and also stress the place of that specific function within the economic policy-framework required for the U.S. government at this time.

There are many relatively obvious, practical measures dictated for the present situation of the U.S. economy. As you read and study this ongoing description of the kinds of leading features of economic reorganization required, never forget that the only possible source of physical-economic profitability and growth of a national economy (or a world economy), is the anti-entropic factor. That means, for example, that the economist were incompetent in his profession, unless he or she were fully conscious of the reasons certain costs must be added, and certain seemingly practical measures assigned a relatively lower priority, even curtailed, in order to channel the growth factor of cognitive creativity into the structure of employment and allotted categories of cost and investment.

Remember. From my studies of relevant cases, there was really no mystery as to why the so-called tycoon succeeded where his heirs failed. The difference lies in the same quality of cognitive factor, which I have contrasted to the relative cognitive mediocrity of the reductionist opponents of Leibniz in science. These were the opponents of the achievements of Carl Gauss and Bernhard Riemann. I can also attest to this from a position of relevant authority, from my own unique achievements as a long-range forecaster. The success or failure of any effort at the recovery of the present U.S. economy, will be determined by presence or absence of that seemingly egregious, cognitive factor of leadership and allocation, which has stood behind every great contribution to the general welfare of nation and society as a whole.

Cultures which successfully suppress such seemingly egregious natural products of *agapē*, in favor of the oppressive accolades of rampant mediocrity, are cultures which have repudiated their own moral fitness to survive. That is what has happened to bring about the systemic ruin of the economies of the Americas and western Europe, during the recent decades. If such corrosive, recent decades' trends of rampant bureaucratic, moral and intellectual mediocrity through the political and business sectors, are not suddenly reversed, now, it is virtually certain that the U.S.A., for example, will not survive for much longer in its present constitutional form.

In response to what I have just written, the question will be posed: "Why should we accept the reversals you propose in our present policies and opinions?" The answer to that is: You will accept and implement these changes, if, but only if you wish this nation to survive. It is, obviously, up to you to decide, and, in any case, to, at last, accept personal responsibility for the consequences of your personal decision

on this matter of policy.

That said to situate the following points, consider some crucial examples of the types of sweeping structural reforms which are required for the U.S.A. at this time.

### Some Immediate Changes

The pivotal feature of an effective program of recovery of the U.S. economy, will be the inclusion of a drastic restructuring of the composition of employment and real (i.e., physical) incomes within the society as a whole. The general thrust will be, in effect, to reverse the post-1963-1966 trends in shifting composition of the categories of employment. These reversals will be brought about largely through rewriting the principles of the monetary, financial, and taxation systems. These changes must be in directions consistent with those constitutional principles illustrated by the celebrated reports to the U.S. Congress by our first U.S. Treasury Secretary, Alexander Hamilton.

For example, essential services in the "soft" category of basic economic infrastructure, such as Classical modes in education, Hill-Burton standards for health-care, and services of Classical physical science generally, will be rapidly increased, together with increased rations of employment in the sectors of agriculture, manufacturing, engineering, and general building and maintenance of "hard" forms of basic economic infrastructure. Employment in "white-collar" categories of sales and non-scientific professional services, will be sharply reduced. For the immediate years ahead, this shift, reversing recent trends in structural composition of employment of the national labor-force, thus reversing the post-1963 trend toward so-called "post-industrial society," is the principal economic-policy measure required, as a source for introducing and accelerating increases in the average physical productivity of the labor-force as a whole.

The rebuilding of the U.S. economy will occur as an expression of chiefly two sets of interdependent priorities. As a general rule, the primary mission of the U.S. government's role, will be to foster the conditions required by consideration of national economic security, as we used to define national economic security, during the 1933-1964 interval. The second factor will be a relatively high priority placed upon utilization of potentially useful elements of fallowed physical-economic assets, such as those of neglected entrepreneurial agricultural and industrial potential. The direction given to realization of those two objectives of national economic security, will be supplied by the development of the foundations for a science-driver mission-orientation, as the leading-edge mission of medium- to long-term U.S. economic-development policy.

For obvious, practical reasons, in the present case, as during the Franklin Roosevelt-led economic recovery of the 1933-1945 interval, the principal shift will be a reflection of a large-scale increase of public and related employment in the building and maintenance of essential forms of both "soft" and "hard" basic economic infrastructure. The reactivation



of idled industrial and related work-places of the private sector, will be gradually superseded in importance by additional such work-places. The most rapidly growing sectors of private employment, outside basic economic infrastructure, should be in the development of closely-held, technologically innovative entrepreneurships.

U.S. policy-shapers, and others, must be reminded, that it is not the giant stockholders' corporation, which was the driver of U.S. economic progress. It was the closely-held entrepreneurship, each led by one or several personalities of some exceptional scientific or analogous talent. It was these, local community-based entrepreneurships, which provided large enterprises with the innovative technologies on which the sometimes ill-deserved good reputation of the giant corporation often depended.

Otherwise, economic reconstruction will enjoy the impulse supplied by special national mission-orientations, including space-exploration programs. These mission-oriented "crash programs," military and otherwise, will be modelled on such precedents as those of France under Minister Jean-Baptiste Colbert, and by Lazare Carnot and the École Polytechnique later, which have made decisive contributions to the leaps in productive powers of labor, and standard of living. Unfortunately, because of a lack of even elementary knowledge of the principles of technology among most professional economists today, the reason for the unique kinds of success realized by programs such as the pre-1969 U.S. space program, especially the Kennedy "crash program" for the manned Moon-landing, are not now competently assessed generally.

During the short to medium term, the increases in employment will occur chiefly in two overlapping general classifications. First, there must be an emphasis on rebuilding the physical capacity of already standard qualities of physical production of goods, and of basic economic infrastructure, up to approximately the percentiles, and relative composition of employment, of the total labor-force represented more than a quarter-century ago, prior to the Carter-Brzezinski catastrophe. This means, that government and banking must direct much of the shift in employment-patterns, away from technologically unskilled categories of sales and service occupations, into approximately the same categories and rations of the available labor-force of a time prior to a quarter-century ago.

In addition, there will be large-scale projects, largely funded through issuance of Federally created low-cost, long-term credit, in the essential categories of mass transportation, energy production and distribution, water management and sanitation, and in education and health-care programs. As under President Franklin Roosevelt, during the 1930s, the most important factor of real (physical) economic growth will be, initially, in large-scale public works in these categories of infrastructure-building.

This initial phase of rebuilding the physical economy and

employment, will overlap an initially gradual, but accelerating factor of scientific and technological advancement. Government-sponsored science-driver programs, such as the space program, will be a leading element in technological spin-offs spilling into growth of the general rate of increase of per-capita productivity. As in the case of the spill-overs from the Kennedy Moon-landing program, especially the programs in motion prior to the crucial cut-backs of 1966-1967, the general rate of increase of productivity will continue to flow into many categories of designs of products and improvements of productive processes, during as early as the first decade of a recovery program.

These programs of investment and employment will be steered by combinations of interacting sets of changes in U.S. monetary, credit, and taxation policies. These policies will be crafted to shape the future of the economy for one to two generations yet to come. In short, we are designing the next long-range physical-economic cycle; we are building the intention of the "orbital" cycle into the next cycles of the economy, in advance. This is somewhat similar to what the Fifth Republic government of President Charles de Gaulle knew as "indicative planning," not Soviet-style, "socialist state planning."<sup>57</sup> The U.S. economy's private sector, is to be returned to being essentially an entrepreneurial economy, rather than a "shareholder value" economy, a production-oriented society, rather than a consumer society, as I shall now explain again, briefly, at this point.

In the British system, which Karl Marx wrongly praised as the scientifically competent version of "capitalism," the economy is intended to serve the special interest of a political system based on service to the interest of a Venice-modelled caste of rentier-financier and related forms of oligarchical interest. In this oligarchical system, the British monarchy performs the function of an hereditary doge for an imperialistic form of global, rentier-financier, maritime power. So, Hobbes, Locke, Mandeville, Adam Smith, and Jeremy Bentham,

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57. On "indicative planning," see Jacques Cheminade, "How Economic Planning Worked Under France's Charles de Gaulle," *EIR*, April 16, 1993; and Cheminade, "FDR and Jean Monnet: The Battle vs. British Imperial Methods Can Be Won," *EIR*, June 16, 2000. The fruits of the choices made during those years can still be seen in France today, notably as in the nation's strong nuclear energy sector. Franklin Roosevelt's use of the Reconstruction Finance Corporation, by which Roosevelt guided issues of state-issued and -directed credit to reconstruct the U.S. economy, was used as the model to establish Germany's highly successful, post-World War II Kreditanstalt für Wiederaufbau (even the name being a translation of the English), as Richard Freeman discusses in his contribution to this report. The crucial issue of the state's role in securing the economic welfare of the nation was also posed by Dr. Wilhelm Lautenbach, in a plan presented to a 1931 meeting of Germany's Friedrich List Gesellschaft (see Helga Zepp-LaRouche, "The Lautenbach Plan for Economic Recovery," *EIR*, March 20, 1998). Lautenbach's proposal was titled "The Possibilities of Boosting Economic Activities by Means of Investment and Expansion of Credit." Had it been implemented, the economic conditions which enabled the Nazis to come to power would have been eliminated.

typify what (Sir) Henry Kissinger has praised as British ideology, from the bottom up.<sup>58</sup>

In opposition to the British system, the American constitutional system of political-economy, as described by Hamilton, Friedrich List, and Henry C. Carey, among others, has the following characteristics. The function is to secure the national defense and general welfare, through emphasis on physical-economic measures required to promote the increase of the productive powers of labor, both per capita and per square kilometer of the total land-area of the nation.

Thus, there are two most prominent structural differences between the British and the American systems. First, under the British system, the power to create money and credit is lodged within a private financier interest, as typified by the role of the Bank of England. Under the American constitutional system, the absolutely sovereign power of the republic to issue currency, and create credit (national debt) at will, resides sovereignly in the Presidency, but with the consent of the Federal legislature. The natural expression of the U.S. system is the dominant role of a national bank, rather than a central banking system, the latter including the explicitly anti-constitutional Federal Reserve System.

Under the American system, the responsibility for the development and maintenance of basic economic infrastructure lies in the area of shared responsibility of the Federal and state governments. In the American system, the development and maintenance of basic economic infrastructure is conducted under the relevant, respective authorities of state and Federal governments, as through a system of regulated public utilities maintained through a division of labor between these two principal levels of government.

The development and maintenance of basic economic infrastructure, is, as typified by the Tennessee Valley Authority (TVA) case, the foundation on which private entrepreneurship is enabled to prosper through investments in technological progress.

The included object of any competent recovery measure, is to free the U.S. economy from the disabling shackles of the British system's influence, to return fully to the American System of political-economy. Hopefully, the United Kingdom will join us in bringing about this reform.

## Strategic Defense and Economy

About two decades ago, I knew then-U.S. Representative Jack Kemp as a pleasant, and hospitable fellow, whom I met several times in his office at the U.S. House of Representatives. He was keen on "incentives," but, unfortunately, he, like his virtual "evil twin," Senator Phil "Boll Weevil" Gramm,

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58. Henry A. Kissinger, "Reflections on a Partnership: British and American Attitudes to Postwar Foreign Policy, Address in Commemoration of the Bicentenary of the Office of Foreign Secretary," May 10, 1982, Royal Institute of International Affairs (Chatham House), London. The full text is in *EIR*, Jan. 11, 2002.

preferred his remedies to be very simple ones.

"Incentives" are extremely important for the functioning of an economy, in the degree that they may express an efficient intention to do good, in the sense of Kepler's use of intention. Incentives, in the best sense of that term, are the expression of an experimentally verifiable universal physical principle. However, as anyone who has worked with the issue of sales and marketing policies, and sales incentives, should recall, most of the "incentives" concocted by the more typical, simple-minded sales managers, do not even attempt to attain such empyreal virtue. Simple-minded sales and other so-called "economic" incentives tend to backfire, in one way or another, sooner or later. Like diets which make you slimmer in the process of killing you, simple-minded, monetary and related "incentives," such as monetarists' measures of so-called "fiscal austerity," are often witch's potions, whose side-effects may be worse than the disease for which they are advertised as remedies.

The fact, that the accounting office says two measures of performance are correlated statistically, does not mean that they will continue to correlate in that way, if one of the figures is used as the primary basis for a novel sales or marketing incentive. The apparent goal will often be achieved, temporarily, but usually with undesired long-term side-effects on the account of more essential, ultimate objectives.

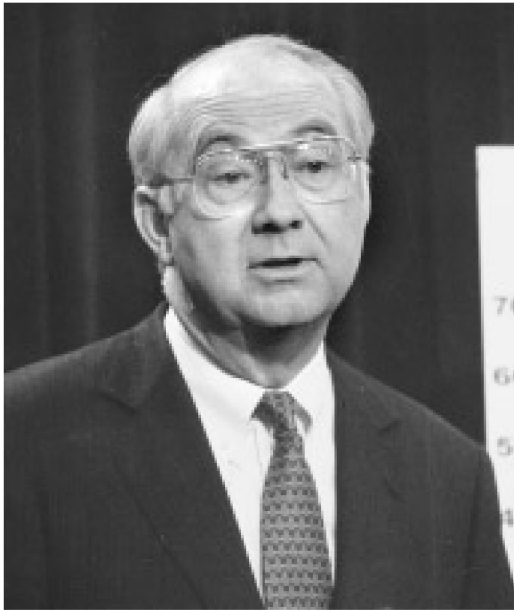
The relevant point here, is to understand why simple-minded use of "incentives" will usually defeat the very purpose which the credulous authors of such policies had thought they had intended, as former Representative Kemp's Kemp-Roth legislation produced some among the awful consequences which are displayed among the economic ruins of our formerly robust U.S. economy today.

Intentions tend to succeed, only if, and when they reflect a comprehension of the complexities of the interaction between, on the one side, the individual and his act, in a local setting, and, on the other side, the reciprocal relationship between that action, in that local setting, and the economy as a whole.

The popularized attempts to develop methods for optimizing the relationship of local actions to the economy in the large, such as input-output systems analysis based on Professor Wassily Leontieff's methods for mapping of the U.S. economy, are a step in the needed direction of correlating the particular and the whole process, but they err in conceding to the pressures to reduce these reciprocal relationships to a linear approximation.<sup>59</sup> The linear approximation is, in fact, useful, provided one is willing to learn from it, but without actually believing it. Linear input-output "modelling" is useful when it is employed as a method for adducing meaningful, and real ontological paradoxes in the current linear thinking of professionals generally, or managements in particular.

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59. As I did during the 1950s, I take the side of Leontieff against the "ivory tower" faddists of Tjalling Koopman's Operations Research circus.



The delusional monetarist idea of “incentives”: well-intentioned former Rep. Jack Kemp’s 1982 Kemp-Roth tax-incentive legislation, produced disasters of deindustrialization and speculation; Kemp’s “evil twin,” Sen. Phil Gramm, used deregulation’s “incentives” to unleash the unbridled financial corruption and lawlessness typified by Enron.

On the subject of choices among incentives, one of the most widespread and dangerous forms of lunacy today, is the monetarist doctrine respecting inflation. The idea that inflation should be checked by fiscal austerity, and depression resisted by tax-cuts and monetary pump-priming, is the root of the folly of most recent decades’ discussion of economic incentives. Jack Kemp was only one among the majority of members of Congress of his time, who were lured into that kind of error.

The management of such matters, belongs properly to the department of regulatory functions of government. The success of the 1945-1963, post-war-reconstruction phase of the Bretton Woods monetary system, is an example of this. The system of regulation set up under Franklin Roosevelt, as continued in U.S. domestic policy until the disastrous Nixon and Carter administrations, is an example of the only effective methods known so far, for providing incentives to the combined public and private sectors of a modern agro-industrial economy.

Here, for similar reasons, all attempts to apply the mind-map of standard financial accounting to an economy, fail, often disastrously, for precisely the same reason. We require a truly “non-linear” conception of this reciprocal relationship between the individual action in a local setting, and the whole physical-economy in which that local action is situated. Any approach which is contrary to my warning here, is therefore, as is said among professional economists, a potentially fatal “fallacy of composition” of the array of facts considered.

Contrary to the implied assumptions of Leontieff et al., all of the crucial economic relationships are intrinsically non-linear. Consider some of the most basic principles of economy to be applied to policy-shaping in these matters.

We must think in the same way indicated by my adoption

of Riemann’s conception of differential (physical) geometry, as the appropriate standpoint from which to express the way in which the characteristic “curvature” of physical-economic space-time must be defined. In this application, the use of the term “non-linear” were better understood by following the prescriptions I set forth within the preceding chapter: substitute the term “non-Eulerian,” meaning also “non-Lagrangian,” “non-Cauchyian,” as also, “non-Newtonian.” Typical is the demonstration, by Carl Gauss, as by Leibniz earlier, of the absurdity of the entire, axiomatically linear (“reductionist”) mathematical system from which Euler adduces his famous folly on the subject of what he termed “imaginary numbers.”<sup>60</sup> Since this is a crucial point for all competent economic policy-making, I summarize the essential definitions here.

In the evolutionary development of modern mathematical physics, from Cusa, Leonardo, and Kepler, through Leibniz, Gauss, and Riemann, the most characteristic feature of the development of the relevant formalities, has been, as I have emphasized here earlier, the process of discarding each and all of the types of arbitrary, “ivory tower” sets of definitions, axioms, and postulates, which characterize the methods of Aristotle and of the prevalent, defective forms of classroom and textbook instruction in so-called Euclidean geometry. This point is so crucial for understanding the possibility of an economic recovery, that I must restate this point now, once again.

60. Pedagogicals summarizing and assessing Gauss’s argument on the matter of the complex domain, are provided for my associates and others, by Bruce Director. For a published selection, see Bruce Director, “The Division of the Circle and Gauss’s Concept of the Complex Domain,” *21st Century Science & Technology*, Winter 2001-2002.

In the rise of modern science through, chiefly, the initiative of such of Cusa's writings on scientific method as his *De Docta Ignorantia*, the most characteristic expression of progress in science itself, has been the process of eradicating all Aristotelean and other reductionist forms of "ivory tower" definitions, axioms, and postulates from mathematics, and replacing those with a new kind of "axioms," notions of extended physical-space-time magnitudes, concepts which are rooted entirely in the act of discovery of a universal physical principle. I have described that, once again, earlier, in this present report. For the purposes of today's urgently needed reforms, that must be recognized as the central principle of the history and future development of all modern economy.

The state of mind associated with today's financial-accounting and related forms of academic economics dogma, such as the notion of "sound measures of practical business management," is that those states of mind tend, in fact, not only to ignore, but to deny, even aggressively, the mission upon which all economic progress absolutely depends, the factor of anti-entropy in the physical economy. The foolish belief known as "benchmarking," expresses that kind of widespread mental disorder among today's leading business mis-managers. Hence, all of the so-called incentives, of the monetarists and others, on these matters, prove to be worse than foolish in their effects.

Such disoriented mentalities as those seduced into the cult of benchmarking, represent a reversion to the pre-scientific level of the Eleatics, Aristoteleans, and sophists such as the modern followers of William of Ockham. They substitute a distorted shadow of experience for the substance, thus degrading the mathematical formulations copied from physical science, to a sterile mere describing of appearances, as if at the blackboard, or the currently common surrogate for the blackboard known as the computer. In the end, it simply does not work, which, as the present world economic crisis attests, may turn out to be "the end" in more ways than one.

Thus, professionals afflicted with such popularized academic follies as those, inevitably tend to repeat Euler's folly, as typified by his foolishly deprecating complex numbers as merely "imaginary numbers." It is in precisely the paradoxical implications of number theory, as considered since Cardan's cubics, that the modern mathematician has discovered afresh the fact shown by Gauss's *Disquisitiones*, that it is not abstract mathematics as such, but the physical universe which has created even the simplest kinds of numbers, numbers whose manifest ontological paradoxes reveal the superior authority over mathematics, of the controlling hand of notions of extended (physical) magnitude.<sup>61</sup>

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61. This notion of the physical role of the complex domain is implicitly as ancient as Plato's writings on the ironies of the Five Platonic Solids, as in his *Timaeus*, and as emphasized in modern times by Pacioli, Leonardo da Vinci, and Kepler. The proof presented by those ancient and modern sources, pre-figured Gauss's argument in the matter of bi-quadratic residues, and show up in such important locations as the successive corrections to Euler's mistaken assumptions on prime numbers, by Dirichlet and Riemann. Both geometry

The fundamental rule for competent economists is: national, and world economies must progress or die. Each principle, and its derived technologies, which is generated as knowledge by cognitive discovery of hypothesis, appears as something new in the spectrum of economic action. It is this relative newness which is the only ultimate source of anti-entropy, and, therefore, ultimately the only source of actual profit. Any economic policy which resists such innovations, is intrinsically entropic, and therefore tends toward the worst ultimate outcome, either sooner or later. We are now dwelling in a time during which later has become, inevitably, sooner.

This needed anti-entropy is introduced to practice, not merely as commentary or interpretation, but in an appropriate form of action. This action requires several additions to the previously defined chart of cost accounts of any sane accountant or business manager. It represents an added cost, which must be served (e.g., paid), as the price of economic success, even economic survival. It is on this point, that standard accounting practice fails, on principle, sometimes fatally. The popularized, monetarist delusions of "fiscal austerity," typify the potentially suicidal, psychotic phase of such popularized errors of method.

Contrary to such varieties of ignorance and delusion, there are two general keys to solving the kinds of problems associated with the way in which financial accounting typically ignores the crucial aspect of the reciprocal relationship between local action and the larger situation in which that action occurs. First, consider the way in which valid new technologies are generated for application to specific situations. Second, consider the relationship between local action as such and the general environment as such.

To begin with, therefore, consider how, in modern economy, this role of creativity in making true net profit possible, is found most commonly in two kinds of institutionalized activity. First, it is found, on the one side, in an educational system which features pedagogical methods equivalent to a Classical humanist program, and also features related emphasis on both pedagogical reenactments of crucial discoveries of principle, and fundamental research experiments based upon the lessons derived from experience in mastery of pedagogical experimentation. Second, it is expressed to great positive effect by what are described as science-driver programs, work in the footsteps of Leonardo da Vinci and Kepler, such as the program for science of France's Jean-Baptiste Colbert, or the initial period of life of the Monge-Legendre École Polytechnique, and, more recently, Twentieth-Century nuclear and space programs as conducted principally as initiatives of Germany, Russia, and the U.S.A.

Although the science-driver program is, at least implicitly, an extension of the work of the educational system as a whole, it has well-known special features of its own. The

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and number are products of the physical universe, not abstractions imposed upon the universe; they reveal this parentage in crucial ontological paradoxes, as the cases of the Golden Section and bi-quadratic residues attest.



“Today, ‘crash science-driver’ programs will be the cutting technological edge of the effort to put both the U.S. and world economies back on the pathway toward sustained growth, out of the present world depression.” Precision laser development under the Strategic Defense Initiative program.

investment of resources on a large scale by governments, has an effect on the physical economy akin to the way in which modern warfare has impacted the technological and related development of economies, since Leonardo da Vinci’s and Machiavelli’s time. Again, the revolution in warfare launched jointly by Lazare Carnot and the Monge-Legendre École during the 1792-1794 interval, is the neatest example of the relationship between large-scale science-driver programs and the related technological effects in the history of modern warfare. The U.S. economic mobilization for war, under Franklin Roosevelt, expresses that connection.

The most significant implication of that connection, proves a case directly opposite to the opinion of many loose-tongued contemporary pacifist ideologues. It was out of the development of crash-program approaches to the defense of the modern sovereign nation-state against ancient and feudal traditions of perpetual warfare and world-empire, that the

modern military doctrine of peace was achieved. Machiavelli reflects this in his policies. The 1648 Treaty of Westphalia, on which all valid attempts at civilized life has depended axiomatically since, expresses the same trend. The 1776-1783 war-policy of Benjamin Franklin, et al. expresses that outlook on the role of technological progress in securing the establishment of an order conducive to peace. The modern theory of a strategy of defense, came chiefly from the combined influence of scientist-soldier Lazare Carnot and the German Classical humanist Gerhard Scharnhorst.

Modern policies of strategic defense, like my own proposals for what was later publicly presented by President Reagan as a “Strategic Defense Initiative (SDI),” used the military implications of a science-driver program, as an approach to durable peace. That created the opportunity which has been mislaid during the seventeen years since Soviet General Secretary Yuri Andropov flatly rejected President Reagan’s (and my own) proposed discussion of the matter, and since the utopian faction, typified by my since-deceased enemy Daniel Graham’s utopian faction within U.S. military and related circles, implicitly allied themselves with Andropov, in doing their utmost to sabotage the program from the U.S. side. A study of the fortifications designed, constructed, and commanded by Vauban, and Carnot’s articulation of the principle of strategic defense, attest to the historical implications of my own, and President Reagan’s proposals on strategic defense, back during, especially, the 1979-1986 interval.<sup>62</sup>

Today, “crash science-driver” programs will be the cutting technological edge of the effort to put both the U.S. and world economies back on the pathway toward sustained growth, out of the present world depression. The political impact of the physical benefits of such progress is large, but should not be permitted to blind us to the more crucial social factor.

The crucial point is, that a people which locates its human

62. My first published statement pushing for development of the possibility of a strategic ballistic defense based on “new physical principles,” was issued during 1979. My proposal for such a policy was first issued in August 1979 as part of my campaign, against President Jimmy Carter, for the 1980 Democratic Party’s U.S. Presidential nomination. Later, at the close of 1981, I suggested an exploratory discussion of my proposal to relevant circles in the Reagan Administration, and launched the campaign for that policy in February 1982, both publicly, and in my back-channel discussions with the Soviet government on this and other subjects. The formulation of the relevant segment of President Reagan’s March 23, 1983 televised address, was prepared on the basis of the essential features of my earlier specifications in the back-channel discussions of February 1982-February 1983.



identity in the cognitive nature of the human individual and his or her social relations, is the only conception of man which could ever promote a durable peace on this planet. All utopian schemes have shown themselves to be simply the babbling of the kinds of fools who wander into war out of the effects of their own folly. Proposals for “world government” and “globalization,” or “world rule of law,” are the most likely causes of the generalized, even perpetual warfare, which is being proliferated on this planet today. Typical of the sheer horror of such lunacies is the joint proposal of the madmen H.G. Wells and Bertrand Russell, for achieving “world government” through the terror of “preventive nuclear warfare.”<sup>63</sup>

Peace was never a self-subsisting state of political affairs; peace, as distinct from the temporary absence of warfare, is achieved only through those forms of cognitive progress, as in Classical culture and science, which foster the individual’s and nation’s conception of man as a cognitive being.

The science-driver program, with the cultural optimism it fosters, is inherently both the best way to win a war, and also the surest pathway to durable peace. Its characteristic feature, is that it accelerates the rate of discovery and transmission of new physical principles into large-scale infusions of these discoveries into the practice of both the machine-tool sector of industry, but also into the broadest possible application of these new technologies into production and use in general.

## Changing the Situation

In my summary review of the economic implications of colonialism, in the preceding chapter, I emphasized that the relative productivity of the firm and its operative, varies most significantly with the total economic situation, such as that national economy within which those productive and related activities are situated. One of the most compelling illustrations of this is the case, as is being reported in Freeman’s portion of this report, of the impact of the Tennessee Valley Authority (TVA) project, in bringing about a revolutionary change in the productive powers of labor, in both agriculture and industry, throughout the affected region.

Contrary to typical anarcho-syndicalist and kindred illiterate gossip on the subject, productivity does not radiate primarily from the point of production into its immediate environment. Productivity is transmitted, primarily, through the increase of the potential productivity of the region or nation,

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63. Note, as documented in my numerous earlier locations on this subject, that the original proposal for world government through terror of nuclear weapons, was made publicly by Fabian Society intelligence official H.G. Wells, in 1913. This policy was integral to the 1928 utopian alliance between Wells and Bertrand Russell, over the theses of Wells’ *The Open Conspiracy*. This was the working hypothesis of Russell’s founding of the Unification of the Sciences project, and of Russell’s often-repeated proposal of September 1946, to use “preventive nuclear warfare” against the Soviet Union as the weapon of terror employed to achieve the early establishment of world government.

as is illustrated so brilliantly by the history of the TVA. The chief factor, in determining the potential productivity expressed within a region, is, as the TVA case illustrates the point so dramatically, the development of the basic economic infrastructure, the framework within which the acts of production are situated.

Return to the earlier discussion of the economic principle of the fossil, as the notion of a fossil is to be defined more broadly, at least implicitly so, against the background of Vernadsky’s Noösphere.

For example: Biological development generates relatively higher species, and also broader selections of changes in available species. The new repertoire of interacting species, then becomes the situation on which the successful emergence of a new species or variety depends. So, in producing qualitative changes in the environment — as development of transportation, energy, water-management, educational, and health-care systems illustrate the point — more favorable conditions for the expression of cognition appear. These new conditions then become a kind of fossil-resource on which the productive potential of the relevant labor-force depends. The injection of a new technology into a situation so improved, then represents the reciprocal relationship between discovery of new principles of technology, and the realization of the application of those technologies as higher relative physical productivities.

Not only are new species, and their fossil effects needed; the supply of such fossils must be either renewed, or advantageously superseded by new choices, if the process is not to be degraded by attrition. This phenomenon is another example of the role of physical-economic cycles.

For this, we must look more closely at the practical meaning of the term, “technological composition of employment.”

Ask yourself this question: “When we speak of a ‘division of labor,’ what is the physical object of which we are speaking?” Any object must have an intrinsic unity; otherwise, it is not an object, but merely a loose description of some poorly defined, actual or possibly existent effect. In this instance, the appropriate object is “increase of the productive powers of labor.” The subject of this object is an implicitly measurable amount and type of “change.”

Ask, then, “What kind of change is this? On what scale do we measure this?”

As I have already emphasized, no competent measurement of economic change can be made, except in terms of long-ranging cycles of entire economies. We shall come to the matter of the standard for defining what are not much more, nor much less than “entire economies,” in due course. For the moment, as a matter of approximation, consider the U.S.A. as a whole, over a period of two generations, as an example of an “entire economy.”

Then, construct something comparable to a Keplerian “orbit” for that period. In this orbit, unlike the repeating orbits of Kepler’s planetary system, it is the rate of change to a higher

state, rather than apparent arrival at the relatively same point, which is the object considered. Take a simplest sort of first approximation. Instead of an elliptical orbit, a catenary (“hanging chain”) trajectory, defining this in the relatively simplest way, as Leibniz et al. defined this notion of physical curvature (as distinct from a circular, “ivory tower” curve, such as the cycloid). In first approximation, the result for a single long-ranging cycle would be a single approximation of what is known among economists as the functional equivalent of a form of “Kondratieff curve:” a “hanging chain” form, but upside-down, and of a specific form akin to the catenary. In the model we desire, the actual curve would be the result of compounding a series of staggered, overlapping such curves, whose sum will be a kind of successively upward-moving cycles of a roller-coaster ride, up to destinations which are, successively, higher states of potential relative population-density.

The object of designing the long-ranging period of a generation or two, is to define a kind of super-experiment in which such a desired effect will be achieved. Now, the fun begins!

We are not building a model of something which has occurred, but of something we must discover how to cause to occur. We have several kinds of change to consider, in building such an experimental plan of action.

Start from that modified “model” of the Noösphere, which I have specified in the preceding chapter, as a modified form of Vernadsky’s definition. This “model,” which is a variable “model,” referenced to actual known phenomena, provides us the basis for the first step in constructing our experiment: Define the setting of the functional relationship between mankind (society) and the universe, for the condition mankind’s potential relative population-density must be increased.

This approach takes into account, from the start of the investigation, known characteristics, including the cyclical factors introduced by attrition. Since we know that the Biosphere itself has a built-in anti-entropy factor, our task is to add mankind’s contribution to increasing that margin of anti-entropy. In other words, if we know that some important feature of the existing Biosphere tends to replenish itself at a certain rate, such as the rate at which certain minerals are brought to near the surface of the planet from the interior; and if we know that the rate at which we are consuming those minerals is greater than the apparently spontaneous rate of renewal of the resource; how does man more than make up the deficit, either explicitly, or in effect?

For what should be obvious reasons, one of the best kinds of experimental questions to include in our roster, is the challenge of man’s exploration of the Solar System. The first step, of course, is to get beyond our atmosphere, into geostationary orbit, and to man’s landing, more or less regularly, on the Moon. That is the precondition for the next step, outward movement within the Solar System as a whole, beyond the Earth’s Solar orbit. The first big step beyond that, is the establishment of a manned research-station and advanced base of

operations, on the subsurface of Mars. The next step beyond that, requires consideration of the problem of discovering fuels and fuel-systems which permit continuously powered, willful flight into the region of the outer planets of the Solar System.<sup>64</sup> And, so on.

Consider the challenge of the so-called Sanger project: the use of a so-called “scramjet” system, of speeds of up to Mach 7 or 8, to reduce vastly the cost of lifting an object from the Earth’s surface to the top of the atmosphere. By “breathing” oxygen from the atmosphere, rather than carrying the weight of that oxygen as fuel within a rocket, more than an order of magnitude of physical cost is avoided in delivering a pound of net weight to geostationary orbit. We are using up the same amount of oxygen, and thus putting no more than an approximately equivalent strain on the replenishment of the “consumed” oxygen.

The fact that we are using oxygen as a fuel, should point out to us, that the Earth’s atmosphere was produced, like the oceans, rivers, and lakes, as a fossil remain of living processes. Flight into space, is not a subject of abiotic physics; it is an expression of the lawfulness of the Biosphere, and is an action which expresses the still higher lawfulness of the Noösphere.

The importance of posing such challenges, is that this set of questions, bearing upon exploration of space beyond our atmosphere, bears in a crucial way on the task of understanding the workings of the man-nature relationship within the bounds of the Earth’s Biosphere. Looking at the implications of that mission, as part of the continuing present and future mission of continuously increasing mankind’s potential relative population-density, is the only scientific way to define a science of economics, and of national political-economic policies for today. It is from that standpoint, and no less, that the science and politics of the Noösphere must be defined for the circumstances of today’s systemic, planetary crisis.

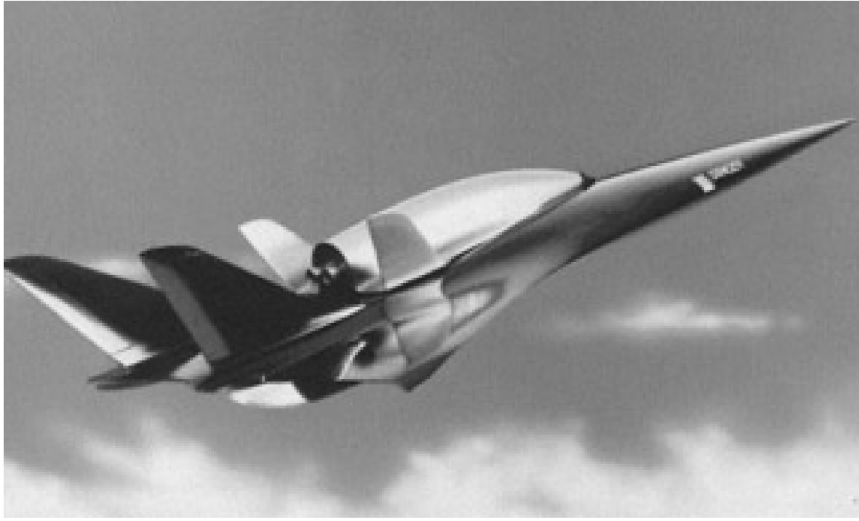
Now, within that context, consider the differential function which corresponds to the integral “orbits” so situated. Look at the “structural characteristics” of the division of labor within the labor-force as a whole, from this vantage-point. That considered, return to the question: How do we define the momentary (i.e., short-term) factor of change, for its effect in changing the long-ranging cycle as a whole?

It would be desired to develop formal geometries for the implied purpose; it is indispensable that the idea of such a physical geometry be securely planted in the mind of the economist as policy-shaper. Therefore, focus attention here on the following points of illustration.

The willful increase of society’s potential relative population-density may occur solely through the willful processes of cultural progress by Classical pathways. Therefore, the

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64. This is one of the questions which make the exploration of the possibility of controlled matter-antimatter reactions such a fascinating topic of advanced experimental work.



An artist's drawing of the two-stage Sänger II plane, with its hypersonic ramjet and space plane: "The importance of posing such challenges, is that this set of questions [of] exploration of space, . . . bears in a crucial way on the task of understanding the man-nature relationship within the Earth's Biosphere."

paradigmatic expression of such action within the activity of the nation's population, including its labor-force most emphatically, is the transmission of discovery of universal physical principles within, and by means of the social division of labor within the population as a whole. This generation and transmission of universal physical principles, and of the technologies so derived as by-products of such discoveries, is the form of action which defines the anti-entropic curvature of mankind's willful practical relationship to the universe as a whole.

This generation and transmission occurs through the education and other development within the population as a whole. It is focussed on the relationship between production and the system as a whole through the transmission of such knowledge within, and across the lines of division of labor in production and related activity. Therefore, look at the structural composition of the employment of the total labor-force, from that vantage-point.

The progress in long-ranging development of the realized productive powers of labor of economies, is associated with certain patterns of change within the structural composition of the division of labor in society as a whole, especially in the departments of production and design of products as such. This is typified by the advances in both the general cultural level of social practice within society, and the scientific and technological advancement of the education and competent practice of the labor-force. Look at the latter aspect first, and then return to look, from the top down, at the cultural development of the population at large.

Start at the base of the general division of productive labor, of what used to be called, often, "blue-collar" labor. The upgrading of the standard skill-levels, standard of living

of households, and degree of influence of Classical forms of cultural activities among this primary stratum of "blue-collar" labor, is the proper basis for the first-approximation estimate of the productive potential of the labor-force considered as a whole. The ratio of employment of skilled labor, to semi-skilled and unskilled labor, is the first approximation of an estimate of relative productivity of the labor-force as a whole. The physically defined capital-intensity of investment in production and design of products, refines the broad estimate. Crucial is the rate at which advanced technologies are being generated and also injected into the productive process and design of products.

These estimates must be qualified to take into account the level of development and maintenance of basic economic infrastructure. It is the immediate

interaction between these features of basic economic infrastructure and the degree of development of the social division of labor in production as a whole, which is the primary determinant of relative productivities of national economies as wholes.

The refined estimate for physical output as such, is obtained, in first approximation, by the role of the state, directly and indirectly, in promoting and implementing a science-driver into the development of the combined infrastructure and the design, production, and distribution of goods. The emphasis on this mission-dedicated role within both general and higher education, and the machine-tool sector of research, development, and production, should be the principal concern of government's role in promoting technology-driven progress in the increase of the potential relative population-density of the national economy as a whole.

This emphasis on science and technology, must be complemented by a war against the dangers of what is most usefully defined as "cultural constipation." The lack of general practice of Classical forms of cultural life, complemented by the want of a Classical humanist mode of education in schools and universities, will tend to produce a population which is, in first approximation, crippled in its scientific and technological potential, and, at a later point, virtually incapable of coping with the kinds of realities which a successful form of economy must address.

The simplest anecdotal illustration of the latter point, is that it was the stated devotion of Abraham Kästner, Gotthold Lessing, and Moses Mendelssohn, to defense of the work of Gottfried Leibniz and J.S. Bach against the decadence of the Eighteenth-Century Enlightenment of Abbot Antonio Conti, et al., which made possible the American Revolution, and

all of the greatest cultural contributions to the advances of European civilization during the late Eighteenth, Nineteenth, and Twentieth Centuries. As a matter of contrast, we have the willful destruction of the culture of the Americas and western Europe, in particular, through the post-1945 spread of the influence of countercultural pestilences such as existentialism and the 1960s launching of the mass-based phase of the “rock-drug-sex youth-counterculture.” Classical humanist educational methods, and Classical culture, have been uprooted by aid of the spread of the drug-culture. Most sections of the university populations of today are functional illiterates in both the physical sciences and in matters of history; we see, thus, in day-to-day experience, the resulting inability of the generation of recent university graduates to cope with the realities of technology in general, or the economy in particular.

The list of factors just identified here, typify the characteristic of that unified object of action, which transforms the potential and actual productive powers of an economy over the span of one to two generations. These changes, for better, mediocre, or worse, can be assayed in the current moment, by treating the current moment’s action as reflecting the relevant long-ranging cyclical tendencies. That, in brief, is the essence of all competent long-ranging forecasting. That is the key to shaping present policy-making for its impact on both the present and future.

The proper definition of productivity, therefore, requires a comprehension of the interdependency between two factors. One is the characteristic of the total economic environment in which production is occurring; the other is the impact on that economic environment, by the quality of relative technology being locally applied within that environment. The radiation of the technology within the environment, changes the environment, and the environment determines the impact of the technology. In mathematical terms, the environment is typified by the notion of a characteristic curvature of the physical-space-time represented by that society at that time; the new technology represents the factor of change in the curvature. The two considerations are related by situating the two within the conceptual framework of a physical-economic form of Riemannian differential geometry. This is another example of the way in which physical-economic cycles appear.

Now, consider, briefly, the way in which “free enterprise” fits into this image of the policy-shaping functions of long-range forecasting. Look back toward “free enterprise” from a flight into Solar space beyond Earth’s orbit.

In developing a space-oriented “crash program” mission, we start from the fact that we have available the combination of, first, a repertoire of known physical principles and productive capabilities, second, the ability to define, in at least a preliminary way, the unknown principles and technologies the mission will probably require, and, finally, a set of some of the crucial parameters which must be regarded as control-

ling for the attempted primary target of the mission as a whole. Thus, a space-oriented “crash program” mission is to be examined for its qualities as a much better focussed expression of the same kind of “indicative planning” for long-ranging economic development adopted by the Fifth Republic’s President de Gaulle.

Look at this against the background of the catastrophe which struck the Greater Boston, Massachusetts area’s Route 128, when the guillotine fell on much of the Kennedy space program’s development initiatives, during 1966-1967. Look at the included impact of that 1966-1967 trend on that and adjoining “upstream” regions of New England today. All well-defined “crash” development programs, such as the Franklin Roosevelt TVA project, tend to fall neatly into place within the entrepreneurial environment’s potentialities, simply because the mission itself is well defined in broad terms.

Such “crash programs” call into play the cognitive impulses of the able entrepreneur, scientist, inventive engineer, and others. The British “operations research circus” as described by P.M.S. Blackett, is also an illustration of the relevant point. In part, that “circus,” as so described, was “scrapheap” science, and the post-war U.S. efforts to codify “operations research” was predominantly a nerd’s ivory-tower nightmare. Follies aside, when entrepreneurs and persons of a sense of scientific mission are called into play by a sense of national mission, the relatively best results are obtained, in net effect, as in no other way.

That is the crux of the distinction between “indicative planning” and “bureaucratic” management. Large-scale, government-conducted organization, building, and regulation of large-scale basic economic infrastructure is indispensable, and is approximately half of the proper total output of a healthy modern economy. However, it will succeed only to the relative degree it is in symbiotic partnership with the entrepreneurial factor in closely-held farms and manufacturing facilities, and with a pervasive emphasis on preference for the Classical tradition of emphasis on cognitive activity, in the leading positions within the institutions of society as a whole.

The “crash program” mission thus typifies the combining of all these diverse, essential factors of national economy in an essential way. A good “crash-program” mission orientation, puts a point on the shaft of the economic spear.

This brings us to the matter of monetary and financial policies.

## **B. Money, Credit, Finance, Prices, and Taxation**

Once we have adopted the improved view of Vernadsky’s Noösphere, which I have freshly summarized in the preceding chapter, there should be no remaining intellectual obstacle to recognizing that the basis for economic processes lies within the bounds of a science of physical economy. It is sufficient to include the recognition, that the specifically human powers

of cognitive discovery of universal physical principles also subsume the physical effects produced by the conceptions associated with Classical humanist forms of culture.

From this vantage-point, it is but one more intellectual step of recognition, to recognize that there is no “natural,” purely economic basis for the relative values of prices and money, but the political-legal fictions arbitrarily imposed by whatever agencies have, for the moment, seized control over the affairs of a society. A summary of that issue must be inserted here, as the most efficient way to clarify the wild-eyed errors of today’s popular opinion on the subject of “my money.” Once that error is exposed, the remainder of the argument falls rather neatly into place.

In modern history, the worst among the currently widespread extremes of more or less popularized lunacy respecting economics, dates from four well-known, Eighteenth-Century aberrations, listed in the following historical sequence. First, the concept of *laissez-faire*, by, variously, the Conti network’s feudal ideologue Quesnay, Bernard Mandeville’s Faustian theory of glory achieved through promoting vices, and the British East India Company’s Adam Smith’s “free trade”; second, the notion of wealth created through fictitious capital gains, of John Law, et al.; third, the popularization of the proto-Nietzschean, “Robinson Crusoe” model, as adopted during the Twentieth Century by the infantile John von Neumann and his accomplice Oskar Morgenstern; and, fourth, the deluded search for a mathematically perfected “natural price of gold.” The Nineteenth Century added a fifth, kindred quality of delusion, the deluded search for a primeval hoard of financial capital, with or without leprechauns, as by Karl Marx.

All five of these delusions have a common basis in that pathological state of mind known as the Eighteenth-Century British and French “Enlightenment,” whose common name is the Ockhamite empiricism of Venetians Paolo Sarpi, Abbot Antonio Conti, and their followers.

Typical of that so-called “Enlightenment” generally, is the hysterical pretense of “being scientific,” which is to say, seeking to reduce everything to a matter of ivory-tower mathematical schemes at the blackboard. What the anti-scientific, ivory-tower schemes of Ptolemy, Copernicus, and Brahe did in that way for astronomy, was carried to an extreme, as farce, for economics, by what von Neumann and Morgenstern did with their infantile “Robinson Crusoe” myth of marginal utility. Similarly, all of the economic dogmas of the five types I have derided here, were invented as names for that elusive devil in the detail of statistics, that infinite pick-pocket which Adam Smith named “the invisible hand,” and the more honest Charles Dickens, plainly renamed the principle of the “The Artful Dodger.” None of these five, are actually theories; they are, in fact, lunatic cults.

There is nothing natural in the behavior of money in an economy. Money in modern society is a political fiction, whose best possible intrinsic feature is that, when compared



“ [Money’s] most essential role in modern society is its role as an instrument essential to maintaining the functional sovereignty of the modern nation-state and its economy.” From this standpoint, Benjamin Franklin in 1729 launched the competent study of the effective issuance of currency by modern republics.

with barter, its use tends to facilitate trade and investment. However, its most essential role in modern society is its role as an instrument essential to maintaining the functional sovereignty of the modern nation-state and its economy.

The emergence of certain standards concerning the imputed functional meaning of money, is chiefly the result of the hegemony of the English-speaking economies in the post-Seventeenth-Century world. The interaction of two English-speaking systems — the relatively hegemonic British System, and the contrary American System — has given a certain general shape to what is otherwise a medley of wildly differing assumptions. The nearest approximation to a sane attempt at posing an actual theory of money, is achieved by study of the way in which physical economies respond to what are predominantly arbitrary forms of monetary, fiscal, regulation of trade, and taxation policies. It happens, that U.S. policies closest to those strictly definable as American System policies and practices, present us with the nearest approximation of a practical doctrine on the management of money.

Therefore, there has never been any competent theory



precisely defining a way of fixing the value of a national currency. There have been arbitrary measures which intended to regulate the currency and its uses, some of which were less ineffective than others. For reason of the increasing role of the English language in the development of modern economy since the accession of England's Henry VII, a comparison of the development of monetary and related practices in Tudor England, and the view of that Tudor experience expressed by the pre-1688 Massachusetts Bay Colony, provides the best pedagogical bench-mark for approaching the subject of money in a system of modern nation-state economy. The most significant example from this study of pre-Eighteenth-Century practices, is the use of the issue of paper money within that Commonwealth. The remarks of Cotton Mather and Benjamin Franklin on this subject-matter,<sup>65</sup> are of essential relevance.

Therefore, given the array of complexities and conflicts among the ancient, medieval, and modern history of monetary and related systems, I define the broad requirements of a monetary policy from the specific standpoint of the situation of the U.S.A. in the world today. I emphasize the internal economy of the United States of course, but also take into account the implications of the nature of the world around us, into which our efforts must be integrated. Since no competent theory of money per se is possible in the real world, our definitions of monetary and related processes must be grounded, functionally, in the science of physical economy.

There is no sane form of monetary policy per se. All relatively effective forms of monetary policy are inseparable from the imposition of political conditions broadly classed under the heading of "regulation." These include customs duties, as such; tariff and trade regulations, both domestic and foreign, generally; price-regulation; and the use of taxation not only as a means of raising funds for government, but of shaping the flow of money-capital within the physical-economic process.

Among the most relevant examples of regulation, for our purposes here, is the proper use of investment tax-credits. I discuss that topic now, as a way of introducing the remainder of my remarks on monetary policy.

### Investment Tax-Credits

It is in the vital interest of any national economy, to prevent the takeover of its monetary-financial system by what are known as "financial bubbles." Any economy which is dominated by what is called today "monetarism," will create a form of financial-economic cancer called a financial bubble. This was a tendency built into the U.S. economy by the influence of Arthur Burns et al., a tendency which was greatly

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65. Cotton Mather, *Some Considerations on Bills of Credit* (Boston, 1691). Benjamin Franklin, *Essays on General Politics, Commerce, and Political Economy* (New York: Augustus M. Kelley, 1971, Reprints of Economics Classics). See also H. Graham Lowry, op. cit.

aggravated by the Nixon and Carter administrations, and accelerated still more by such examples as Garn-St Germain and Kemp-Roth. The systemic feature of the present world economy, which distinguishes this present crisis as a breakdown-crisis, rather than a mere cyclical depression, is the fact, that the cancerous influence of recent decades monetarist fads have turned the world's monetary-financial system into the worst, most bloated financial bubble in history.

One among the most efficient instruments concocted for dealing with the threat of cancerous financial bubbles, has been the graduated income-tax. By imposing heavy tax-rates on purely financial capital-gains, and giving relatively favorable tax-treatment to useful investments in the physical capital of technological progress, we have a result which may appear to some to be a "tax-incentive," but is actually an anti-inflationary mechanism for regulating the flow of financial capital within the economy as a whole. The object is to steer the flow of physical-capital formation and accumulation into categories which are most useful, and to drain off excessive flows of financial capital into the cancerous sink-holes of short- to medium-term financial speculation. Such taxation policies as these, flow in design and purpose from the constitutional principle of the promotion of the general welfare.

For a better insight into a prudent investment tax-credit policy, look at such eligible classes of investments from the standpoint of the elementary principles of physical economy.

On the condition that the relevant development of basic economic infrastructure is provided, investment programs oriented to increasingly energy-dense, capital-intensive modes, express the embodiment of relatively advanced technologies into both the design of products and production processes. This has an effect, as a secular tendency, to lower the net physical cost of unit-production, while improving the product. Thus, it is the desire of prudent government, to ensure that a share of the gain in productivity be returned to the investor, with the thought that this steering of the flow of income, will tend to increase the concentration of capital formation in areas of activity which better serve the improvement of the general welfare.

The use of the regulatory powers, and power to tax by government, is one way of steering the domestic flow of activities of the national economy into beneficial directions. The other measures are chiefly budgetary.

The latter are typified by investments in three areas: a.) hard infrastructure, such as mass transportation, large-scale water management and sanitation, and power generation and distribution; b.) soft basic infrastructure, typified by educational and health-care systems; and, c.) "crash program" types of science-driver programs. These programs are sustained, as government itself is sustained, chiefly through general taxation at various levels of government. The system the United States had developed, up to the middle of the 1960s, is a fair approximation of a sound arrangement.

A similar approach is applied to regulation of both domes-

tic and foreign trade. The general object of sane government is the establishment and maintenance of what has been sometimes called a “fair trade” policy.

A sane “fair trade” policy does not consider any price as sacrosanct. Rather, it is in the national interest that the nation maintain sufficient productive resources within its borders to withstand the equivalent of an extended siege. It is urgent that these resources be of a relatively competitive quality, in product and productivity. This means that the quality of the labor-force households must be maintained by fair household incomes and other means, and that the level of technological improvements be consistent with national economic security.

This has nothing to do, intrinsically, with trade war or such matters; it is purely an internal matter of sane, orderly precautions taken in the interest of national economic security. We are wise to be as generous as possible in our dealings with other nations, but we must also be committed to the kinds of agreements on “fair trade” policies which foster their national economic security, as the same kinds of such measures benefit our own.

Wages policies, and related matters, fall under the same heading as “investment tax-credit” policy.

The basic expression of national economic self-interest, lies in the cycle of development of the young individual from birth through adult maturity, an interval of up to twenty-five years. The quality of life, education, and so forth afforded those households during that interval, should be assessed as we should assess an investment tax-credit policy.

For example — this contrary to the Nazi doctrine concerning “lives not worthy to be lived,” which persists in circles in several nations, including the U.S.A., today — the care of the senior citizen is as essential to the general welfare as the care of the child and youth. The loss of the kind of social relations which used to be supplied by the extended-family relationships among relatively stable families and communities, has been savagely impaired over the course of the post-1945 decades, especially since 1971. The most important part of the development of the child and youth, is the sense of cognitive aspects of cultural connections over a span of one to two centuries preceding. This sense of “who I am now,” in respect to preceding and coming generations, is not only an essential source of a moral sense of social identity, but is essential to the development of the cognitive powers of the young individual.

There is no short- to medium-term price-mechanism in a so-called “free market” setting, which could possibly converge asymptotically upon a “fair price.” If it is said, today, that “the price is right,” we may be assured, usually, that that price is wrong from the standpoint of the general welfare of society.

The points of illustration just supplied, typify the way in which rational forms of intentions shape the way in which a money-economy should work. By building such intentions into the structures of monetary, financial, budgetary, regulatory, taxation policies, and so on, society defines a set of

parameters which will regulate the way in which the effects of pricing interact in the economy as a whole. These measures act as constraints, which have an effect akin to the role of universal physical principles in Riemannian views of a solar system.

Such constraints do not determine the actual course of the economic process by themselves. Physical-economic growth depends upon the insertion of cognitive innovations into this quasi-axiomatic framework. That situates and defines those changes in the economic process on which net physical-economic growth depends.

## Theories of Money

The Anglo-American system is now gripped by the terminal stage of the greatest monetary-financial collapse in history, the greatest systemic form of economic collapse in European history since the so-called “New Dark Age” of the Fourteenth Century. This present world crisis has several extremely relevant points of crucial similarities to that “New Dark Age.” Most crucial is the political-legal-moral issue: Who shall be paid, and who, on the contrary, shall be obliged to “eat their own paper,” in the presently inevitable, and long-overdue process of monetary-financial bankruptcy.

If the financial creditors are supported in their claims, then the planet as a whole will now be plunged into a genocidal, global physical-economic collapse far worse than that of Europe’s Fourteenth Century. In that case, the population of the planet could drop as much as 80% or more during the coming generation, while entire nations and cultures, which still exist today, will quickly disappear from the current scene, spawning thus additions to the list of humanity’s extinct, dead languages and nationalities.

There is another leading similarity to the period, from England’s Henry II through Richard III, under whose sway Venice orchestrated not only horrible Crusades and inquisitions, but kindred horrors, in its efforts to establish and consolidate Venice’s position as an imperial maritime form of financier-oligarchical power. The thrust of the utopian Anglo-American faction behind the current waves of wars and imperial globalization, is, as one historian has described it, today’s “distant mirror” of the process which led into the Fourteenth-Century “New Dark Age.”

From that and related lessons of history, we should have learned already, that when an overreaching financial power has brought on a bankruptcy such as the present global one, the relevant law which must be applied, is the principle of natural law known variously as the general welfare, or common good. No buccaneer’s booty for the carpet-baggers or other predatory forms of financier interest, could be tolerated. Financial claims have no intrinsic rights under such circumstances, except as society may recognize certain claims as morally privileged, solely because of their usefulness to the present and future general welfare.

Under any sane doctrine of law, a bankrupt must take

responsibility for at least as much as were the consequences of his or her own willful folly. Specifically, whoever had the power to dictate the policies which led to ruin, must assume the primary responsibility for the losses incurred by all. Thus, it was those financial and related oligarchical interests, which imposed on nations the ultimate bankruptcy which was inherent in the present system, which must accept and bear the relatively greatest portion of the burden in the crisis. If the contrary policy were followed under conditions of today's crisis, a genocidal outcome worse than the Fourteenth-Century "New Dark Age" would be inflicted upon all humanity. That latter consequence can not be permitted, and no argument can withstand that judgment of natural law.

The proper general course of action in all such cases, is to create a new monetary-financial system which works. Financial claims which perform a useful function for society under the old system, should be honored, in whole or part, under the new. Payments of pensions, modest savings of individuals and closely held enterprises, the relative modest capital of useful entrepreneurs, and so forth, are continued as the most convenient way of effecting the smoothest possible transition from the useless old form of monetary-financial system, to the new. The banking system is kept alive, even if bankrupt, because its continued existence as an institution of lending and deposit is in the vital interest of the nation and its community of nations. Bankrupt corporate entities continue to function, even in bankruptcy, if those continued functions are ones which are in the interest of the general welfare.

In effect, in any monetary-financial collapse on the scale and extent of the present global crisis, it will be necessary to create a new monetary system, eliminating the old. No alternative to that is tolerable. In many cases, existing currencies must be either replaced by new ones, or extensively reorganized. Since the changes must be sudden ones, measures of reform must be as close to what has been proven to have been successful previously, as possible. Therefore, the successful precedent of the 1945-1964 Bretton Woods post-war reconstruction model, should be applied to the task of defining a global version of a multi-polar system of kindred features among sovereign nation-states; that is simply the only visible choice of an equitable use of proven precedent available.

For various reasons, rather than attempt to replace the U.S. dollar with a new currency, it were better to protect the dollar with protectionist regulatory measures. The measures required must include the establishment of a U.S. National Bank. The following scenario typifies the approach required for this reform.

Since the Federal Reserve System is implicitly bankrupt, it is the constitutional obligation of the U.S. government to take over the Federal Reserve System itself, in receivership. This will place that System itself under the administration of the U.S. Treasury. The plan will be to phase out Federal Reserve notes, discreetly, over time, while creating a new instrument of Federal credit for reconstruction-based recovery of

the U.S. economy. This will require a system of gold-reserve-denominated U.S. Treasury dollars, whose leading function shall be to serve as an integral part of the mechanism of issuing medium- to long-term credits at borrowing-costs of between 1% and 2% annual simple interest. Lessons from Franklin Roosevelt's terms in office should be employed, whenever suitable and feasible.

The objective should be to bring the level of U.S. physical and related output up to above physical-economic break-even, and also in terms of Federal tax and other revenues over the medium-term period. The credit issued should be focussed on the combined objectives of short-term stabilization and medium- to long-term growth.

Once again, on this point, as on points argued here earlier, we must not lose sight of the reality, that economic processes function in terms of the underlying influence of long-ranging cycles. Remedies for a crisis of the present type, for example, can not be successful over a short term; therefore, there will be no solution available for this crisis, which does not rely upon the creation of state credit as a mechanism for bridging the gap between present bankruptcy and future break-even.

Through this mechanism, the following types of measures should be taken for reform of the U.S. private banking system. All banks which have functions of deposit and credit which are essential to continuation of orderly functioning of society, should continue to be used as instruments of delivery of payments due on pensions and scheduled release of savings, as well as new transactions, under provisions for use of Federal credit. The life of the ordinary citizen and community should continue with a minimum of disruption.

## C. International Measures

One of the unavoidable major features of any feasible recovery from the present systemic breakdown-crisis, will be a sharp reversal of the recent decades' trends toward "globalized" forms of "free trade." The U.S. economy provides adequate illustration of this general point.

Since the past thirty-odd years of ongoing, systemic destruction of the U.S. physical economy by radically monetarist measures, the U.S.A., like the centuries-long British empire, has maintained its power through increasing dependency on what are sometimes termed, euphemistically, "invisible earnings." The United States has, in effect, become a parasite, subsisting on such forms of tribute as its growing current accounts deficit on import-export transactions, and its forceful collection of vast monetary-financial influxes into highly speculative U.S. financial markets.

Through Anglo-American financier interest's control over the International Monetary Fund, the international monetary-financial system was rigged to such effect. The aggregation of financial power so organized, enabled the United States to subsist physically, and to posture as the world's great success which it was not, by increasing reliance on imports

FIGURE 1a

A Typical Collapse Function

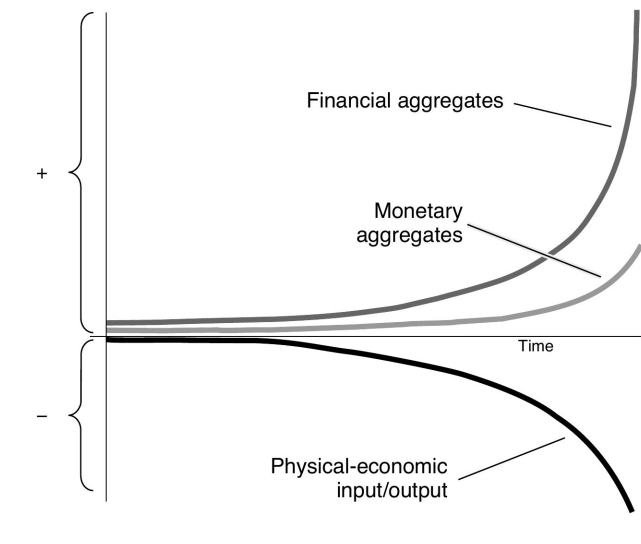
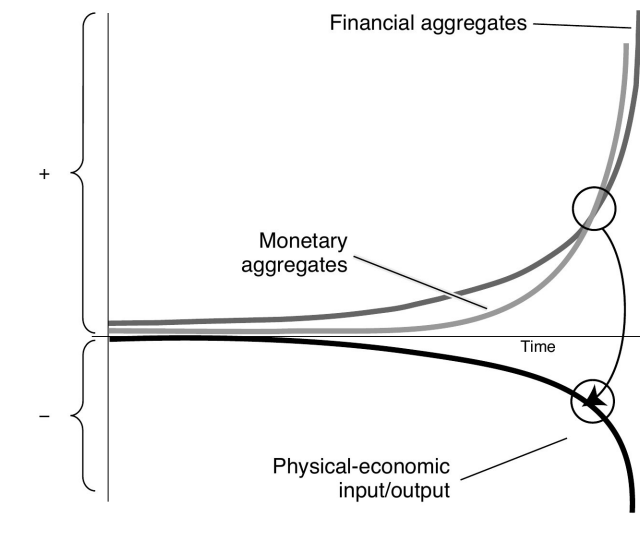


FIGURE 1b

The Collapse Reaches A Critical Point Of Instability



of relatively cheap goods from dependent nations of the world, thus filling the gap caused by the willful collapse within the agricultural and industrial sectors of the internal U.S. economy.

Try to find a Russian-produced good in a store in Moscow, today; or, with some relatively greater likelihood of success, a good actually produced in the U.S.A. being sold in a U.S. shopping mall! Thus, the evidence plainly available to any U.S. household visiting a U.S. shopping mall, has been, that the United States has been surviving as a nation through its role as an importer of last resort. The United States loots its national income as virtually tribute from abroad, and then spends some of that income to buy the cheap goods to replace what used to be produced by the U.S. labor-force. Thus, the United States became the market on which producing foreign nations depended for their financial income; so, the United States became the “lender of last resort” and is now on the verge of becoming the world’s “bankrupt of last resort.”

That is to emphasize, that, over a year ago, the U.S.A.’s position as an “importer of last resort” came near its end.<sup>66</sup> Nations which depended upon this artificial, temporary U.S. role as a market for cheap-labor and related goods, are now suffering an accelerating collapse in their ability to balance their domestic budgets through exports. This involves both long-term and recent cyclical trends, both of which bear on showing the urgency of reversing the recent decades trends in “free trade” and “globalization” policies.

The immediate cause for this recent trend, is shown by

66. Lyndon H. LaRouche, Jr., “The Demise of an Importer of Last Resort,” *EIR*, Jan. 19, 2001.

studying the U.S. and world economies from the standpoint of my 1995 “Triple Curve” imagery (Figure 1a). Official statistics of governments, monetary agencies, and private groups are highly unreliable, but, allowing for the wide margin of outright fraud and wild error which are demonstrated to be typical of such reporting over the recent two decades, it is clear, that during the recent two years, a critical cross-over point was reached in the behavior of data as reflected in Triple Curve accounting. The United States reached the point, at which the amount of monetary output needed to sustain the nominal trading value of marketed financial assets had increased to the point that the monetary input required exceeded the financial roll-over effected (Figure 1b).

In a real economy, physical-economic stability and growth depend upon the generation of an adequate margin of new physical capital inputs from the existing production and circulation of goods. Under conditions of imposed “free trade,” the margin of actually net capital formation becomes negative, as a result of driving prices down to levels at which true national-economic costs of production are not met. So-called “fiscal austerity” measures intended to bring financial accounts into balance through looting physical capital and human bodies alike, define the causes for the systemically cyclical, downward curve for real output in the Triple Curve imagery.

Therefore, to restore any of the relevant national economies, and the world economy as a whole, back toward physical-economic breakeven levels, will require a reversal of “free trade” measures generally, and also an utter obliteration of so-called “globalization” policies. If those changes are not



Friedrich List was the great German economist of the American System of political-economy; and the Friedrich List Society of early 1930s Germany, headed by Dr. Wilhelm Lautenbach, developed the policy by which, had it been adopted, Hitler's takeover would have been stopped.

made, no recovery from the present systemic collapse were possible.

This means the reinstallation of the kinds of protectionist policies characteristic of the American System of political-economy. The included objects, are to re-nationalize production, while building in a margin of net capital-formation into the production by national economies as entireties. The possibility of a systemic recovery, depends on generating that margin of capital-formation through production of, chiefly, physical goods. This margin of capital formation provides, in turn, the included basis for state creation of the fiat credit needed to finance the economic recovery.

In reference, once again, the report of Dr. Wilhelm Lautenbach to a 1931 secret meeting of the Friedrich List Society, as I have in some earlier locations. The use of methods of fiscal austerity to manage an economy in economic depression, is sheer lunacy. Fiscal austerity has the effect of idling productive resources, such as large portions of the labor-force and productive capacity. In other words, "fiscal austerity" under economically depressed conditions, destroys the very productive potentials by means of which the depression could be reversed! In any economic depression, the function of a sane and moral government is to provide the circumstances and stimulus under which idled productive potential is put to useful work. The mechanism for doing that is the directed use of state credit.

Had the Lautenbach report been adopted as Germany's policy in 1931, Adolf Hitler would have never come to power in Germany.

Applying the lessons of the Franklin Roosevelt recovery, and also the related lessons of the essential role of protectionism in permitting successful relations among the Americas, Europe, and Japan, during the 1945-1964 interval, provide a proof-of-principle argument to be used for the basis of defining an equitable, multi-polar system of international monetary and related cooperation now.

This will require the architecture of a gold-reserve system, comparable to that of the 1950s. It is important, of course, that there be no confusion between the useful notion of a gold-reserve standard, and the inevitable pernicious effects of a gold standard like that used by London prior to changes introduced by Franklin Roosevelt. This could be premised on the U.S. dollar, but could also be established as a fresh way of assessing the lesson from such examples as the IMF Special Drawing Rights conception of the 1970s. If Special Drawing Rights, in a drastically reorganized international monetary system, were denominated as a gold-reserve unit, that system could work successfully, on the condition that certain other measures were included as an integral part of the agreements.

Consider two classes of such agreements: a general agreement on trade and credit, and the need for a matching technology-driver for the world economy as a whole. The paradigm for the first of these needed agreements, could be usefully identified as the intention to establish a Hamiltonian form of international cooperation among sovereign nation-states. The second, is represented by special projects. The two typical special projects to be used for illustration here, are what my associates and I have identified as a "Eurasian Land-Bridge" cooperation, and international cooperation in nation-based science-driver "crash programs," including space programs.

There are two kinds of physical sports. One is based on competition among players, or teams of players. The other are sports in which the individual, or a team, challenges itself, and challenges others to challenge themselves similarly. It is the second model which should define the relationship among sovereign nation-states, each cooperating in the quest to discover better ways by means of which each can better itself. The point is to bring humanity, at last, out of the jungle, and into a civilized form of cooperation, rather than football-field, or Nintendo-game styles of competition, in the cause of improving national life.

From that standpoint, the present tasks of the community of sovereign nations, can be summed up as the complementarity of the efforts to improve mankind's mastery of the challenges of both inner and outer space. Take the case of Africa as an example.

### Help Africa!

The essence of the greatest political and social issue, is that if oligarchs can succeed in bringing about acceptance of the notion that one section of humanity as a whole can be treated as hunted and herded animals are, no part of part of humanity can claim, under law, to be free from the same treatment a hunter or herder affords to the creatures upon which he preys. Thus, the unfinished issue of Africa becomes the pivotal moral and economic expression of that question, on whose solution the welfare of all humanity depends.

Therefore, whereas the cooperation of western Europe and Russia with China, India, and others, in bringing Eurasia up to a required level, is the most crucial mission now chal-



lenging humanity as a whole, success in Eurasia were not likely to be truly durable, unless modern European civilization's brutish injustice to Africa, including slaves extracted from Africa for exploitation in the Americas, were also remedied in a decisive way.

The combination of the obvious, comparable development objectives for Eurasia and the Americas, sets a standard long-term objective for the coming generations of humanity as a whole. Winning that objective requires that the case of Africa be addressed in an exemplary fashion. Reciprocally, what we demonstrate our principle to be, in our approach to the matters of Africa, will be both a test of and a model for our thinking about the present and future condition of humanity as a whole.

The international community's special responsibility toward the African continent, is to provide the margins of assistance needed to ensure that the large-scale basic economic infrastructural requirements of the continent are put into place through cooperation with the responsible governments of Africa itself. This assistance should recognize the long-term potentials of the continent in respect of the present and future need for Africa's sovereign development of that concentration of mineral and other Biosphere resources it contains. Look at Africa as an expression of the Noösphere, and prepare to develop its Biosphere accordingly.

The relevant projects on which the international community should be focussed for this purpose, are, first, the categories of large-scale development of transportation, water management and sanitation, energy production and distribution, and urban systems. Secondly, the development of public-health and educational systems as systems. These efforts include long-range intentions for the development of the Sahara as a region of economic progress and habitation, this done chiefly through the deployment of large-scale basic economic infrastructural systems, as an extension of the infrastructural development of the African continent as a whole.

Thinking about Africa in such directions became significant after the victory of the U.S.A. over the Confederacy in the 1861-1865 Civil War. The conception of rail transport from Capetown to Cairo, although a British imperial conceit, nonetheless reflected the existence of a natural axis of development, up the Nile, through the Great Lakes region, and down to the tip of Africa. The French project, prior to Fashoda (1898), for a sub-Sahara route of rail transport, from Dakar to Djibouti, is another example. There are numerous other specific, large-scale examples, many of which I have addressed, in published collaboration with others, over the period since 1975.

My emphasis has been, and remains, that rather than thinking of rail connections as such, we must recognize that, as in the best features of the U.S.A.'s development of its transcontinental railway system, a main-trunk land-transport line must define transport as merely one essential component of a development corridor, in which water-management, en-

ergy-generation and distribution, and nodal urban systems are integral requirements. What the Americas and Eurasia should undertake as the area of their leading, joint responsibility, is to provide Africa the assistance, by aid of which relatively impoverished Africa can have rapidly in place, the network of development corridors on which the effective development of the economies of Africa depends absolutely.

By supplementing the mobilization of such development corridors with general systems of public health and education, a "full set" kernel of essential infrastructure is made available.

Apart from the need for large-scale assistance in creating such a network of development corridors, the point to be stressed, is that this development must be an assisted development by Africans themselves, rather than as "cargo" dumped upon their land-areas. The creation of teams—akin to the teams which Egypt was developing, prior to a shutdown, by foreign powers, of an effort of this type within Egypt and Sudan—is a good example of the approach which would succeed. What must be envisaged, is a phased technology-transfer, in the course of which an increasing percentile of the development operations, are taken over and run by recruits from the population in the vicinity of the projects' development.

The point of that emphasis, is to foster the development of an appropriate labor-force, which will serve as a growing cadre-force for the broad-based economic development of the area, its economy, and population as a whole.

For example, Africa, under conditions of development, has all the natural potential for an agricultural revolution oriented to the growing markets in Asia. The use of infrastructure programs to address the critical bottlenecks for agricultural development, if combined with rational forms of urban development, provides the potential for the targetted objective of broad-based development of "full set" African national economies. In such economies, the mineral potential of Africa, rather than being exported as a mere colony's exports, must be a processed resource from which the semi-finished and finished products of the Africa economy are produced, for both domestic and foreign use.

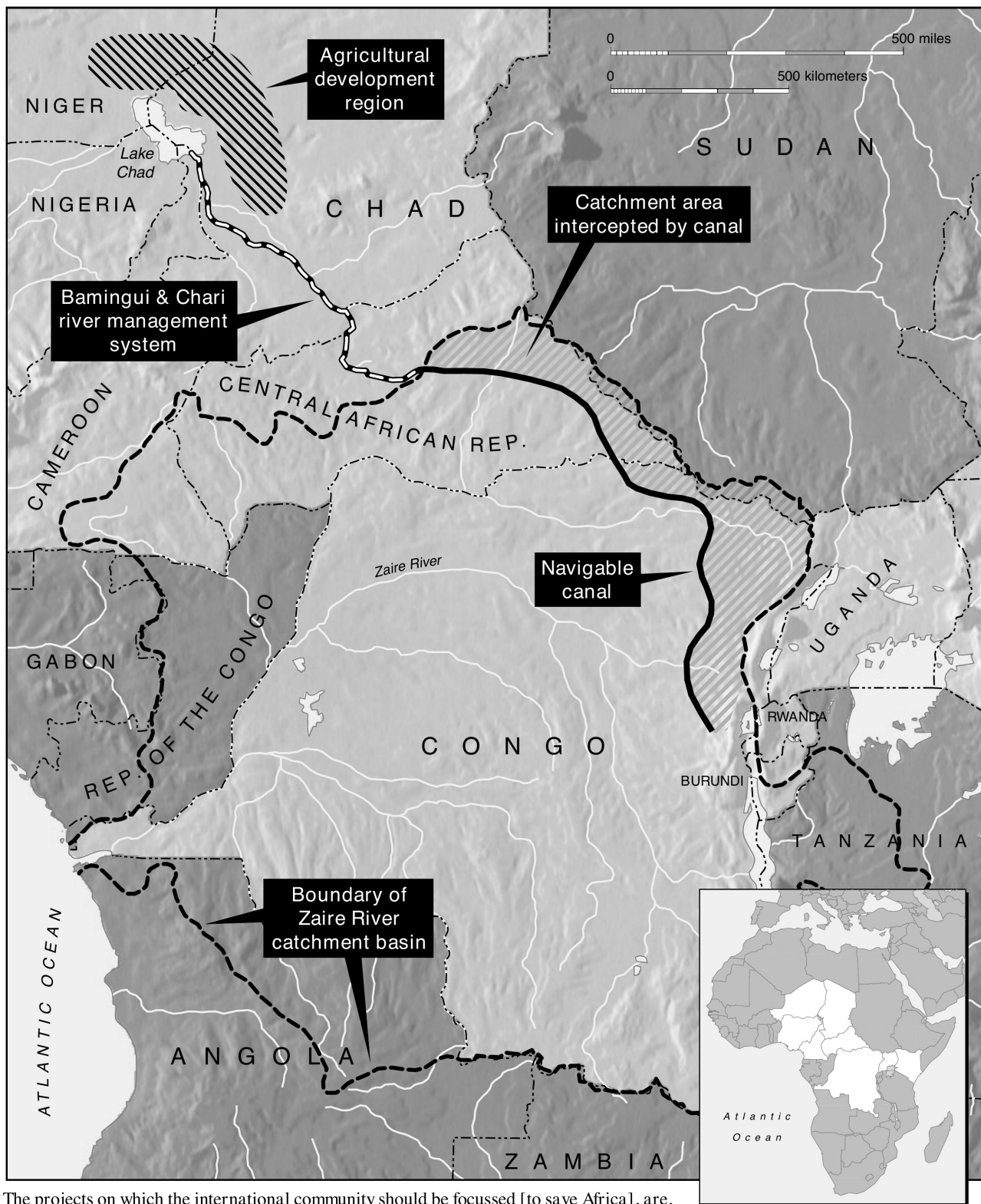
Such international cooperation in support of the internal self-development of Africa, should be considered a complement to the exploration of Solar space. This means, science and technology pioneering, with the same quality of developed means, in outer and inner space.

### The Land-Bridge as a Syndrome

I have emphasized the following point repeatedly in earlier locations, so it will be sufficient to summarize the relevant argument here; but it must be summarized in this immediate context.

At the present time, western continental Europe (to say nothing of the United Kingdom) is implicitly bankrupt. Under presently prevailing conditions, hopelessly so. The only available hope for overcoming that condition, is the opening of

## The Transaqua Project



“The projects on which the international community should be focussed [to save Africa], are, first, the categories of large-scale development of transportation, water management and sanitation, energy production and distribution. . . .” Here, a broadscale infrastructure development of Central Africa, proposed in 1991, to move run-off water north into the Sahel’s Lake Chad region.

large-scale markets for European machine-tool-grade and related technology in Russia in particular, and Asia in general. Only by bringing the level of the machine-tool-grade and kindred exports from Germany and other European nations, up above the threshold of a national physical-economic break-even-level, can western Europe survive in the form it has recently existed, until now.

Four conditions are required for this reversal of a presently onrushing catastrophe.

First, a new international monetary system, as I have specified, must be summarily adopted and set into motion.

Second, Europe must revert to a system of perfectly sovereign nation-states, each with the authority to create state credit. This does not require reversal of the customs-union aspects of recent trends of unification of the economies, provided the sovereignty of the nation over its currency, banking, and credit, are fully reestablished.

Third, western Europe must become a partner in the economic and mutual security aspects of a growing tendency toward large-scale cooperation among Russia, China, India, and other states of Asia. Hopefully, the U.S.A. will become a contributing participant in such arrangements.

Fourth, there must be mechanisms established for long-ranging credit, at simple-interest rates not in excess of 1-2% per year, respecting long-term development and trade-investment agreements among the sovereign national member-states of this area.

The intent of such reforms must be to establish a long-term process of development, based on outflows of machine-tool-grade and related technology from areas of high potential, into regions which suffer a current deficit in this capability. The leading emphasis must be on basic economic infrastructure, especially development-corridor development, and accelerating the rate of development of agricultural and manufacturing productivity and output under the stimulus provided as a by-product of large-scale infrastructural development.

Adopt similar approaches to reestablishing healthy forms of sovereign nation-state economies throughout the Americas. Agreements among states of the Americas, which are modelled on the legacy of the kind of American System of political-economy implicitly defined by Alexander Hamilton's famous Reports to the U.S. Congress, would be the optimal basis for the relevant agreements.

## **D. In Summary: Avoiding the Tragedy**

The United States, in particular, is teetering at the brink of a Classically tragic end to its existence. Contrary to the Romantic mythology of the English and German literature courses, a Classical tragedy is never caused by the wrong imposed upon a people by its leader. It is caused by the leader's failure to override the tragic folly of the people themselves.

Recently, for example, the Democratic Party was led to an electoral catastrophe by its selection of Vice-President Al Gore, just as the United States today hovers at the brink under President George Bush. As in great Classical dramas, the threat of doom lies not in either of the two candidates, but in the selection of such candidates by the political parties and public opinion which caused inadequate leadership to be selected. The fault, in all cases of true tragedy, lies in the people themselves, in the popular culture, in the generally accepted assumptions of the majority of those people.

In U.S. politics today, a tragic quality of prevalent personal immorality is frequently expressed by the slogan: "Go along, to get along." Or, by statements to the same effect, such as the silly (and, technically absurd): "You can't put the toothpaste back in the tube."

The problem lies with what the Romans called *vox populi*, or, "popular opinion," as the same thing is called today. The billionaire-owned mass entertainment and news media, dictate the opinions which the people learn, and the people are controlled by what they then insist is their own opinion. Such is democracy in the United States today: people democratically saying what they are afraid to be overheard not saying.

In just that way, the majority of the U.S. population was brainwashed into abandoning national economic policies of the Franklin Roosevelt legacy, which had worked, in favor of the past thirty-odd years' opinions which have led this nation into the present global economic disaster. Nearly every once-relatively-successful culture in known history, died in a similar way. There have been, naturally, a few happy exceptions.

In Classical studies of this problem, as the problem is presented in the greatest Classical stage-tragedies of European culture since ancient Greece, it is recognized that there is but one type of remedy for the tragic follies of customary popular opinion. The remedy for tragedy is known in those quarters as "the sublime." By "sublime," one means to rise above the mediocrity of popular opinion, and to see the relationship of the present spot to what should be recognized on the horizon. Escape from tragedy begins, when a people ceases to say, "We have been betrayed," and to ask one another, instead, "How have we failed?"

To induce you to act to save yourselves, I must induce you to recognize how and why your own habituated present beliefs, and conditioned, knee-jerk reactions, misled you into this sucking swamp which grips our nation today. To that purpose, I have been obliged to address a number of points about history and culture, but, above all, I have concentrated on pointing out to you how a real economy actually works, and which presently generally accepted beliefs about economy would cause us to destroy our own civilization.

I have spoken to you as all important leaders of civilization have spoken to their people in times of crisis comparable to this one.

May you be blessed with the wisdom to have heard my counsel.