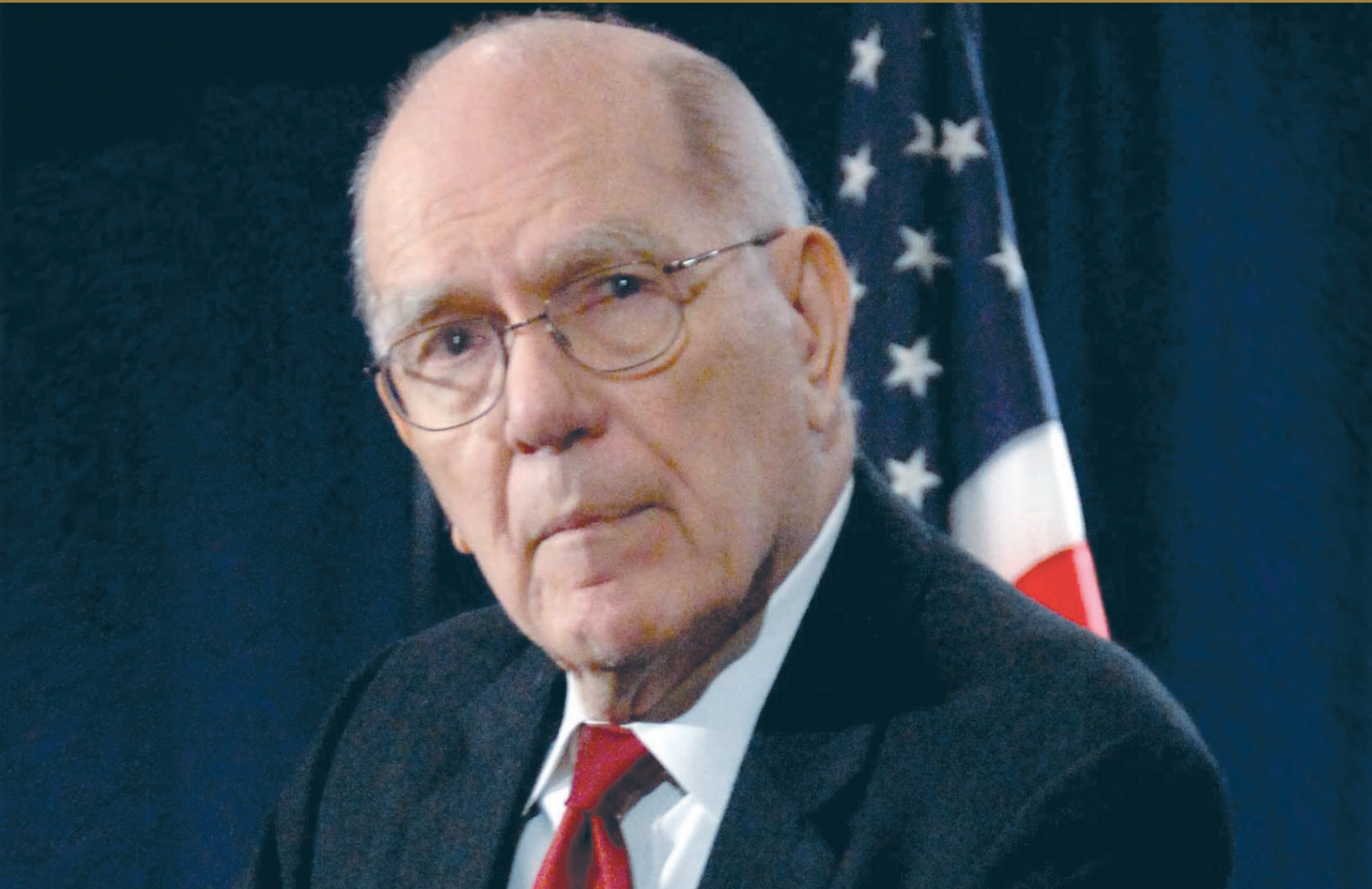


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Join LaRouche's Plan
To Rescue the Economy



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Join LaRouche's Plan To Rescue the Economy

EDITORIAL

Lyndon LaRouche's Sweet Revenge

by Barbara Boyd

Based on Ms. Boyd's notes for her presentation on the LaRouche PAC Fireside Chat, February 13, 2020. She was joined on the program by William Binney, a former technical director of the National Security Agency. The full program, including a live question and answer period, is available [here](#). Subheads have been added.

When I wrote the email for tonight's show, I said I would focus on the parallels between Roger Stone's case and the case of Lyndon LaRouche, as a way of getting at the delusions presently infecting the minds of many among Donald Trump's supporters: that the end of the Ukrainegate impeachment was somehow a victory against those running the coup, and that they could now afford to be complacent, restricting their activities to showing up at rallies and turning out to vote.

That daydream has been rudely interrupted by the latest staged coup plot, the resignation of four prosecutors, all tainted by the illegal Robert Mueller investigation. They had proposed a sentence of 7 to 9 years for Roger Stone, a sentence typically given to violent criminals of the worst sort. Attorney General William Barr intervened to reverse this proposed atrocity, immediately prompting crazed calls from Senator Chuck Schumer and others for Barr's resignation for protecting a friend of Trump. The President pressed on, going after the clearly corrupt Judge in Stone's case, Amy

Berman Jackson, amidst further hysteria from the Democrats and equally pained cries from wimpish Republican Senators and presidential allies, once again, to tone it down: Just pardon the guy already, forget about the injustice that is staring you in the face, they counsel.

In reality, Roger Stone is a piece on the chessboard—now being played in a desperate effort to pre-



DOJ

Attorney General William Barr.

vent Barr from prosecuting all of those involved in the coup, something that he appears to be determined to do. He is opening investigations of Ukrainegate itself now, in parallel with the Russiagate investigation being conducted by John Durham.

To start thinking about this clearly, think about what kind of "victory" was had in the impeachment

proceedings. President Trump started out, determined to bring those in Ukraine who had sought to take him out in 2016, to justice. The President said he would not consider further military aid until this was investigated, while also detailing that country's notorious corruption. That, like many of the President's instincts, was absolutely correct and would be fatal to his enemies, if pursued. That investigation, of Ukraine's cyber-warfare, propaganda operations, and actions against Paul Manafort in 2016, would have led directly to the people who conducted the 2014 coup in Ukraine and installed a neo-Nazi government as a means to continually support subversion against Russia on its southern border.

In turn, the Ukraine coup involved all the main players in the Russiagate hoax against the President—CrowdStrike, Christopher Steele, the Clinton and Kerry State Department, Steele's British intelligence circles, the same FBI and DOJ circles active against the Trump candidacy and Presidency, and the whole-of-nation information warfare operation that has dominated our mass media since Trump became President. It included Joe Biden, the Ukrainegate whistleblower, and the case officer for Ukrainian operations against Trump's 2016



Alexandra Chalupa

courtesy photo



Joseph Biden

Gage Skidmore

campaign, Alexandra Chalupa.

Completely derailing the investigation was what the desperate Ukrainegate impeachment operation was all about. That the President's supporters did not

see this and fight the impeachment on that level—the highest level—ended up with the President forced into pragmatically compromising with corrupt Senators on both sides of the aisle who were up-to-their-ears in the 2014 Ukraine coup. He gave the aid. He declared himself better than Obama in this dangerous adventure. The people most involved in exposing this



Roger Stone

Schiller Institute

operation, Rudy Giuliani and John Solomon, were viciously harassed and sidelined, casualties temporarily, at least, in this war. Yes, the President's poll numbers soared as people protested and were outraged by what was taking place. But ask yourself, has the nation advanced from any of this? Has the presidency been secured?

Has the presidency been secured?

The Roger Stone Case

It is characteristic of both Roger Stone and Lyndon LaRouche that they refused to compromise with the truth or to choose the pragmatic pathway. The physical appeal of pragmatism, ensuring short-term survival, would not ensure long term survival for



John F. Solomon

Gage Skidmore



Rudy Giuliani

Gage Skidmore

anything either one of them believed in, because it was not truthful. The difference in the two cases was the target.

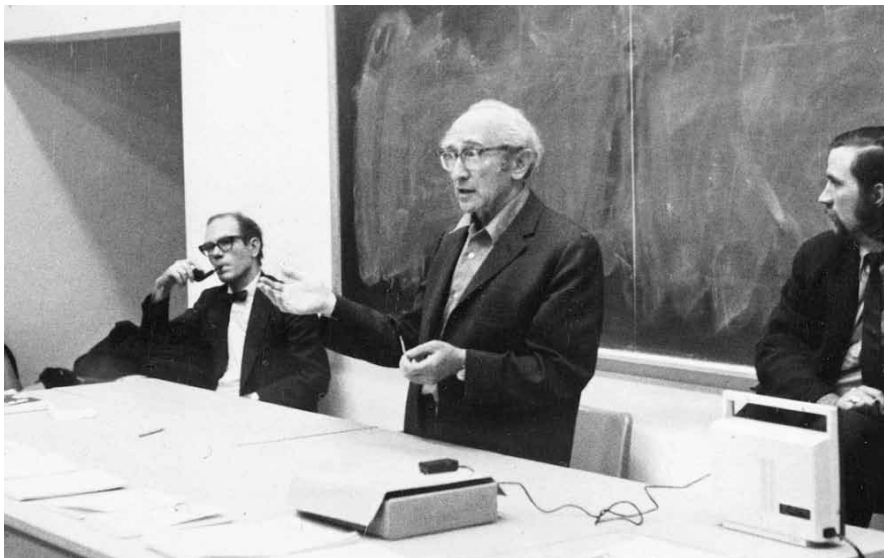
In Stone's case, the President was, and always has been, the target. Stone was brutally arrested in the infamous SWAT team raid on his home, filmed by CNN, not only as a means to coerce Stone to lie about President Trump in the Mueller investigation—a typical tactic—but also to see how President Trump would react to the brutal takedown of an ally. It was part of the series of baits and traps laid by the Mueller team in the hopes of triggering an overstep by the President that could give credence to obstruction of justice charges.

We now know, as the result of the Inspector General's report and other evidence, that the Mueller team knew at the outset of its investigation that there was no Trump/Russia collusion, the very predicate of the entire two-year national nightmare. As we said at the time, members of the Mueller team were legal hitman, legal assassins, whose sole goal was to take out the President of the United States.

Faced with an indictment for lying to Congress and allegedly threatening a friend about testifying to Congress, Stone, arrested late in the Mueller probe, refused to lie about the President and then fought back. He challenged the very basis of the entire Russiagate investigation and Mueller probe: that the Russian GRU hacked the Democratic National Committee and John Podesta, turning the proceeds of that hack over to WikiLeaks for publication. He brought in Bill Binney to demonstrate this, and the very corrupt court which tried him, simply ignored that evidence, deeming it irrelevant. Stone argued to the jury that he was being indicted for lying about a Russian plot that did not exist and obstructing a probe of the intelligence community's story of a plot based on a fantasy—even after the Judge had denied him the most valuable evidence for presenting his defense, Bill Binney's evidence.

The Lyndon LaRouche Case

In the LaRouche case, LaRouche was the target, prosecuted because his ideas in and of themselves constituted a danger to an elite that had lost the ability to think about economics, science, or much else. As LaRouche himself said, he was declared a dangerous subversive the moment he defeated Abba Lerner, the establishment's economic spokesman, in a [debate](#) at Queens College in December of 1971, right after the British convinced Richard Nixon to dismantle the stable Bretton Woods monetary system and unleash the post-industrial speculative economics and the “information” society, which have devastated this nation ever since. He called Lerner's embrace of those poli-



EIRNS/Alan Yue

Economist Abba Lerner (speaking), in a debate with Lyndon LaRouche, was forced to admit that had Hjalmar Schacht's economic austerity program been implemented in Germany, Hitler would not have been necessary. Queens College, New York City, December 2, 1971.

cies fascism, and largely predicted, even then, where the Democratic Party's embrace of environmentalism and identity politics would lead.

LaRouche's FBI files reflected this almost immediately. In 1973, Lyndon LaRouche's National Caucus of Labor Committees was declared to be the leading security threat to the United States. LaRouche was told directly by the highest levels of British finance that his plans for international development would work but they would never allow them to happen.

We have detailed the key aspects of the LaRouche prosecution that are being precisely replicated in the

ongoing coup against Trump in our [pamphlet](#), *Robert Mueller Is an Amoral Assassin Who Will Do His Job If You Let Him*. It is the very same apparatus: an intelligence surveillance and profiling operation, a full-scale defamatory media campaign designed to create pure and unadulterated hatred, and very dirty cops planning and designing setups and baits by which to create crimes.

And the intensity of the operation—deployed against this one man, Lyndon LaRouche, a private citizen—was different only in scale to that now leveled at the President of the United States. The hatred generated had one objective in each case, preventing the unleashing of those ideas, which, if implemented, effectively threaten the New World Order, put into place by the British government and George H.W. Bush. The only difference is the dramatic expansion of the privatized aspects of this apparatus, which LaRouche also predicted would occur.

Now, I am telling you this not because I want to paralyze you with fear of something that is all powerful. It is not. In fact, right now it is drastically weakened. The apparatus that Lyndon LaRouche fought is now being fought on the plane of the U.S. Presidency itself, with all of the powers of declassification, appointment, and investigation, to finally defeat this enemy. But we can only do so if it is understood what this enemy is and what its vulnerabilities are, and if we resist, at all costs, any ideas that we can be pragmatic, or lazy in our thinking or mode of operation, substituting slogans for an actual strategy. They have made it plain, either they get taken out by legal means, or you get taken out by any and all means, including those which are lawless.



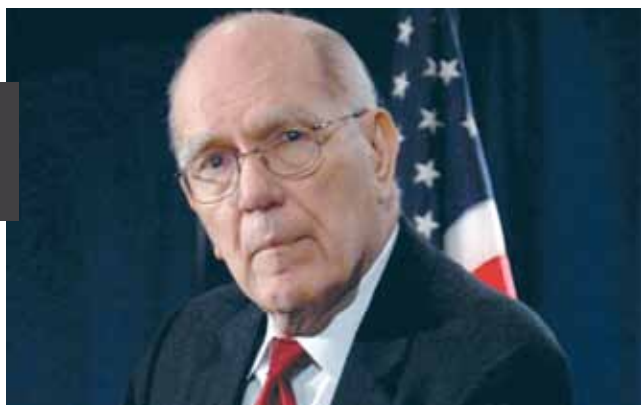
Robert Mueller. He failed to destroy Lyndon LaRouche and failed to destroy Donald Trump.

LaRouchePAC's Committees of Correspondence exist because the task is to elevate ourselves to being generals, rather than privates, on this field of battle. A President who has resisted, rather than caving, has opened up a vista wherein the enemy has exposed itself, over and over again. And, the actual policy flanks by which this enemy can be defeated are actually presenting themselves, namely, a crash program to get to the Moon and Mars, harnessing fusion power in the process, which this President has endorsed.

At the same time, Bill Binney and friends can tell us exactly how to dismantle the national security state. Call this, "Lyndon LaRouche's sweet revenge," if we succeed in getting the population fully mobilized around this program of both defeating the insurrection against the Presidency and starting the reconstruction process implied by the Moon-Mars mission. But doing this requires the intellectual ruthlessness of Lyndon LaRouche, a ruthlessness which constantly condemned the pragmatic and the mundane. It is that latter state of mind, rather than any power of the enemy, which leads to defeat.

Cover This Week

On the first anniversary of Lyndon LaRouche's passing, February 12th, we resolve to win the United States to his policies in this pre-election period.



EIRNS/Stuart Lewis

JOIN LAROCHE'S PLAN TO RESCUE THE ECONOMY

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I. Great Leadership to Change History

DECEMBER 1981

The Economic Need for Increasing the Human Population

by Lyndon H. LaRouche, Jr.

AUTHOR'S FOREWORD

Man Is Not Ecologically an Animal Population

Little more than a generation after the opening up of the Nazi concentration-camps, OECD official Dr. Alexander King and others established an organization, the Club of Rome, whose intent has been to cause global genocide on a scale a hundred times greater than that perpetrated by the Hitler regime. Today after more than a decade of such malthusian propaganda, institutions of the United Nations Organization, the International Monetary Fund, the World Bank, and Bank for International Settlements, and sections of leading nations' governments and major political parties are openly engaging in genocidal practices and advocacies defined as capital offenses during the post-war Nuremberg proceedings.

In general, advocates of this genocide have shown their degenerated consciences increasingly impervious to charges of criminal intent. They respond to such charges with what they present as "scientific arguments," or with related arguments to the effect that the targeted populations of

the "Third World" nations are "doomed to die anyway."

Worse, the majority of the citizenry of leading nations refuses to treat such advocacy as an abomination. This is obviously a pervasive problem among the OECD nations. The Soviet chairman of the Austria-based International Institute for Applied Systems Analysis (IIASA), Dzhermen Gvishiani and the "global systems analysis" circles in Moscow are as cold-bloodedly committed to mass-murder in the "Third World" as

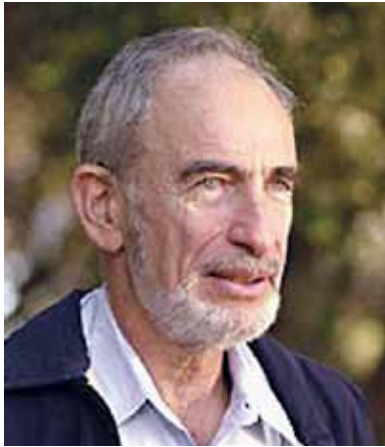


"Without an increased population, it will become increasingly difficult to maintain the increasingly diversified division of labor which technological progress implies."

Gvishiani's personal friend and collaborator Aurelio Peccei.

This pervasion of genocidal practices and advocacies by influential circles and individuals, combined with the monstrous toleration of such advocacies by the general populations, is to be viewed as a reflection of the fact that the moral condition of leading institutions and populations is today qualitatively worse than during

Editor's Note: This report, being published here for the first time, was requested in December 1981 for the Economics Studies of a Bishops' Conference in Rome.



CC/chego-chego

“The mere fact that the human species might reach 100 million individuals, to say nothing of more than 4 billion, is already proof that the Malthusian ecologists’ calculations are totally incompetent.” Shown are Paul Ehrlich and Prince Charles, two modern promoters of Malthusianism.

the 1930s and 1940s. The issue before us is not merely that of preventing genocide; the toleration of policies such as *Global 2000* today is to be seen as conclusively symptomatic of a civilization which must be rescued from a loss of the moral fitness to survive.

There has been, of course, important resistance against the genocidal proposals of the malthusian world-federalists. However, so far, this opposition has been predominantly impotent. Two facets of this morally impotent behavior stand out in the author’s view. Firstly, there has been an unwillingness to publicly denounce leading perpetrators, including Aurelio Peccei, as purely and simply Nuremberg Code violators. By treating the issue of genocide as a “gentlemanly difference of opinion,” we contribute to the passivity of public opinion on this issue in conditioning populations, step by step into toleration or even support of such mass-murder policies.

Secondly, the opponents of genocide have usually put themselves into the position of debating what the malthusians represent as conclusions logically deduced by scientific procedures. Anti-malthusian scientists refuse generally to expose other members of their fraternity as evil hoaxsters, even though most scientists are qualified to prove that every allegedly scientific argument of the malthusian “environmentalists” is an outright fraud. So, the news media is advantaged to misrepresent the issue as a conflict between “traditionalist moral prejudices” and “the objective, if cruel, conclusions produced by rigorous scientific inquiry.”

The following report attacks the malthusians on

their most vulnerable point respecting “scientific arguments.” The simplest and most pervasive empirical evidence demonstrates that it is worse than absurd to apply to human populations the statistical procedures developed by Ronald A. Fisher and others for studies of plant and animal populations.

If the human species were to be considered as another animal population for purposes of statistical ecological population-studies, we consider only those abstracted features of human behavior which rank man slightly above a gifted baboon. It would be generous, on the basis of such false assumptions, to estimate that the human species might have achieved at any time up to the present a

total population in the order of several millions living individuals.

Therefore, if one assumed at a corresponding point in a socratic dialogue that the existence of a population in the order of four and a half billions represents an ecological problem, the mere admission of such a problem by the malthusians is a virtual admission of the total incompetence of the assumptions of fact and method upon which the entirety of the malthusian mode of argument depends. The mere fact that the human species might at any point reach a hundred millions individuals, to say nothing of more than four billions, *is already proof that the malthusian ecologists’ calculations are totally incompetent by at least three orders of magnitude.* Any corporation whose engineer made such an error would assign that engineer promptly to occupations for which he were professionally qualified, such as picking up refuse.

As this report summarizes the method for determining such a judgment, the maintenance of the *potential relative population-density* of a human population requires forms of technological progress which, in turn, require an increase of the total productive labor-force of society, and hence the total population.

The required range of human population, to effect ecological stability, over the period into decades of the coming century, is approximately ten billions individuals. Without an increased population of that order of magnitude, it will become increasingly difficult to maintain the increasingly diversified division of labor which technological progress implies. Without techno-

logical progress in that order of advancement, the world will suffer a genocidal sort of ecological crisis more or less of the magnitude the most radical among the malthusian ecologists project.

—Lyndon H. LaRouche, Jr.
Wiesbaden-New York City
December 24, 1981

1.

Rudiments of ‘Human Ecology’

The obvious measurement to be applied to the study of the reproduction of any population is *potential relative population-density*. This measures the density of population which can be achieved by a population solely through its own activities of producing the material preconditions for existence of the entire population.

Excepting man, the characteristic potential relative population-density is *fixed in range* by heredity. This potential can be improved only by action external to the species or variety itself, as such external action is illustrated by improvements in cultivation of crops and livestock. Only man can willfully improve his society’s potential relative potential population-density.

The study of human ecology is a study of the necessary conditions and means for effecting such willful changes in the productive and related behavior of our species.

For this inquiry, we employ Gottfried Leibniz’s contributions to both economic science and physical science: *work*, *power* and *technology*. Although Leibniz’s discoveries date from his founding of modern economic science, with the publication of his *Society and Economy* during the 1670s, these notions obviously apply as appropriately to the earliest known phases of human social practice, as well as to recent centuries. It is improvements in technology which are the immediate correlative of improvements in a society’s potential relative population-density.

The question immediately posed is whether improvements in technology are necessary for human existence, or whether such improvements, however beneficial, are merely optional. The key to human ecology is the proof that a succession of such improvements is necessary for perpetuation of human existence.

It is a fact that there are no absolute limits to the natural resources available to mankind; it is sufficient to note that fact without proof at this point in our report. There are, however, *relative* limits to exploitable forms

of natural resources, at least relative to any fixed order of technology. The nature of such *relative* limitations is so obvious empirically that we need merely describe the proof. This observation is the beginning of a scientific form of human ecology.

Potential relative population-density is, as we have indicated, an examination of a society’s ability to produce the material preconditions of existence of a society of the same or expanded number of at least the current quality of individuals. The crux of this process is the activity of a section of the whole population we may describe in descriptive terms as the society’s goods-



Gottfried Wilhelm Leibniz
(1646-1716)

producing labor-force. It is the activity of that labor-force which produces all of the changes in the material preconditions of life and production upon which the continued or expanded existence of the whole population depends.

The useful activities of this goods-producing labor-force are divided principally into the transformation of natural resources into raw materials, and the processing of those raw materials into usable forms of goods (plus, of course, the physical distribution of goods within the network of production and consumption).

It requires no extensive discussion, at this stage of our report, to note that the total goods-producing labor-force is a determined percentile of the entire popula-



White House/Eric Draper

The extent to which a natural resource is exploitable, is relative to a fixed order of technology. Shown is an oil rig in the Gulf of Mexico near Cameron, Louisiana.

tion. It is also obvious, that there is an implicit number of individuals of the total population maintained per average member of the goods-producing labor-force. We shall soon consider how variations in these ratios are determined; for the immediate moment, the observation made is adequate.

It is clear, therefore, that if the percentile of total labor-force required for any part of the production of a total required goods-output were increased (without thereby increasing the total goods-output), the number of persons sustained in the total population would be reduced relative to the total labor-force.

There is no disagreement between us and the malthusians, that the usable number of types of natural resources is limited for any fixed quality of prevailing technology of goods-production. Nor is there any disagreement between us respecting the bare fact that as exploitation of those natural resources continues, society incurs the growing social cost of using poorer grades of such resources, and of going further and digging deeper to secure resources of equal or poorer quality. This is the general case, at least, as long as the level of technology practiced is approximately fixed.

So, if the percentile of the labor-force required for producing the same, required quantity and quality of raw materials is increased in such a fashion, the remaining percentile of the total labor-force is reduced, and the possible standard of living of the total population is re-

duced in consequence of such chain-reaction effects.

In other words, *the potential relative population-density is reduced.*

Technological progress overcomes this problem in two ways. Insofar as technological progress merely increases the productivity of labor, this rise in productivity may be adequate, or better than adequate to offset the rising costs of raw materials. More fundamental forms of advancement in technology redefine advantageously the spectrum of what constitutes natural resources.

Technological progress is indispensable even to maintain a constant potential relative population density.

This technological progress is not superimposed on unchanging "biological individuals." Technological progress means an increase in the power of the average individual over nature. Such a more powerful individual is a more developed individual. If we measure the social cost of producing an individual of a certain quality in terms of a "market-basket" of average consumption of goods and services, the individual of greater productive power costs more to produce. However, in successful development, the social costs (percentile of the total labor-force's activity) required to produce the more abundant market-basket required to produce the more developed individual shrinks *relative to* the costs of producing a poorer individual in a less technologically advanced form of that society. The amount of average goods and services rises, but the total social cost of filling that market-basket declines. In other words, the percentile of the potential activity of the total population required to produce its required human consumption decreases at the same time that the content of the average market-basket improves in quantity and quality.

Family Composition

To develop from the average new-born person an adult who is both morally qualified as a citizen, and qualified to assimilate modern productive and related technology, requires a program of combined classical and scientific general education spanning the ages of from approximately six to eighteen years of age, prior to any specialist education. Even with the best content of public educational programs imaginable at present, this span of basic education could not be significantly shortened.

Specialist education beyond eighteen years of age requires approximately two additional years for technicians, and even with optimal improvements in university curricula could not produce qualified doctoral can-



National Cancer Institute

“Without a life-expectancy on the order of 70-80 years, the maintenance of a modern society becomes almost unfeasible on grounds of social costs alone.” Shown are high school students conducting experiments, and a patient receiving kidney dialysis.

didates in the arts and science in less than an average six years. In specialist fields of medicine, the period of advanced education and related training is longer.

Let us consider briefly some of the implications of these requirements for training of youth prior to entry into a modern labor-force. The implications are all properly obvious, yet they also serve to point out a few crucial facts too often ignored by policy-makers and policy-influencers.

First, let us imagine attempting to maintain a program of education of the labor-force completed at between eighteen and twenty-four years of age in a whole population whose mean life expectancy were between thirty-five and forty-five years of age. It is sufficient to compare the ratio of the whole population’s labor-force members of households to see the point immediately. Without a life-expectancy in the order of between seventy and eighty years the maintenance of a modern society becomes almost unfeasible on grounds of social costs alone.

So, in addition to rising “market-basket” costs of education, and of sustaining the persons being educated, we must expend efforts to increase longevity. Hygienic programs, health-care, improved nutrition are obviously indispensable. It is also clear that the most costly per-patient aspect of medical science, diseases associated with aging, is the fighting-front of warfare against death, out of which combat the knowledge is adduced necessary to increasing the average life-expectancy of the entire population. Imagine that we would extend the productive age of the population to seventy-five or eighty

years, by improvements in health and longevity: consider the effects, in terms of reduced social costs of sustaining an average individual, for the entire society!

In the same vein of thought, one leading social-cost problem of industrialized-nation economies today is a sharp decline in the birth-rate, whose effect is to make the populations of those nations demographically aged. Rather than increasing the birth-rate, to restore the balance in the population, influential forces of those nations are proposing to accelerate the death-rate among persons over fifty-five years of age: to redress the imbalance by *murder as a state policy*.

Complementing this demographic aging of industrialized nations’ populations, we have a population in the sixty-five to eighty-five year interval of age who are being killed by combinations of increasing material deprivation and ennui. We must improve the physical well-being of the average individual entering and participating in this age-range, and must provide optional forms of fruitful activity—instead of relegating the retired ages to the equivalent of a mythical “elephant’s graveyard.” The net social cost of larger medical expenditures and other supportive efforts will be less than nothing, and all of us can then cease to lower our heads in shame when we look at the condition of our aged parents and grandparents.

In addition to the costs directly attributable to education and to support of the young during that age-interval, the advancement of technology requires improvement in the cultural circumstances of life of the entire population—of all ages. This improvement is required,



EIRNS/Sylvia Spaniolo

"In addition to the costs directly attributable to education, and to support of the youth during that age-interval, the advancement of technology requires improvement in the cultural circumstances of life of the entire population—of all ages." Shown is the Schiller Institute Chorus.

most obviously in respect to the adult household's functions of child-rearing. The cultural level of the household and general community affect most significantly the intellectual potentials of the youth in school.

That is but the first obvious feature of this matter. As it should become obvious in the course of the unfolding of this report, the level of technological culture achieved by a member of the labor-force at the close of basic education and apprenticeship can not be the end of education. In a well-ordered society technological revolutions of some degree must occur cumulatively over periods of not less than seven and fifteen years. The member of the labor-force must do more than qualify for a fixed level of technological competence. The member of the labor-force must not only assimilate new technologies several times over the course of a lifetime, but must participate in the usual case in contributing to initiation of improvements in technology. A rich cultural life, with the institutions of leisure appropriate to this, is an unavoidable aspect of just maintaining and improving the potential relative population density.

As the costs of educating an individual increase relative to earlier, prior levels of technology, and as the value of creative leisure-time activities to society increases, such forms of waste as an average of several hours each working-day travelling to and from work become intolerable. Similarly, the necessity of expend-

ing a significant number of hours each day in shopping for food and other regular items of household consumption becomes an intolerable condition.

Fools argue that these costs to the population do not count as costs to production. Foolish accountants do not understand the importance of several hours a week spent singing in a chorus, performing in an amateur orchestra or instrumental group, house-music in the community and home, study at home of some matter of interest to the citizen, of various social activities with family, friends and acquaintances. In these leisure activities, not only are the qualities of the citizen developed, but a population which is creatively stimulated in its leisure life is of improved morale and greater increased disposition and aptitude for creative innovation in activities as a member of the labor-force.

These observations are not to be pushed aside as amiable sentimentalities, as the significance of such matters of leisure activities should become clear as this report unfolds.

A population were prudent to waste none of its wealth on gambling, tawdry entertainments, on household-consumption expenditures to solicit envy, and so forth. A good, simple life were better, saving expenditures and time for those activities of family, community and private leisure which improve the mind and soul of the citizen. Conspicuous is the case of the United States, which may spend as much on mind-destroying "recreational drugs" as upon military defense, and which spends massive amounts on pornography and other predicates of Sodom and Gomorrah. After we strip away such immoral waste, and reduce our requirements to those of a simple, fruitful, and good household and individual life, those prudent requirements can not be left unfulfilled without some cumulative damage to the productive potentials of the population.

Through technological progress, society produces individuals of average increased power over nature. This increase of power is correlated, in direction, with increases in the quantities and varieties of the content of the average market-basket of goods and services. At the same time, there are correlated changes in the necessary composition of the family household. For these and related reasons, it is absurd to compare the population-reproduction characteristics of two societies or two different periods of the same society on the basis of merely counting the number of individuals produced: 1, 2, 3, From the vantage-point of the implied mathematics for study of human ecology, no fea-

ture of the statistical analysis employed for ecological studies of plant and animal populations has any applicability to human populations.

2.

The 'Thermodynamics' of Society

The indispensable succession of technological advances required merely to maintain a constant value of potential relative population-density defines the process of human reproduction as what is properly termed *negentropic*. This, as we shall elaborate the point at a proper, later point of this report, is key to understanding why increases in the absolute size of the human population are necessary for those technological advances which would be required even to maintain a constant potential relative population-density even for a smaller population.

In a proper approach to analysis of any physical system, we analyze the total work applied to the system into two principal components. A certain amount of work must be applied to the system to maintain it in the same degree of organization as during a preceding epoch. In ordinary usage, one speaks today of the "energy of the system" in identifying the work necessary to maintain the physical system in the equivalent of a constant state. In applying this to society, the constant value of reference is a constant value for potential relative population-density. This is the first component of our analysis of the work applied to society.

The second component is the portion of work available to accomplish useful change above and beyond maintaining the system in its previous or equivalent state. This second component is usually identified as the "free energy" of the system. In the instance of human ecology, this is the portion of the total work of society available to expand the scale of the society and to increase the value of the society's potential relative population-density.

The study of all physical systems is properly focussed upon the way in which the values of the ratio of *free energy* to *energy of the system* change. A system in which this ratio increases is called *negentropic* (negative entropy). A system in which this ratio decreases is called *entropic*.

It is important, at this point, to stress that modes of

economic analysis which purport to measure the wealth of a nation as the sum of the wealth of individuals, firms and farms, are intrinsically incompetent modes of analysis. If the total wealth of a nation falls below the levels of consumption required to maintain a constant potential relative population-density, the national economy is functioning at a level insufficient to maintain the equivalent of "energy of the system." The economy is collapsing. If the trends so reflected continue, the society will die. We must take the society as a whole as the indivisible unit of primary measurement; we must consider the parts of the whole only in respect to the effect of action of the part on the balance of growth or contraction of the whole. Any violation of this requirement introduces ab-



Through technological progress, society produces individuals of average increased power over nature. Shown are workers assembling combustion engines at Ford Motor Company's Cleveland Engine Plant #1.

surdity into the accounting. Unfortunately, at this time, precisely such absurdity predominates in the national income-accounting procedures of nations, the UNO and supranational and private institutions.

To analyze an economy (a society), we begin with the population as a whole as the primary unit of measurement. We then analyze the activities of this population as a whole, studying the mediation of the reproduction of the population as a whole through the production of goods by the labor-force portion of that total population.

To effect such an analysis, we assort the population into two principal categories. We make this assortment by households, not by individuals, since the household is the indivisible unit of reproduction and rearing of new members of society. For purposes of broad analysis, we divide the population of households into two

principal categories: households represented by members of the goods-producing (and transportation) labor-force, and other households.

Although useful administration and services contribute directly or indirectly to maintaining and improving the productivity of goods-producing labor, administrative and service functions are not productive in and of themselves. Their benefit to the economy (potential relative population-density) must be mediated through goods-producing labor, and that labor must be fruitfully employed.

We treat essential categories of administration and services, plus necessary military and security functions, plus idleness and other waste, as “overhead expenses” of society as a whole.

We divide the whole goods-output of productive labor (as a whole) into categorical forms of consumption of such goods. First: the consumption of goods by households of the goods-producing labor-force. Second: capital-goods consumption for goods-production and transportation. Third: consumption for maintenance of categories of “overhead expenses.” Fourth, finally, the margin of “net profit,” represented by goods or available goods-producing capacity, after deducting the cited three categories of combined costs and expenses.

It might be argued that members of the labor-force may change employment from productive or overhead forms of occupations, and that two members of the same household may be employed in different categories. This poses no inherent difficulty for analysis, since it is, as we shall show, the rate of change of ratios, rather than momentary statistical values, which concern us.

It should be readily seen that the combined costs and expenses we have identified correspond to “energy of the system,” and that the “net profit” corresponds, at least potentially, to the “free energy” of the reproductive process. It is the ratio of these two values which becomes the central point of reference for our continuing process of analysis.

If the society were both fixed in scale of population and productive activity, the rise in marginal costs of the



cc/Neil Palmer (CIAT)

If the level of a national economy is insufficient to maintain the equivalent of the “energy of the system,” the total wealth of that nation will be unable to maintain its relative population-density. Shown is a Kenyan farmer at work using labor-intensive farming techniques.

raw materials associated with a fixed technology would cause the value of the key ratio to fall over the course of successive epochs of production: *entropy*. Without the application of “free energy” (the net-profit margin) to expand the economy and to increase productivity through technological advances, the society is self-doomed to die.

We interrupt the development of our point here to refer to the argument of the malthusians.

The malthusians argue that because of apparent limits of the natural resources

which present technology requires for necessary raw materials, we must halt or even reverse technological progress, placing increased emphasis upon labor-intensive over capital-intensive modes of production. They argue that this policy they propose is indispensable to delay an ecological crisis.

From the points we have outlined thus far, and we have relied upon no debatable inferences in any of this, it is clear that if an ecological crisis were to confront us, it would occur for no other reason than that we were foolish enough to heed the advice of such ecologists. Unless we increase productivity, relying upon advances in the quality of productive technology for this purpose, we shall indeed bring a genocidal sort of ecological crisis upon humanity. If we refused to begin deploying nuclear-energy technology on a large scale immediately, hundreds of millions of people in the developing sector would die unnecessarily from combined direct and indirect consequences of combined shortages and high social costs of energy.

To resume our development of the points of this section:

We have already emphasized the seeming paradox that the social cost of producing an individual must decline, while the costs in terms of comparative market-baskets must increase. Translating what we have outlined on that point into the terms of reference we have introduced in this present section, we say that such a rise in the market-basket cost of average labor represents an increase in the level of “energy of the system” per-cap-

ita. However, if this is associated with a lower social cost of producing the average individual's market-basket, there is a tendency for the rate of profit to rise—provided expenses do not increase to prevent this, and that capital costs do not increase to prevent this result. In such a case, the “energy of the system” would increase, while the free-energy ratio increased also. *The persistence of such a trend over successive epochs of the productive cycle represents manifest negentropy.*

The source of such negentropy is not investment in production as such, but rather investment in improved productivity, investment in improved technology. It is the rate of “injection” of improved technologies into the economy which determines the potential negentropy of the economy, and nothing else. This is the only source for maintaining and improving the potential relative population-density of the society.

For reasons we shall now begin to elaborate, the increase in the per-capita level of “energy of the system” occurs not only in respect to household and related consumption. It occurs also with respect to capital consumption by agriculture (broadly defined), industry and transportation. It also occurs with respect to certain essential features of administration and services, as distinct for the increases in “energy density-levels” of the households associated with administration and services. We shall now elaborate these features of the matter in successive steps, until a rounded picture of the matter is thus presented.

Leibniz's Revolution in Economic Science

The school of Naples contributed an essential, leading role in development of statecraft for all of Europe. At the beginning of the seventeenth century, this center added major contributions to what was known as cameralism in Italy and Germany, and as mercantilism in France. In opposition to the rentier-financier interests, which identified wealth with fixed natural resources and extraction of profit only as usury or ground-rent, the cameralists treated natural resources as “mere accidents of geography,” and correctly located the source of wealth as the development of the productive powers of labor. Within this policy, the importance of the articulated tool was situated, and was frequently termed “artificial labor.”

Within this general policy-outlook, Gottfried Leibniz effected a revolution through which modern economic science was established beginning the 1670s in France.

The central feature of Leibniz's revolution in statecraft was his focus upon the generalized implications of heat-powered machines, “by which one man may accomplish the work of a hundred others.” From this inquiry, overlapping Leibniz's pre-1676 development of the differential calculus, Leibniz developed the notions of *work*, *power* and *technology* common to both economic science and to physical science thereafter. To these conceptions and their implications for our subject here, we shall refer repeatedly as we proceed through the remaining pages of this report. We interpolate here a few indispensable observations respecting the directions in which Leibniz's influence flowed in economic science and physical science into the mid-nineteenth century, so that we need not introduce such qualifications piecemeal as occasion for such references occurs at later points in this report.

By *economic science* we mean the currents of mercantilism and cameralism which guided the economic development of leading nations of continental Europe and the United States inclusively, over the period from 1653 (Cardinal Mazarin's defeat of the Spanish Hapsburgs) into the third quarter of the nineteenth century, including the industrial development of Northern Italy by Cavour's circle and the successful Meiji Restoration development in Japan. After Leibniz, the names mercantilism and cameralism continued to be used to designate a subsumed economic science, and also the alternate term “physical economy.” This was mediated during the eighteenth century through Leibniz's influence, and most notably through circles associated with the Oratorian teaching-order in France. In France, Leibniz's term *technology* was translated as *Polytechnique*. Out of these currents emerged two subsumed developments. The first was the 1789-1791 establishment of what was named “The American System” of political-economy, under President George Washington and Treasury Secretary Alexander Hamilton. This American System was based on a Leibnizian version of French mercantilism. The second was the establishment of the École Polytechnique by Lazare Carnot and his former teacher Gaspard Monge. After 1815, and the fusion of German cameralism with the American System (e.g., Friedrich List), the term American System became the name in general use to designate economic science.

In general, outside Japan and the influence of this author and his associates, economic science no longer exists in practice. What is taught as economics in European and United States universities (and in most other



Public domain

Lazare Carnot (1753-1823)



François Séraphin Delpech

Gaspard Monge (1746-1818)



Public domain

Friedrich List (1789-1846)

“By economic science we mean the currents of mercantilism and cameralism (physical economy) which guided the economic development of leading nations of continental Europe and the U.S. from 1653 to the third quarter of the 19th century.”

nations) is the so-called British school of political-economy. The dominant variety of British dogma taught, and upheld by most putative professionals today, is the application of the “hedonistic calculus” of Jeremy Bentham, which John Stuart Mill, William Jevons and Alfred Marshall renamed the “utilitarian” dogma in political-economy.

The axiomatic premise of marginal utility is the argument of Bentham, that man is incapable of knowing any values but those corresponding to the individual’s subjective perception of the pleasure and pain associated with isolated transactions. Marginal utility presumes that variations in prices reflect the individual’s efforts to measure the relative pleasure and pain associated with transactions. It is assumed that in an extended ergodic process, the actual money-prices will tend to converge on the relative hedonistic values associated with the individual’s experience in buying and selling of goods, labor and services.

Professor Milton Friedman is thoroughly consistent with the axiomatic principles of British economy when he proposes legalization of many things now treated as unlawful practices, including traffic in heroin, on grounds of “free trade.” His argument is the hedonistic argument we have just summarily identified.

In its earlier version, that of British East India Company propagandists Adam Smith, Thomas Malthus, and David Ricardo, the British System of political-economy was the most immediate issue of the American War of Independence. The representatives of the American System, including Mathew Carey, Friedrich List,

and Henry C. Carey, were most explicit and detailed in explaining how and why the American System and the British System of Smith, Malthus and Ricardo were deadly adversaries.

Behind the shameless immorality of modern British (and Viennese neo-positivist) political-economy, its avowed adherence to the “hedonistic principle,” British political-economy is totally adapted to the principles of a rentier-financier society, as opposed to an industrial-capitalist society. As David Ricardo was quite explicit on this point, and as Karl Marx critically defends Ricardo’s essential point, the British System before and after John Stuart Mill is based on the principle of usury and ground-rent. If one recognizes that usury is a special form of ground-rent, one understands the whole matter more readily. It denies the existence of a necessary (determined) level of industrial profit on production by industries and farms, and refuses to take into account such features of the economic process as we emphasize in this report.

The British dogma of “free trade” has always been a policy aimed at driving the prices of industrial and agricultural products and labor down to the lowest margin possible, thus increasing the portion of the total income of society exacted in the form of usury and ground-rent. On these and related grounds, the Careys and others described the British system as a mixed feudalist-industrialist system. Better than “feudalist” would be the designation “oligarchical,” using that term in the sense of the policy embodied in the fourth century B.C. proposal to establish a “Western Division of the



Clipart

Adam Smith (1723-1790)



Thomas Phillips

David Ricardo (1772-1823)



John Linnell

Thomas Malthus (1766-1834)

"The British dogma of free trade has always aimed at driving the prices of industrial and agricultural products and labor down to the lowest margin possible, thus increasing the portion of the total income of society exacted in the form of usury and ground-rent."

Persian Empire" on the basis of the "Persian Model."

Although several presidents of the United States (Jefferson, Madison, Jackson, van Buren, Pierce, Buchanan, and others) were advocates of the British East India Company's policies, Washington, Adams, Monroe, John Quincy Adams and Lincoln adhered vigorously to the American System. Through the work of those administrations, all of the policy-institutions of education and of agricultural and industrial progress were established before 1871. With the British and J.P. Morgan's success in corrupting the Congress in 1876, to enact the Specie Resumption Act, the United States surrendered its sovereignty over its national debt, currency and principal flows of credit to foreign forces centered in the City of London. Today, only Japan adheres to economic science. In policy, or at least in terms of accepted economic doctrines, every other nation of note, including East bloc nations, teaches and worships the British system of political-economy in either its strict form or its Marxian offshoot.

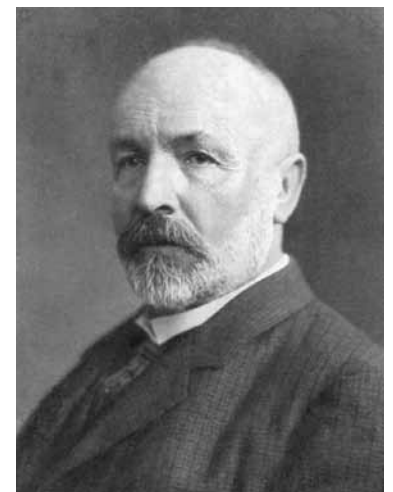
As this author has given the proof in published locations, the British doctrine of political-economy is axiomatically malthusian in its implications for practice. Those objections to malthusian policies which one might suppose to originate with even the narrowest self-interests of industry and agri-

culture are nullified by the widespread, credulous acceptance of British dogma in the name of putative economics.

In physical science, the patterns flowing from Leibniz are approximately the same as for economic science. The emigration of the École Polytechnique's leading figures to Alexander von Humboldt's Berlin, during the post-1815 period, brought Leibniz's French currents into union with his German currents, and with the collaborators of Bernhard Riemann (e.g., Enrico Betti) around Cavour's circles in northern Italy. Since the work of Riemann and Georg Cantor during the



Bernhard Riemann (1826-1866)



George Cantor (1845-1918)

"In physical science, the patterns flowing from Leibniz are approximately the same as for economic science.... Since the work of Riemann and Cantor, no truly fundamental accomplishments in scientific knowledge have occurred."



USDA/NRCS/Jeff Vanuga



USDA

Treating the soil with trace-elements and other conditioning features, and injecting energy in the form of manufactured fertilizers, combined with the use of powered machinery, irrigation and improvements in crops and livestock, enables us to increase greatly per-hectare yields. Shown is a farmer applying fertilizer to a field in California; and another adjusting water flow on a furrow-irrigated lettuce field in Arizona.

period concluding with Cantor's work of 1871-1883, no truly fundamental accomplishments in scientific knowledge have occurred. There have been numerous important achievements in scientific work, applying to broader domains the scientific apparatus developed at Göttingen and Berlin through the 1880s, but no fundamental discoveries of the sort which marked the progress of continental science from Nicholas of Cusa's commentaries on Archimedean science, through Kepler, Pascal, Leibniz, et al. into Riemann's and Cantor's fundamental breakthroughs. The fundamental, unsolved problems of physical science today remain as they were when Riemann died in 1866 and Cantor rounded out his work of the 1871-1883 period.

Why the years immediately preceding and following 1871 appear in so many facets of culture to be a critical turning-point in the general trends of modern history is an important, and most significant question, but one we think it inappropriate to more than indicate here. What is significant in this dating for the halt in fundamental progress in scientific method is that Riemann's successors, excepting perhaps some among Betti's circle in Italy, either rejected or greatly diluted the central feature of Riemann's contribution to physics and mathematics, what is sometimes termed the principle of the *ontologically transfinite*, a notion precisely

congruent with the classical Christian theological presentation of the nature of substantiality in the perfect consubstantiality of the Trinity. This was the center of the impetus given to physical science by Cusa, the dominant feature of the founding of modern mathematical physics by Kepler, the central feature of Leibniz's scientific method, and also of Riemann and Cantor (among others). Once that principle was pushed out of scientific work, fundamental scientific progress flattened-out, progressing sideways to considerable extent, but not forwards.

This principle, as reflected in the author's understanding of Riemann's 1854 habilitation dissertation and other matters, is the crucial feature of the author's contributions to economic science, and thus the premise for what is termed the LaRouche-Riemann method of economic analysis.

Now, having summarily identified matters we shall encounter subsequently in this report, we resume the immediate point.

In the ordinary development of a heat-powered machine, we study the essential movements to which we desire to give a powered expression in the machine. Thus, we shift the source of energy from the muscle-power of man and beast to the heat-energy driving the machine. We then go further in the same direction, not

only increasing the power of machines, but increasing the energy-flux-density of the heat-sources employed to drive productive processes of all kinds.

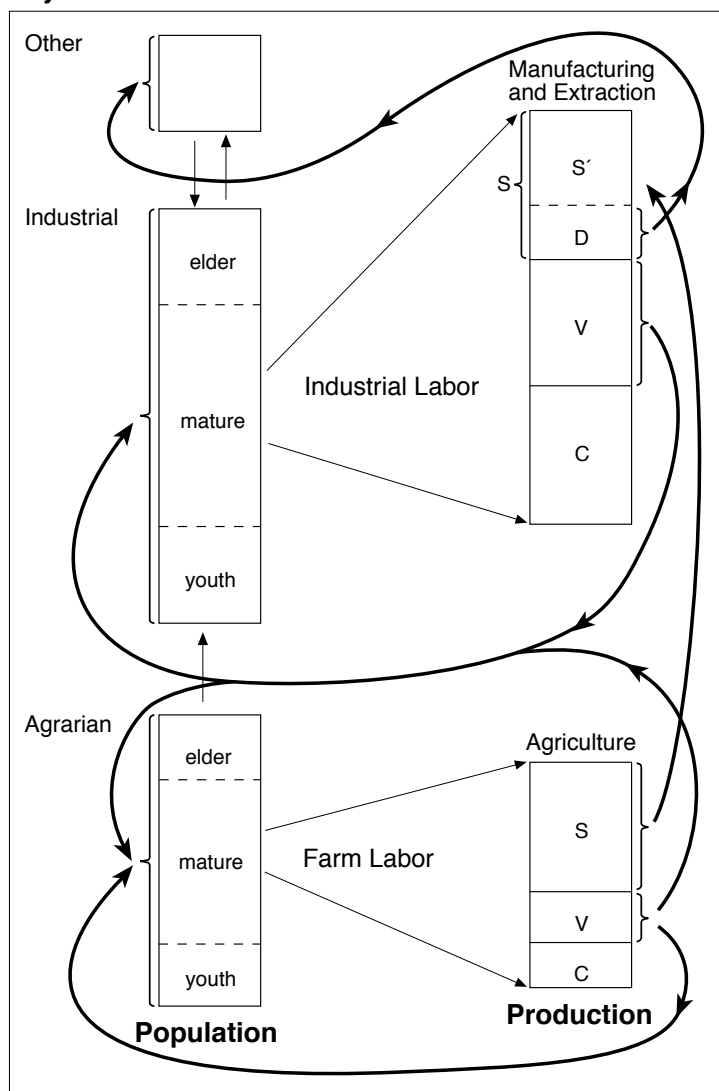
A similar process occurs in the development of agriculture. The very low energy-flux-density of sunlight per hectare and the rates at which plants can convert sunlight into biomass are limiting conditions. Since the work of Justus von Liebig et al., we treat the soil with trace-elements and other conditioning features, and inject energy in the form of manufactured fertilizers. This, combined with powered machinery, irrigation, and so forth, and with improvements in crops and livestock to take advantage of artificial conditions, enables us to increase greatly the per-hectare yields, while, increasing greatly the number of hectares efficiently worked by a single farmer. The increase in levels of per-capita consumption of agriculturally produced food and fiber in the United States, while the agricultural component of the labor-force has contracted from 90% (1790) to approximately 4% today, is the much-cited illustration of this.

Wild agricultural land, like the earth itself, has a poor fertility. The fertility of agricultural land is the benefit of human labor, the improvements in the land, crops, livestock and methods of production cumulatively injected and maintained by farmers in cooperation with society generally.

So, in the advancement of technology, we increase the per-capita “energy of the system” in the household, in industry, in agriculture, and in transportation. As this process unfolds in the domain of production of goods (and in transportation), the relative increase of per-capita “energy of the system” in the form of improvements in nature and in production capital is greater than in the growth of relative per-capita “energy of the system” in the form of household consumption.

Let us change the definition of the content of Karl Marx’s symbology to concur with the different content we assign in this report. Let the household and related goods-consumption of the goods-producing labor-force be signified by V . Let the “energy of the system” represented by capital improvements in nature and production capital be signified by C . Let the “overhead expenses” be signified by d . Let the gross surplus of goods

Physical Economics Flow Chart



produced, after deducting $(C + V)$, be signified by S . Let $(S - d)$ be signified by S' .

Then, $S'/(C + V)$ represents the crucial ratio of “free energy” to “energy of the system” as measured in terms of the ratios of goods-producing households. C increases more rapidly than V , while it is required that $S'/(C + V)$ must rise. Since the market-basket value of V per-capita increases even though the social cost of V per-capita decreases, the increase in productivity required must be premised on the required result in terms of $S'/(C + V)$ for the condition that the market-basket content of per-capita V rises as required. This rise in productivity must be effected by injections of improved technology.

The measure of a succession of values for the ratio $S''/(C + V)$ is an increase in the society's potential relative population-density. The change in value of $S''/(C + V)$ sufficient to increase the potential relative population-density by some designated degree is the measure of the net work accomplished by society. All other work applied to the economy (society) merely maintains the value of the system (value of potential relative population-density), and is thus broadly comparable to the molecular activity in some three-legged stool standing stably in a corner. This latter work we designate, therefore, as *virtual work*.

The rate of increase of the net work of the economy (society) is the *power* of the process being analyzed.

The ordering of innovations which fulfills the conditions we have identified so far is *technology*.

This ordering correlates with a long-term tendency for the required per-capita energy-density consumed by society to rise geometrically relative to increases in society's indicated potential relative population-density.

Given this basic and other conditions to be satisfied, the business of statecraft is to discover and implement those improvements which satisfy these conditions. Foremost among those requirements of statecraft is the fostering of general education and scientific inquiry, such that the needed innovations in technology may be developed, and, as developed, will be given to a labor-force educated to the level needed to assimilate such improvements for practice.

3.

About Ten Billions People

During the recent three years, the author and his associates have been conducting computer-assisted projections of economic development for India, Mexico and other nations, as well as recurring studies of current trends in the U.S. and other economies. This method, called the LaRouche-Riemann method, is the only computer study of the post-October 1979 Volcker measures' effects which has accurately forecast all of the essential features of the recent period! In fact, all of the leading econometric studies have been repeatedly totally incompetent.

Using this same approach, we have attempted to es-

timate the general characteristics of an acceptable form of world-economy approximately fifty years ahead. Using rather conservative estimates of the rates at which technological progress might be effected in developing nations, but requiring the elimination of misery, we find that the required world population fifty years from now must be slightly less than or greater than ten billions people. The precise calculations are not the significant point. Any competent calculation must yield a comparable result.

The calculations are to be made, in any case, by something approximating the following successive steps.

The estimated per-capita energy-consumption of in-



cc/Charles C. Watson, Jr.

Vogtle Electric Generating Plant, a nuclear power plant near Waynesboro, Georgia.

dustrialized nations is about 38,000 kilowatt-hours. The energy-consumption of poorer, but not the poorest, developing nations is approximately *an order of magnitude less*! For reasons implicit in our review of factors of "energy of the system," it is impossible to achieve combined agricultural and industrial outputs per-capita equivalent to 1980 industrialized-sector averages without approaching 30,000 to 35,000 kilowatt-hours per capita in all of the developing sector.

Our goals are modest ones. For India forty-five years hence, we project an estimated agricultural component of the labor-force of about 25%, about that of the Soviet Union today, or of France at the beginning of

the Fifth Republic. We project at the present phase of our study, about 35,000 kilowatt-hours per-capita for Egypt, with a population of about 90 millions persons, by the year 2020.

This sort of fact leads to the desired calculations.

First, we know that most of the added energy production must be supplied by nuclear-energy plants.

Costs of fossil-fuel energy-production are already significantly higher than for current generations of fission-energy plants, and must rise on the basis of unavoidably rising social costs of fossil fuels—although undeveloped resources of petroleum and natural gas vastly exceed published estimates. We will use natural gas where economics prescribes, and will include high-potential hydroelectric development wherever it exists or can be developed as a by-product of urgently needed water-management programs. The proposals for solar energy for industrial use and for “renewable resources” are a wild hoax: the capital costs of solar-energy substitution are inherently one or two orders of magnitude higher per kilowatt-hour than nuclear.

Except as fossil fuels are locally cheap and abundant, and except as high-potential hydroelectric sources are available, the entire increase of energy-input to the developing sector must come from nuclear energy.

Based on our knowledge of the scientific and engineering problems involved, and aided by studies of projections by U.S. energy agencies, we know that laboratory production of net energy, from a fusion-energy process can be demonstrated before 1985, and that commercial fusion-energy production can be made available by the turn of the century. This means that the bulk of the added energy for developing-sector and other nations’ needs must be supplied by known types of fission-energy plants for about the next twenty-five years or longer.

We know the labor-content of the construction and operation of each such type of energy-plant. We know the labor-content of the types of materials used in construction of such plants. A set of corresponding linear



Ford Motor Co.

The advancement of technology depends upon an increase in the complexity of the social division of goods-producing labor; while heat-powered elements in goods-producing capacity is also increasing. Shown is automated robotic spot welding at Ford Motor Company's Chicago Assembly Plant.

equations permits us to estimate with fair accuracy the total amount of labor-force required merely to supply the plants and materials used in constructing and maintaining such plants over the next quarter century, and to construct estimates in a similar fashion for an additional quarter century.

We also know, as a fair estimate, the ratios of social cost for energy-production to other categories of production and other employment. By such means we construct an estimate of the total labor-force required fifty years hence. Since we know the variables of household demography well enough to offer fair estimates of the ratio of labor-force to total-household population, a fair estimate of the size of required population follows. Hence, approximately ten billions people, are estimated as required.

The principal objection to such an estimate is the observation that productivity should increase significantly over fifty years. At first glance, that is a very persuasive objection. After rigorous reflection, we reject the objection. The effect of improvements in technology must necessarily be to increase the scale of required labor-force, and hence the population.

In summary, descriptive terms, our refutation of the indicated sort of objection is this.

The advancement of technology depends upon a

two-component increase in the complexity of the social division of goods-producing labor. The social division of labor, in human-labor terms, is increased, while, at the same time the elements of the division of labor incorporated as heat-powered elements in goods-producing capacity is also increasing. So far, this twofold process always results in a net increase in the number of elements of the social division of goods-producing labor.

Furthermore, for related reasons, as technology advances, and as production becomes increasingly capital-intensive, the number of required scientists and engineers per 100,000 goods-producing operatives increases. This increase is associated with the rate of required increase in capital-intensity, and with the complexity of the division of labor.

Therefore, if we take the sum of distinctive functions of the social division of goods-producing (and transportation) labor plus the equivalent embedded in goods-producing capacity's capital-intensity, and designate that sum by the symbol n , then technological progress takes the form of a transformation of the complexity of the productive process from order n to order $n + m$.

This yields another expression for technological progress: $P = F_n[(n + m)/n]$. In that expression, P signifies potential relative population-density, F signifies some function to be designated for the ratio enclosed in the brackets, and n and m have the significance we have identified immediately before this point. Since we also have, from our earlier discussion, $P = F_p[S'/(C + V); S/(C + V + d)]$, for which F_p is not the same as F_n the projective equivalence of the two functions is indicated.

As we shall indicate later in this report, there is a strong, conclusive proof for the appropriateness of the notion of functions F_n . Such a function is uniquely Riemannian, in the sense "Riemannian" is defined in exemplary fashion by Bernhard Riemann's 1854 habilitation dissertation, "On the Hypotheses Which Underlie Geometry." The author has treated this summarily in published writings including the recently published treatment of systems analysis¹ in the *Executive Intelligence Review*. A proper definition of "negentropic" is a purely-geometric definition, as distinct from the statis-

tical definition commonly used during the post-war period to date. A negentropic universe is a Riemannian universe, whose characteristic feature is a constant transformation from a continuous manifold of momentary order n to a successor such manifold of order $n + 1$. The mere fact that our universe exists is already conclusive empirical proof that that universe is negentropic as a whole, in the sense associated with Riemann. This latter point was argued by Philo of Alexandria, and appears as a leading point of ridicule of Isaac Newton's work by Leibniz in the Leibniz-Clarke correspondence. To that point, we shall return, as indicated, in due course here.

Hypothetically, technological progress could reach some qualitative point of transformation in the general ordering of progress, at which point of change the net increase in the topological ordering of economic phase-space would be entirely "compacted" into the development of capital goods of production and transportation. In terms of industrial and agricultural technology as defined by the period 1670 to the present, such a change is presently impossible; to the present, a net increase in the social division of labor in production and transportation of goods is inherent in progress. Only after we have shifted into a new series of kinds of technological progress, a generalized Riemannian relativistic physics of the sort implicit in Riemann's 1860 "shock-wave" experimental design, could we begin to envisage the kind of transformation in which advances in economy per se would not directly incur required increases in the labor-force.

Therefore, pending a generalization of such Riemannian relativistic physics as a new basis for productive technology in general, we are obliged to assume the persistence of the indicated rule, that technological progress increases the complexity of the social division of labor, and increases the required scale of the labor-force as a result of such increases in complexity.

Consequently, if the projection indicated by calculation from rough constraints (energy requirements fulfilled by nuclear-energy production) underestimates technological progress, on the one side, such overestimation of social costs of production is an underestimation of the increase in required size of the labor-force caused by technological progress.

Before examining the proof to this effect to be adduced from physical science, we consider the economic principles involved from the vantage-point of the clas-

1. Lyndon H. LaRouche, Jr. Two-part report on systems analysis, "Systems Analysis is White-Collar Genocide," [Part 1](#): *EIR* Vol. 8, No. 49, Dec. 22, 1981; and [Part 2](#): *EIR* Vol. 8, No. 50, Dec. 29, 1981.



USDA/Lance Cheung

A Virginia farmer driving one of his operation's smaller John Deere corn harvesting combines from one field to another during a harvest.

sical formulation of the American System, U.S. Treasury Secretary Alexander Hamilton's 1791 report, "On the Subject of Manufactures."

From Rural To Urban Preponderance

The root of misery in the world today is that underdevelopment of the social division of labor which is reflected in a twenty-five percent or higher rural component of the total national labor-force.

A relatively low yield per hectare, and, relatively much worse, a high ratio of farm labor required per 100 hectares, intrinsically defines a society as subject to a relatively low potential relative population density. The ratio of total population sustained per farmer is the first measurement of economic development and the broad determinant of a society's potential relative population-density. A policy of promoting rural over urban life, and of promoting labor-intensive, rather than capital-intensive development of agriculture, is today in and of itself an act of genocide.

The leading task of the world today is to develop rapidly both the per-hectare yields of farming, forestry, and so forth, and the number of hectares productively subsumed under the labor of an average farmer. In broad terms of policy, this is to be accomplished by a choice of direction outlined in Hamilton's cited report, a report which uniquely corresponds to successful agricultural development over the course of the past two centuries to date, and which has been proven the only competent policy of approach to de-

veloping economies generally.

Given the indicated commitment to supply the world with adequate per-capita energy-supplies, the application of this energy-input in the developing sector must emphasize those combined actions for capital-intensive development of agriculture and of the entire population which leads to the kind of rural-to-urban shift required. We must give precedence to the application of limited global means to those forms of investment which have the most immediate bearing upon this indicated transformation.

There must be a "shock" transformation of public education, together with measures of hygiene and health-care, which rapidly qualify populations usually

fifty percent children and youth, both as citizens and as employable productive labor in terms of modern technology. In agriculture, we begin by injections of water-management, soil treatment, pest control, fertilization and mechanization, to transform the productivity of modes of agricultural production already in use, but we act so with definite targets to be reached over one and two generations, and in terms of incremental improvements estimated in decades.

Mexico is among the more fortunate instances of a nation whose population has a developed sense of national common interest, and which is able to assimilate masses of improvements in agricultural and urban goods-production, on condition that the youth population—half the total—is educated rapidly enough and afforded suitable employment opportunities as youth enter the labor-force. This transformation of agriculture and of conditions of life of the populations requires emphasis on certain forms of capital-intensive industrial and transportation developments. Let us view this problem first in its presently most practical, and cruelest terms of reference among the most afflicted nations of Africa.

The Draper Fund, established by the genocidalist General William Draper of the investment-banking firm of Dillon, Read, advocates the racist-genocidalist policies of Cecil B. Rhodes with a vengeance. Draper Fund representatives such as General Maxwell Taylor prescribe the virtual extermination of whole national populations of black Africa, and of other regions of the

developing sector, to preserve the natural resources of these targetted regions as future “strategic assets” of the dominant Anglo-Saxon populations. Taylor, in strongly pressing the government of the United States to openly adopt such a genocidal policy as “strategy,” merely reflects more shamelessly, as does genocidalist William Paddock on the subject of Mexico, the prevailing views of a complex of persons and institutions including the Aspen Institute, Ford Foundation, New York Council on Foreign Relations, George Ball, and influential elements within the Averell Harriman faction of the U.S. Democratic Party, the U.S. State Department, and the Congress.

The “conditionalities” policy of the International Monetary Fund, related policies of the World Bank and Bank for International Settlements, and of such UNO agencies as UNITAR (United Nations Institute for Training and Research), are only efficient means for imposing genocidal conditions of famine, epidemic and homicidal strife upon and among developing-sector nations. The leading authors of these policies are fully witting of that connection.

The same, pro-genocidal policy is applied in practice to the delivery of food-aid to famine-stricken regions of Africa. Let us compare the prevailing practice of delivery of aid with the approach which should be implemented. The rudimentary principles of an assistance-development policy for the most-suffering regions of the world emerge clearly from considering this problem in its simplest, practical terms of reference.

During the period beginning August 1980, the author and his collaborators attempted to mobilize needed U.S. governmental action for aid of starving populations in Africa—over the wicked opposition of the Carter Administration. Assembling a task-force of experienced leading U.S. farmers and with counsel from logistical specialists, we proposed the following approach.

We proposed that the logistical methods which would be recommended by the U.S. Corps of Engineers under war-time conditions be deployed to effect both delivery and means of distribution of food into regions of Africa in which the imperiled portions of the population are located. If we commit our will to such emergency undertakings, we can make a peaceful use of the logistical policy employed for warfare to construct simultaneously ports, airfields, rail systems, highway systems and functioning transportation networks,

through which to deliver food-supplies and other aid needed directly to or close to the areas in which the needy population resides.

The transportation network established for the efficient initial distribution of aid becomes the network through which basic development aid, to aid the populations in increasing their self-sustaining powers for the next year’s crops, is also delivered. This same transportation network permits agriculture to begin efficient specialization in production of an above-subsistence surplus for urban markets. If the development of water-management systems, and supplies of pesticides, soil-treatment materials, and fertilizers is introduced by way of the transportation network, a modest but marginally decisive improvement in the self-sustaining capacities of populations can be effected.

If food aid is distributed, instead, to relief camps, and the population invited to move toward those relief-camps in search of food, a hideous destruction of the society results. The villages and households are destroyed, the affected population reduced to an utterly helpless state of dependency upon aid, promoting vagabondage among males, and rendering the relief-camps virtual death-camps and the trek to the camps a gruesome death-march. Under such circumstances, food aid, whether intended to have such effects or not, becomes an instrument for promoting genocide.

To repeat the important point: Assistance must be directed to increasing the potential relative population-density of the population, to increasing the population’s power to sustain its own existence by means of its own productive labor.

Continuing beyond emergency measures of the kinds we have indicated to be needed, we must aid the nations affected in producing themselves the most crucial among the agricultural capital-goods initially supplied from abroad. In general, such investments will not mature to become financially self-sustaining during a period of less than seven to fifteen years. Low-cost, long-term credit amortized after an initial period of grace over a total span of fifteen to twenty-five years, is the general policy required to supply nations of the most-afflicted categories with the transformations by which they will become truly self-sustaining.

Over the period from the late fourteenth century through the early nineteenth century, in Europe, we



IAEA/Petr Pavlicek

India today has a third of the world's qualified professionals, but the rural poor represents an entropic drag on the negentropic impulse of the relatively more developed sector of its population. Shown is a technician in the control room at the Madras Atomic Power Station in Kalpakkam, India.

demonstrated with aid of improvements devised on the basis of experience, approaches to promotion of classical culture, scientific education, and general education, through which new generations of peoples were uplifted in their moral capacities and self-sustaining powers.

The rentier-financier interests of oligarchism, typified earlier in this timespan by Venice and Genoa, and later by Venice's colony of Switzerland and the extension of Venetian-Genoese power through the British, Dutch and other East India companies, caused the mercantilist-cameralist policies of economy and national development to be curtailed, contaminated or even sabotaged. So, the practice of Europe as a whole over the indicated period is no model of reference, especially abhorrent is the colonialist-imperialist policy fostered chiefly under British influence.

Yet, if we abstract the good work promoted within the overall policy-conflict within Europe, we have a model of reference for discerning the capacities and susceptibilities of any human population to be uplifted. The Humboldt reforms introduced to Prussia, although never fully realized, exemplify the early nineteenth-century assimilation of the whole sweep of experience of Europe from the work of Dante Alighieri through the period of the successive Jacobin

and Napoleonic tragedies of France.

The case of India takes us to the opposite end of the spectrum among developing nations. The Sanskrit language is the oldest of living literate languages today, dated by Brahmins to Vedic writings from as early as 3,000 B.C. The internal "grammatical" features of Sanskrit, even those features immediately evident from the outside of the language's speakers, are more advanced in respect of potential conceptual powers of communication than even the classical Greek or Dante's Italian. Although Indian culture has never fully recovered overall from the devastating influence of the plague of wicked cults devastating Europe, Asia and northern Africa during the course of the first millennium B.C., where the Sanskrit culture is preserved as a leading

elite influence, and where this influence intersects modern science and technology, India includes a population with the highest-ranking cultural potential among nations of the world today.

The number of Ph.D. and related science graduates annually in India compares favorably with the total for the United States. India ranks third in the world today in the sheer numbers of qualified professionals, and, at current rates alone, will exceed the United States in this category by the close of the present century.

The cultured urban labor-force is presently in the approximate range of about 60 millions—more than the entire population of most nations, and should rise to about 100 millions or more in approximately a generation. Given the harsh constraints on available productive capital-goods for industry, agriculture and transportation, the industrial sector of India's economy is at a modern technological level relative to Western Europe, the United States and the Soviet Union. Where limited means have been concentrated for agricultural development, as in Prime Minister Nehru's program in the Punjab, India has demonstrated its ability to become a potential food-exporter.

The problem of India is that the large component of rural poor represents an entropic drag on the negentropic impulse of the relatively more developed sector of

the population. A different, but broadly comparable situation exists in Brazil, in Indonesia, and other nations which might be grouped loosely into the same broad sub-classification among developing nations as a whole. In accounting terms, the Indian economy as a whole is operating at, or just below “break-even” in terms of potential relative population-density.

A few additional remarks concerning India aid in making the working-point clearer. Out of the upper 20% of India’s annual graduates of advanced scientific training institutions, 40%-48% of the total 12,000 emigrate to employment-opportunities in chiefly industrialized nations. The medical professionals from ranks of sub-continent nationals are becoming a dominant feature of the medical care of Britain’s population, which is only the most conspicuous case. If we estimate that the equivalent of between 250,000 and 300,000 dollars is required to educate a graduate scientist in the United States and that a scientist has a working professional life of about thirty-five or more years, the impact of lost professional strata of the population of such developing nations is better appreciated.

Conversely, if this same lost potential were redirected, by aid of suitable material means, to internal development of the developing-sector, or even to the internal development of the nation represented by such professionals, we have a rough sense of what is very immediately feasible in cases roughly approximating the case of India. The reduction of the rural component of India’s labor-force to about 25% by 2020-2025 A.D., is a clearly feasible proposition. This means that the average condition of life of substantially more than a billion Indians, by the period 2020-2025 A.D., could be better in quality than that for France during the 1950s. By a generation later, comparable results could be effected in poorer developing regions. These estimates are, in our view, safely conservative.

This work of export of capital-goods from industrialized into developing regions, would be economically practicable if the dominant British system of rentier-financier world-order were replaced by renewal of the American System. A shift from usury and ground-rent into investible profits of goods-production and distribution of such goods would make possible an increase to approximately 200 billions dollars annually or greater in long-term development-investment credit to developing nations. This would acceler-

ate capital turnover in industrialized exporting nations, and would thus foster rapid increases in technologically-driven productivity of goods production in exporting nations. This increase in internal productivity of exporting nations would itself pay for the costs of developing credit for expanded exports. That is, the populations of exporting nations would experience no reduction in their material conditions of life as a result of enlarged volumes of capital-goods exports to developing nations.

We in the industrialized nations have a vast reservoir of human productive power presently wasted in an excessive growth of labor-intensive services and the administration of such variously wasteful or outrightly immoral and parasitic activities. If the United States, for example, reoriented toward bringing the goods-producing component of the labor-force back to even substantially less than the percentile existing in 1946-1947, the total physical output of the United States would be more than doubled, through combined increase in the goods-producing percentile and advances in productivity associated with such priorities in investment policies. This shift would be deflationary respecting the internal U.S. economy and hardening of the value of the dollar. Related kinds of improvements are feasible over the course of a decade in other industrialized nations of Western Europe.

Presently, the industrialized sector as a whole is operating below breakeven-levels, as measured in potential relative population-density for the nations’ populations, each as a whole and the sector as a whole.

If the levels of goods-output is increased substantially, and only within immediately feasible degrees, there must be an abrupt shift to a net-growth trend within the industrialized sector as a whole, from a negative value of $S'/(C + I)$ to a positive value for $S'/(C + I)$. This shift means the unleashing of a regenerative negentropic potential within the affected economies, a process of self-feeding economic growth and technological progress.

Under such conditions, the new world economic order our remarks imply becomes eminently feasible—on condition we begin soon, before a catastrophic collapse in the economic situation under present IMF policies.

Under those conditions proposed, the first limitation on the world-economy is defined as the need for acceleration of development of more advanced technologies.

That development, in turn, requires overcoming the shortage of qualified people, which, in turn, requires that we reproduce and develop the people required.

4.

The LaRouche-Riemann Method

Although the author's economic science is properly situated within the mercantilism-cameralism of Leibniz and the American System, during 1952 he made a crucial discovery, through reexamining Bernhard Riemann's 1854 habilitation dissertation from the vantage-point of approximately a year of wrestling with Georg Cantor's notion of the *transfinite*. Through that view of Riemann's contributions, this author was enabled to develop a fresh approach to crucial, included problems of economic science, most specifically the problem of conceptualizing as a mathematical idea the stimulation of economic growth through injections of advances in technology.

Although this is treated more or less adequately in either published locations or in items scheduled for publication during the first half of 1982, there are practical reasons for restating those matters from a theological standpoint of reference here. We will be excused for limiting our specific references to several exemplary points from the history of modern science; we wish to take up only as much as bears directly on the immediate purposes of this report.

Although the implications of the "five platonic solids" were extensively explored during the late fifteenth and sixteenth centuries, Johannes Kepler established modern mathematical physics by proving the hypothesis of the golden mean on the scale of the broadest empirical evidence available, the solar orbits. Although Kepler himself devotes the greatest portion of his published writings to this fundamental point, Kepler's work has been so extensively suppressed or misrepresented in textbooks and classrooms over recent centuries that even physical-science professionals generally manifest no awareness of the crucial point or its significance.

The fact that only five regular polyhedral solids can be constructed in visual space proves conclusively that visual space is shaped by something higher, that the characteristic features of lawfully ordered transformations in visual space reflect a determining principle beyond the immediate scope of representation

within visual space. Kepler proved that the orbits of the planets could not be determined by any mode of action contained entirely within visual space, but rather that this action was shaped by harmonic principles reflecting the efficiency of a largely unseen, higher-order space.

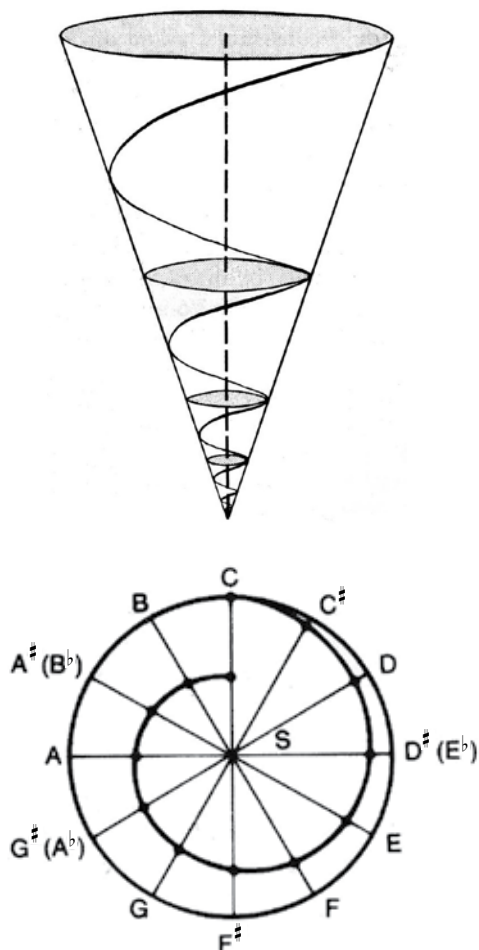
Gottfried Leibniz combined the outline of future development of physics given by Kepler with crucial discoveries of Blaise Pascal, discovering the differential calculus during the period 1675-1676, and otherwise founding more, interrelated branches of human knowledge than the modern university graduate would be able to list. This successive work of Kepler, Pascal, Leibniz and contributing influences was mediated through Göttingen and the École Polytechnique (chiefly), to a cumulative effect reflected for today in the combined work of chiefly Riemann and Cantor.

We know—we are able to prove conclusively—that the visual space is what is termed a *discrete manifold*, which is in large part a shadowy projection of a higher-order reality, a *continuous manifold*. Through mastery of the implications of the projective relationship between the continuous and discrete manifold, we are able to focus our attention on certain unique classes of observations and experiments which open up to our knowledge certainty respecting crucial features of the unseen continuous manifold.

Shadows do not cause the movement of shadows. Yet, the shadows are *projectively real*, and reflect efficient, ontologically-existent action within the continuous manifold projected to our vision as the discrete manifold. The definite objects and metrical relationships we associate with visual space are shadowy ephemerals, yet they reflect real existence in the continuous manifold, as evaporating footprints in the snow reflect the man who has passed there.

Through the line of investigation traced through Archimedes, Nicholas of Cusa, Leonardo da Vinci, Luca Pacioli, Kepler, et al., we know as Leibniz insisted against Descartes, that the proper representation of action in the continuous manifold (from the vantage-point of visual thinking) is not straight-line action, but vortical action harmonically proportioned in a manner which is linked to the principle of the golden mean.

If we construct, for example, a conical helping-figure, we can precisely determine the values of the chords for a twenty-four key well-tempered domain of musical



composition. That demonstration has been reformulated recently by one of the author's collaborators, Dr. Jonathan Tennenbaum, as is summarily described here to assist the readers in following the nature of our argument.

The helping-figure used is a simple conical construction of a logarithmic spiral on the side of a cone, constructing the sector of a circle, and constructing a cone from that sector. Project the spiral onto the circular base of the cone, and divide the base into twelve equal sectors. The chords marked off on the spiral by the radii defining the twelve sectors of the circular base are the proportions of the twelve tones of the well-tempered octave scale.

A useful pedagogical device for communicating the notion of projective relationships between a continuous manifold and a discrete manifold is the following adaptation of a Riemannian stereographic projection. Project higher-order conical projections of spiral action onto the interior surface of a hollow sphere. Within this hollow sphere place a smaller hollow sphere. The observer's

eyes are looking into the interior surface of the smaller hollow sphere from a point we designate as the "north pole." The images seen by the observer are stereographic projections of images on the interior surface of the larger sphere. Those images on the interior surface of the larger sphere are projections of conical spiral action.

This construction, we emphasize, is a pedagogical device, employed to communicate to a student certain very general notions concerning, projective relations between a continuous and discrete manifold. Most of the commonplace fallacies encountered, included the fallacy of "indeterminable interconnectedness," are dispelled by aid of such a pedagogical device.

Since a spiral action is generated by continuous action in the form represented by functions of complex variables, spiral action within hyperconical space is a representation of a continuous manifold. Through such projections (laser techniques are useful for classroom models), we show the student how the appearances of a discrete manifold are generated on the interior surface of the smaller of the hollow spheres.

Through such pedagogical devices we demystify topology. Topology is seen as a matter of isolating those features of projective relationships which are consistent at all phases, from the continuous manifold to the stereographic projection to the observer on the interior surface of the smaller hollow sphere.

Immediately, a certain range of conceptual problems are readily eliminated, but this brings new, more profound problems to our attention.

The points, lines, surfaces, and solids of discrete-manifold images are understood to be not self-evidently discrete objects, in the ontological sense of self-evident discreteness, but are rather lawfully determined topological singularities arising from continuous action in the continuous manifold. That visual space should exhibit the harmonic characteristics considered by Kepler—and for microphysics by Arthur Sommerfeld, ceases to be a conceptual difficulty.

Eliminating the first sort of conceptual problem makes the deeper problem apparent. These problems at first appear to be two, but, upon adequate reflection, the two reduce to one.

The first problem is that the efficient action associated with the singularity-shadows of the discrete manifold is efficient. The second problem is that action in the discrete manifold has metrical characteristics, such that we must locate a corresponding existence for these metrical characteristics of the discrete manifold within the continuous manifold.

In brief, there is only one kind of continuous manifold in which singularities are efficient actors and the generation of projected metrical characteristics of a discrete manifold may occur. This is a continuous manifold in which the existence of the manifold is characterized by a going-over from any existing order of geometric degrees of freedom, n , to $n + 1$. In such a case, as integration of a singularity in a continuous manifold according to what Riemann names Dirichlet's Principle, the singularity is ontologically efficient within the continuous manifold, and projects the image of real, efficient action within the discrete manifold.

That is the kernel of Riemann's 1854 habilitation dissertation, and the kernel of Riemannian physics.

That dissertation is defective only with respect to its incomplete treatment of the notion of number. Cantor's work on the transfinite from the 1871-1883 period implies the remedy for that incompleteness.

It was at that point of progress that fundamental discoveries in science essentially halted with the contributions of Riemann and Cantor.

This accomplishment, and the work leading into it, was violently opposed by the British, by Augustin Cauchy and by Cauchy's posthumous German co-thinkers, such as Leopold Kronecker, Richard Dedekind and Hermann von Helmholtz. James C. Maxwell's fraudulent treatment of the work of Heinrich Weber and Riemann, Lord Rayleigh's incompetent criticism of Riemann's design of the shock-wave experiment, and the fanatical attacks on Riemann, Cantor, and, to only a lesser degree, Felix Klein and Max Planck, by the British Apostles Group, including the evil Bertrand Russell, typify the conditions responsible for the varying cases of dilution or outright outlawing of the Riemann-Cantor contributions during the latter nineteenth century and the present century to date.

However, all of the crucial developments in or verging upon relativistic plasma physics during the present century demonstrate that Riemannian physics is correct, and Riemann's opponents incompetent in respect of the grounds of their opposition.

The continuous manifold (universe) whose action is characterized by the geometrical notion of a going-over from each n degrees of freedom to $n+1$ degrees of freedom is a negentropic manifold. This geometric definition is the only properly rigorous definition of negentropy.

This, and the supporting forms of crucial-experimental proof of Riemann's physics, shows that the notions of "conservation of energy" and the related notion

that the universe is composed of a finite number of discrete calories, watts, or what-have-you, are absurdities superimposed upon science. What we view as energetic phenomena have a proper geometric interpretation within the context of a negentropic continuous manifold. That interpretation is the interpretation of the functions of ratio of free energy to energy of the system which coheres with the geometric view of such a negentropic manifold. The energy of the system reflects action characterized by functions of $(n + 1)/n$ in respect to space of order n . The transformation of the system to one of order $n + 1$ from one of order n is the only net work performed by the system, the free-energy of the system.

To attempt to adduce a unified field in terms of naive interpretations of the variables of the expression $E=mc^2$ is to exhibit the elementary fallacy of superimposing, exogenously, the misinterpreted metrical appearances of action in the discrete manifold upon the continuous manifold. What we must measure within the experimental terms of reference of the discrete manifold is not

$$ds = \sqrt{\sum_{i=1}^n dx_i^2}, \text{ but the value of } d^2s \text{ for the condition}$$

that the physical phase-space of action increases its order from n to $n + 1$. This is the only aspect of the discrete manifold whose metrical projective characteristics could be in congruence with the characteristic form of action in a continuous manifold.

To Christian theology, such developments within science are matters of old knowledge. Riemann's standpoint reflects the arguments against the fallacy of the "big bang" portrayal of creation by Philo of Alexandria. The action of n into $n + 1$ defines the universe as a continuing creation, in which the principle of creation is continually efficient, and is ordered in a manner comprehensible to mankind as lawful, rational. This action is subsumed by a higher principle, transfinite with respect to all subsumed actions of the series, in Cantor's definition of transfiniteness. Yet, all this is nothing but the theological comprehension of the ontologically primary, highest ontological order of that which expresses the perfect consubstantiality of the Trinity.

The task of ordering of development of society is that of ordering the progress of development of human labor to such effect that man's willfully ordered practice is brought into accord with that perfect consubstantiality. Although it is readily demonstrated, in the manner we have indicated, that the perpetuation of

human existence requires submission to the injunction to be fruitful, to multiply and to exert dominion over nature, the ultimate purpose of this mode of perpetuation of human existence is to develop the individual into a more perfect state of accord with the principle of consubstantiality.

It is from that vantage-point, and only that higher vantage-point, that the practice of statecraft is adequately informed.

Application

The case for Riemannian physics as the author has summarized the most crucial points here, informs us properly that such physics is an approximation of the notion of the hypothesis of the higher hypothesis. Therein, from that standpoint, lies its proper application.

If one attempts to describe an economy in terms of post-war varieties of input-output analysis, it becomes clear to the careful observer very quickly that no analysis of an economy in terms of systems of simultaneous linear equations is competent. To the extent such input-output mappings of the economic process have any empirical applicability, those mappings are limited to relative short intervals. Thus, in the case of a developing economy, for example, analysis requires a series of input-output models. Designating any arbitrary such model by the denotation a_i , for the series $1, 2, 3, \dots, i, \dots, n$, we have the series of successive input-output tables $a_1, a_2, a_3, \dots, a_i, \dots, a_n$. Each of these is distinguished from the others by a different composition of the totality of rows and columns, and different values for the coefficients associated with each common row or column. Hence, actual economic processes are described as “non-linear.”

What we require, to solve such a “non-linear” problem in analysis, is a method for adducing a constant “factor” of change determining the transformation of the economy from congruence with one to the next of such a series of input-output tables. That “factor,” that adduced principle of ordered enumerability, is the transfinite we have defined as technology. It is only when we refine the proper usage of Leibniz’s notion of technology as a transfinite in that sense that the notion of technology acquires the quality of “nameability,” of conceptual definiteness as a conception, we require.

The notion of the function of $(n + m)/n$ as related to potential relative population-density, the equivalence of a function of $S'/(C + V)$ as we have indicated that function, and the required rise in energy-density

per-capita and energy-flux-density of heat-sources, is the approach required to adduce the notion of technology.

But, wait! To what result are we leading by such inquiry? We must situate such a notion of the economic process within the universe, within the lawful ordering of the universe.

When mankind increases its productivity, its potential relative population-density, man is demonstrating an increased power over nature. He is demonstrating a more perfect mastery of the lawful composition of the universe. Yet, each definite phase of progress in knowledge for willful practice in this sequence is in and of itself an imperfect ephemeral. Truth does not lie in ephemerals. Whence lies truth in scientific progress, if no one, ephemeral phase of such progress represents truth in and of itself?

Truth lies only in that adducible ordering-principle efficiently common, as a principle of hypothesis, to successive advances in the power of human practice. Truth lies only in those adducible principles of sufficient reason which underlie successive successful scientific revolutions, as a notion of hypothesis which is transfinite with respect to each and all of the scientific revolutions it subsumes.

What, from the vantage-point of such a transfinite principle of sufficient reason, is the lawful composition of our universe? What is it that we must master to increase our mastery over nature?

Science, so defined, and technological progress, as the predicate of science in the form of human labor, are congruent. The principle of sufficient reason and the principle underlying technological progress are reflections of one and the same principle.

To analyze the economic process, therefore, we must analyze the efficient action of technological progress as a reflection of the negentropic ordering of the universe as a whole. Conversely, since increase of mankind’s potential relative population-density is the only possible form of proof of what we called scientific knowledge, the lawful ordering of the universe must be nothing other than what technological progress in increasing the potential relative population-density of society proves to us must be the lawful ordering of the universe.

Economic science, so construed, is the highest expression and authority for physical science.

There may be other values some might choose to project upon the economic process, but they are false and immoral in consequence as guides to the policy of practice of the human species.

LaRouche's Physical-Economic Method and a New Bretton Woods System

by Paul Gallagher

Feb. 15—Most of the world's economy is now in what has been dubbed a “manufacturing recession,” provoking greater and greater dangers in the hyperinflated bubble of (especially) corporate debt resting on top of declining real production.

But in fact, the economic history of the United States and major Western European industrial countries *since the early 1970s* has been that of an extended general economic decline and continuous deindustrialization, marked by stagnant labor productivity, decline in the labor forces' share of claimed GDP, and general lack of investment in new basic economic infrastructure, let alone “science driver” missions transforming infrastructure with new technologies.

Most of that 50-year period of decline has also been marked by more and more frequent financial crises and crashes. If this long decline “paused” in the 1990s, it was due to the sudden ability during that decade, brutally to loot the industrial and mineral wealth, and labor power, of Russia and the former COMECON countries; and, for a period, to exploit a large and low-wage manufacturing labor force in China.

This half-century since roughly 1973 has been, for the industrialized economies, entirely different from—in fact, opposite to—the previous 40 years for the United States, 30 years for Europe. The downward turning point was the abandonment of President Franklin Roosevelt's post-War Bretton Woods System of currency and credit. This fact has long been obvious but is denied by the forces of the City of London and Wall Street which broke Bretton Woods; they insist that the “floating-exchange-rate” currency speculation system they replaced it with, is the sole monetary system which can exist in modern human society.



Henry Morganthau, U.S. Secretary of the Treasury and Conference President, opening a session of the 1944 International Monetary Conference at the Mount Washington Hotel in Bretton Woods, New Hampshire.

Courtesy of the Mount Washington Hotel & Resort

The late economist and statesman Lyndon LaRouche forecast publicly during the later 1960s that this disastrous turning point was looming, and publicly explained why, pointing to British monetary maneuvers. Then on Sunday, August 15, 1971, President Richard Nixon announced the U.S. dollar was no longer linked to a gold reserve. Immediately, LaRouche fairly shouted from the rooftops—beginning with his “Nixon Pulls the Plug” front-page *New Solidarity* feature that week—that the turning point had arrived and unless the action was immediately reversed, deep economic austerity was coming and even threatened fascist forms of looting of the American labor force. When a leading London-trained economist then lost a major New York City College debate with LaRouche before hundreds of students and professors, about these events and what caused them, economists were warned to engage no more with LaRouche on this or related subjects.

The Bretton Woods System's strict rules featured fixed and stable exchange rates, capital controls in most



Front page of the LaRouche movement's *New Solidarity* newspaper, Aug. 31-Sept 3, 1971.

nations and exchange controls in some, and bank separation (other major industrial nations imitated the U.S. Glass-Steagall Act). Its purpose was to prevent international capital flows for speculation, and to direct them instead into capital goods exports to developing countries. The Bretton Woods System vanished within two years of Nixon's forced dollar-gold reserve split in 1971, opening the half century of deindustrialization, financial blowups, and steady disappearance of productivity growth.

Economic Day and Night

The Bretton Woods System was not fully what President Franklin Roosevelt—who died as it was being launched—had intended it to be. Its anti-speculative monetary rules led to an extraordinary *average* economic growth rate of 4%/year for the developed industrial countries from 1947 until the end of the 1960s. Newly reindustrializing countries such as Japan and South Korea grew even faster. But it has been shown (see below) that the more important “half” of the intended Bretton Woods System was the intended major technological and industrial projects in developing countries, causing capital to flow as capital goods exports to those countries. This was supposed to be centered on the World Bank (Inter-

tional Bank for Reconstruction and Development), which was to receive capital in issuances of gold reserve-stabilized currencies of member nations, to invest in low-cost or concessionary loans for those projects.

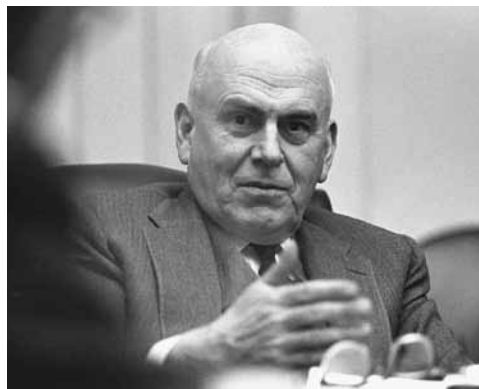
But it did not perform this function. After Roosevelt's death Wall Street's John J. McCloy was made its first Executive Director, and fully adopted the British view of the World Bank, that it should mobilize private international investment in developing countries, not make them itself. John Maynard Keynes had not even wanted developing nations to attend the 1944 Bretton Woods Conference. Economic growth in developing countries from 1947-70 averaged about 3%, so the expectation of high growth rates in developing nations was not met.

Bretton Woods was destroyed by the rapid development through the 1960s of the City of London as a global center for speculation in sovereign and large corporate debt. This was done using capital lured out of the United States and other countries—by breaking the Bretton Woods rules, ignoring America's capital controls and interest rate limits—to issue *high-interest* loans to Third World countries and Mideast oil states. With this and other tactics warned of by Lyndon La-

Rouche when they were used in the later 1960s, the City and its “Eurodollar” and “petrodollar” loan markets broke the gold-reserve, dollar-centered system.

Physical-economic deterioration in the United States and Western European economies began immediately, aside from the fact that 4% average annual GDP growth has not been seen again anywhere among them since that time. In the United States labor productivity fell

quickly from the 3-4% annual growth of 1935-65, to about 2% or less. Productivity increases caused by new technology fell from 2-3% annual growth or higher from 1930-70, to about 1% per year since then, according to the National Bureau of Economic Research's current approach to “multifactor productivity.” Federal investment in infrastructure, fell from 2-3% of GDP during 1935-65, to 1.3% in 2010 and is less than 1%



John J. McCloy

LBJ Library

now. The number of scientists and engineers employed in energy-related fields multiplied by 13 times from 1935-75, and has not risen since. And critically, Federal funding of research and development, which essentially did not exist before the mobilization for World War II, rose to approximately 2% of U.S. GDP from 1955-70, and has now fallen all the way back down to 0.7% of GDP.

Some of the other very negative effects of the destruction of Bretton Woods, directly flowing from those just described, are shown in **Figure 1**.

Exporting the TVA

A Canadian participant in the 1944 Bretton Woods Conference, Harvard economics professor Alvin Hansen, wrote:

This looks to be the opening for that new imperialism which one hears about these days—a TVA imperialism. The new imperialists would have as objectives, not a high return on capital, but rather a flourishing trade built up on the basis that would be created by the rising standard of living in the capital-importing country.¹

The Roosevelt objective in Bretton Woods could be stated as *exporting the Tennessee Valley Authority* (TVA)—already during World War II becoming the most famous, probably the most successful economic and infrastructure development project in the world, and subsequently the most visited by foreign officials seeking guidance to recreate it at home. Within two weeks after the Japanese attack on Pearl Harbor, United States officials were circulating documents for post-War monetary arrangements which forecast what would become the American policy for the Bretton Woods Conference three years later. They already knew it, for a simple reason. Roosevelt’s administration had been conducting this “TVA” policy *during the pre-War decade* as its “Good Neighbor” policy with the nations of Latin America, working to establish sovereign cen-



Construction work at the TVA’s Douglas Hydroelectric Power Dam, on the French Broad River in Tennessee, June 1942. LoC

tral banks in those nations, and have credit from the United States join with them in an “Inter-American Bank” (IAB) network to fund major development projects.

Undersecretary of State Sumner Welles described the IAB:

Its principal importance will lie in investigating and facilitating rather long-term development projects in other American republics; [only secondary would be] the extension of shorter-term facilities to the monetary authorities of the hemisphere to assist them in eliminating seasonal and temporary fluctuations in their exchanges.²

A Harvard professor working for the Administration on developing the IAB, wrote that its projects would not necessarily produce much return on the credit invested (i.e., much of the credit would be concessionary), but

Without these projects private investment, industrialization and agricultural diversification would be impossible, and ... there could not be the increase in productivity and standard of

1. Quoted in Eric Helleiner, *Forgotten Foundations of Bretton Woods*, Cornell Paperbacks, 2016. p. 217.

2. *Ibid*, p. 64.

living which these basic development projects make possible.³

This was the task given the World Bank by Roosevelt's design for the Bretton Woods System. Richard Freeman recently described in detail in *EIR* how this task was successfully carried out between the Roosevelt Administration and Brazil during the 1930s Good Neighbor Policy period.⁴ The concept of "exporting the TVA" is particularly notable in that process as he describes it.

Infrastructure Technology Breakthrough

The TVA's transformation of a four-state region in the American South has been described many times, a productive miracle by which the poorest, least educated, least healthy section of nation became more well-off than most.

At its core was a technologically revolutionary, fully interlinked and centrally controlled network consisting of 30 multipurpose dams—high dams mainly on many the tributaries of the Tennessee and Cumberland Rivers, which managed water use and flood control and produced electricity—and 17 flood control/navigation dams on the main rivers themselves. They completely controlled flooding over a very broad and very high-rainfall area watered by the Tennessee, Lower Mississippi and Lower Ohio Rivers; allowed navigation; provided irrigation if needed; and produced power. These purposes had never before all been combined in one system of dams, and this was a focus of President John F. Kennedy's frequent praise and evocation of the TVA a generation later. The TVA was developed in the same period as the Roosevelt Administration's other huge hydroelectric dam projects—the Boulder or Hoover Dam, and the Bonneville and Grand Coulee Dams—but was a technological breakthrough relative to them.

But what was the effect of these great projects and this technological advance on the entire U.S. economy, for the following generations? The economic method of Lyndon LaRouche can answer this question. This will also indicate the great potential, now, of a *new* Bretton Woods credit system initiated by the United States,



U.S. Bureau of Reclamation

The Hoover Hydroelectric Power Dam, on the Colorado River, completed in 1936, shown releasing an outflow after a test.

Russia, China and India, which will go beyond the obvious success of the original Bretton Woods System for the industrial nations, to include Roosevelt's "export the TVA" policy for the developing nations.

LaRouche stated (here, once of many times) economic principles of Alexander Hamilton which he accepted and to which he richly added content:

As stressed by U.S. Treasury Secretary Alexander Hamilton, there are two keys to the development of a poorly developed land area into a prosperous economy. On the one side, there is basic economic infrastructure: public transportation, water management (both latter substantially public works), and energy supplies. The other side, is what Hamilton identified as "artificial labor": the increase of the productive powers of labor (per capita, and per square kilometer) through investment in scientific and technological progress.⁵

5. Lyndon LaRouche, "When Franklin Roosevelt Was Interrupted"; *EIR*, Vol. 25, No. 28, July 17, 1998, p. 23.

3. *Ibid.*, p. 119.

4. Richard Freeman, "The Good Neighbor Policy and Brazil: Roosevelt's Bold Creation of the Anti-Entropic Bretton Woods System," *EIR* Vol.46, No. 35, September 6, 2019, pp. 22-40. https://larouchepub.com/other/2019/4635-roosevelt_s_bold_creation_of_t.html

Hamilton said this progress is the fruit of encouragement of human inventiveness, by protective patents and by national bank credit for new “internal improvements”—infrastructures—and new manufacturing methods.

Roosevelt’s great projects succeeded precisely because of the Hamiltonian intention embedded in their creation and functioning. The TVA had a profound effect on the United States production of electricity, even as the nation’s rural areas were being electrified for the first time. In the period 1935-40 the share of electric power in the economy generated annually by hydroelectric dams reached 40%, from less than 15% two decades earlier; the TVA was by far the nation’s largest electricity supplier with 17 gigawatts of installed power capacity at that time, all from hydroelectric dams.

The 1930-40 surge to dominance of a new source of electric power, with a power efficiency twice that of other sources at that time, occurred because of the large-scale issuance of credit for new infrastructure, under the recovery acts and public works acts of the President and Congress and through the Reconstruction Finance Corporation. It was the Roosevelt Administration’s intention to do the same thing in Latin America, especially with credits to Brazil,⁶ and then it became FDR’s intention for the post-War Bretton Woods system.

The result was a strong surge in the technological capabilities of the capital goods with which the American labor force worked, and in the productivity of that labor force.

The technological significance of this sudden dominance of advanced hydroelectric infrastructure can be indicated by the following:

With simple water power: Water drives a wheel with vanes (elongated cups very precisely shaped) in a circle, converting the energy of the flowing water into rotational machine power, driving factory belts, etc. Energy conversion efficiency, with overshot water wheels, can be very high (ca. 90%); the limitation is that the portion of water flow energy which reaches the



LoC

A large electric phosphate smelting furnace used in the making of elemental phosphorus, in a TVA chemical plant in the Muscle Shoals area, Alabama, June 1942.

vanes is very small, and a very large infrastructural system must be built to use any substantial volume of water for power.

With steam power, using any energy source (fuel): Steam likewise drives a turbine, with similar vanes, in a circle. The energy of the steam is much higher and more focused, the energy efficiency (conversion to power) much lower than with water wheels. So balanced, the two technologies—water and steam power—overlapped for much of the 19th Century.

With hydroelectric power plants, which first spread in the United States in the 1880s: Again, water moves a very large turbine with vanes in a circle. But now this is combined with the discovered electromagnetic principle (the turbine rotates magnets around a wire coil), and the resulting electricity exhibits six times the efficiency of energy conversion to power, of the water wheel. So less water was used to produce far more power. Furthermore the power grid for distribution of the electricity produced, takes up much less space than do millraces for water, and can supply large amounts of electricity to large numbers of industrial or household users per square kilometer of the nation’s territory.

This efficiency of conversion of energy to the universal machine tool—electric power—can be com-

6. Richard Freeman, *op cit*.

bined with the metric of how much of that power is generated *in a given time*, say, a year, to give an idea of power efficiency—electric power generation and use in an average year relative to energy input. “Availability” here means roughly how much of the time these power sources are generating on line:

Hydropower: (energy efficiency of 80-90%) × (availability, with very conservative 2006-16 figures of 70%) = power efficiency of 60%.

Nuclear reactors: (energy efficiency of 35%) × (availability of 85-90%) = power efficiency of 30%.

Coal and oil-fired power: (energy efficiency of 37%) × (availability of 75%) = power efficiency of 28%.

Wind turbines: (energy efficiency of up to 45%) × (availability of 20%) = power efficiency of up to 9%.

Solar farms: (energy efficiency of 20%) × (availability of 20%) = power efficiency of 4%.

When we also take into account the size (and associated labor costs) of the fuel and power infrastructure which must be built to generate and transmit a given amount of electricity for use in a given amount of time, nuclear power—with large energies being emitted by extremely small amounts of fuel—surpasses coal and oil. Wind and solar become almost *de minimus* because of the large land areas required to use attenuated and intermittent fuels, and to transmit the resulting electricity for use in population or industrial centers.

By electric power transmitted per square kilometer of the power infrastructure, per unit of time, we roughly express Lyndon LaRouche’s specification of the “energy-flux density” of a power source. This is related to the energy-flux density of other machine tools powered by the produced electricity, and also to the ability to give a higher, more “electrified” standard of living to a more dense population per square kilometer. LaRouche said this capacity of technology, if sufficient capital or credit is invested in it, represents a change in “potential relative population density” afforded by infrastructure incorporating new technologies.

A simple 19th-Century example illustrates this.

The Illinois and Michigan Canal, which connected the Great Lakes (at Chicago, on Lake Michigan) to the Mississippi River Valley for the first time, was completed and opened in 1848. Chicago, prior to that time, in the 1830s, is shown in **Figure 1A**. Fifteen years after the canal opened, Chicago in 1862 is shown in **Figure 1B**. When the canal made it the nexus connecting the transport of every variety of tools, machinery, agricultural production, ores, etc. between these two mighty water systems—and moreover, no longer subject to regular flooding—Chicago’s *relative* population density immediately became far too low (Figure 1A) relative to the

FIGURE 1A



A postcard depicting Wolf's Point at the Junction of the two branches of the Chicago River, Chicago, Illinois, 1832.

FIGURE 1B



Chicago Historical Society

A bird's eye view of Chicago, only 25 years after the postcard above. From a lithograph by Christian Inger, based on a drawing by I. T. Palmatary, published by Braunhold & Sonne, 1857.

potential population density afforded by the geography and infrastructural technology now at hand. Not for long; it grew overnight to a major city (Figure 1B) reflecting the new potential relative population density as defined by LaRouche.

Workforce Transformation

One requirement for the rising potential relative population density of an area, or nation, is the economy's capacity to provide a rising living standard, and thus a potentially higher productivity, to the expanding productive workforce of that area or nation. This makes the relative population density a function of one part of the output of the economy, namely what LaRouche called "variable capital" or "V".

LaRouche explained, later in the same 1998 document quoted above in which he discussed Hamilton's principles:

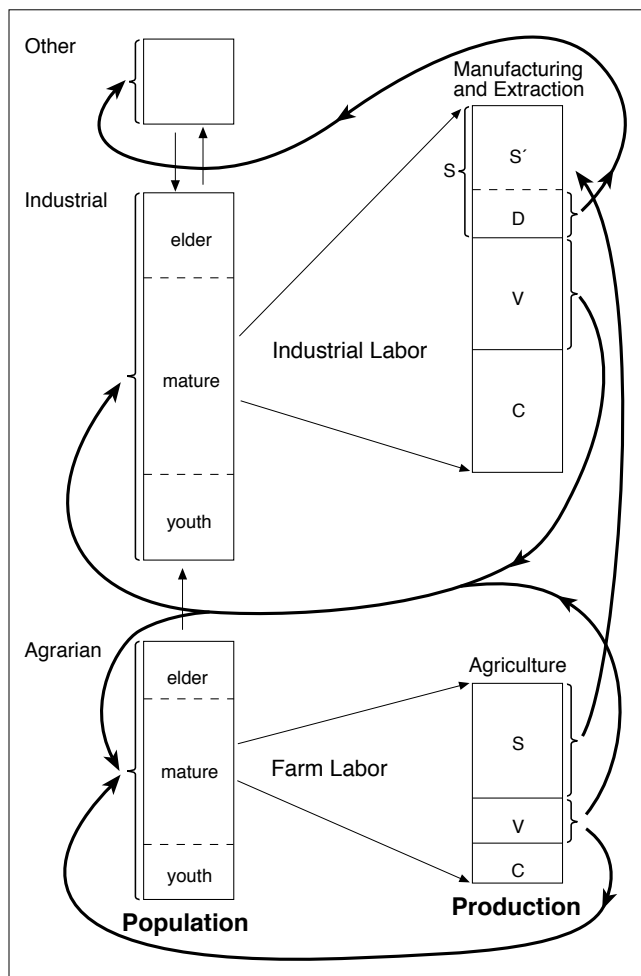
Take the total per-capita output of productive labor (labor directly employed in agricultural and industrial products, or, in engineering and related services essential to the physical maintenance of productive capacity and product quality): "T" = "Total." Compare ... this total labor output with the ration of physical goods and related essential services required to maintain the labor force [itself] at the existing level of skill and productivity (the British "classical" economists' and Marx's "Variable Capital," or "V").

The suddenly dense and bustling population of Chicago in the example above could thus be taken as an indication of a dramatic increase in "V" as an output of the economy of the area, clearly resulting from the canal.

In a similar way, compare, as capital costs, the ration of total output required for basic economic infrastructure, plus the ration required as production and closely related capital (similarly, "C" = "Constant Capital"). The latter includes the required flow of goods in intermediate states, as required to maintain current output...

Include "d," as the general overhead expense of society, apart from V and C. Then subtract $d+V+C$ from $T = P'$ (margin of physical-economic profit).

Physical Economics Flowchart



Not financial profit, but physical economic profit or "free energy" of the productive economy. LaRouche has thus broken down the economy's total output into those portions of economic activity it supports: the portion that goes to households or otherwise maintains the working population; the portion that maintains, operates, repairs, replaces basic infrastructure and production capital at least at a constant level; the portion that supports overhead which is not involved in production but may be necessary to it, such as education and medical care; and the portion of output which constitutes "free energy" available for *change* going into the next cycle of production.

He concludes that for actual physical-economic growth or progress, three inequalities must be present:

It is required: $P'/(C+V)$ increases, as the ratio C/V increases, and the physical-economic con-

tent of V , per capita, also increases. In part, the margin of gain of $P'/(C+V)$ is the result of development of basic economic infrastructure; in the final analysis, all gain, including that from development of infrastructure, depends upon the impact of investment in scientific and technological progress.⁷

This sequence of “inequalities” required for physical-economic progress can be shown by the economic timetable in **Figure 2**. This is drawn to illustrate the impact on the entire economy and labor force, of the revolutions in electric power technology over 1935-75 in the American economy: First, the “TVA” jump from fossil-fuel power dominance to relative dominance of the more power-efficient hydroelectric power; and then second, the transition (briefly, unfortunately) to the still more power-efficient nuclear power. These can be called platforms of energy technology. It can be shown that the first directly made the second possible.

The table shows 110 years of power data for the U.S. economy in five-year intervals. The 1935-75 period is when the technological transitions had strongest effect—the period often referred to by economists as “the golden age of productivity” in the United States’ last 150 years. The end of that period coincides almost exactly with the abandonment of Bretton Woods and establishment of the “floating-exchange-rate” system.

The absolute figures for physical-economic production inserted in the boxes are not comparable from row to row. So all of them are re-expressed—by the shading—as rates of change which can be compared. Unshaded five-year periods showed a slow increase, less than 25%; lightly shaded periods, a relatively rapid increase, by 25-50% for the five year interval; and darkly shaded periods, very rapid growth for any physical-economic parameter, more than 50%. Five-year periods of actual *decline* are indicated putting the absolute figure in *italics*.

The first two rows concern elements of what we described above as LaRouche’s “energy-flux density” metric. These parameters already define 1935-50 and 1960-70 as periods of rapid increase of energy throughput and energy conversion efficiency in the U.S. economy—the surge in hydropower, and the later

surge in nuclear power. Between them is a period of slow growth in energy throughput, and stagnation of energy efficiency, in which electric power expansion was in coal- and oil-fired plants—many of them again built by the TVA.

The third row is an expression of the “ V ” or “Variable Capital” defined by LaRouche: the size of the productive workforce in millions (manufacturing, mining, construction, transport, utilities and agricultural workers) multiplied by the Production Workers Real Wage Index published in the *Statistical Abstract of the United States (Census)* until 2005. For example, for 1970, the year in which that Index was reset equal to 1 by the Census, the number of productive workers was 28.2 million, and the product of 28.2×1 is shown. This row is an approximation of the varying rate of growth of “ V ,” the economic output which was maintaining the productive workforce at a generally rising standard of living. And it defines essentially the same two periods of rapid growth above—for “ V ,” one period of very rapid growth, which obviously includes the mobilization for World War II, but continued through its end.

The row expressing “ C ,” or “Constant Capital” is limited to the core of that productive capital in any modern economy—electric power. The parameter is not installed power capacity, but rather power generation and use per year, in terawatt-hours. (Recall that LaRouche specified above that “ C ” is an economic output and “includes the required flow of goods in intermediate states, as required to maintain current output.”) Here the entire period 1935-75 is characterized by very rapid growth, faster overall than the growth of “ V ”.

Indeed, in the next row the first expression of the economic output ratio “ C/V ” (power generation and use per capita per year in megawatt-hours) shows the same very rapid growth throughout the period with just one brief interval of merely rapid growth. And the second, more rigorous approximation of LaRouche’s ratio “ C/V ”—power generation and use per productive worker per year in megawatt-hours—shows almost the same accelerating rate of growth throughout the same period.

Again, for a simple approximation, we are dealing here not with LaRouche’s “ C ” as a whole, but only with the prime modern capital good, electric power generation, transmission and use. But it is clear, given

7. Lyndon LaRouche, *op. cit.*, p. 24

the United States' ability during this period to produce the World War II allies' global logistics for the victory over fascism, and shortly thereafter to explore the Moon, that these rates of growth extended to capital goods generally, including new infrastructure in areas other than electric power.

Two of LaRouche's three "inequalities" required for physical economic growth were met during this period, which ended with the destruction of the Bretton Woods System. They are: that "V" grow at a generally increasing rate, and that "C" grow more rapidly than "V"; and therefore that "C/V" increase.

To summarize over the period 1930-50, for example, the American productive workforce grew by 50%; but power generation and use per capita per year grew by 180%; and power generation and use per productive worker grew by 160% from 4.48 Mwh to 10.58 Mwh per year. Again from 1960-75, "V" grew by 50%, "C/V" as per capita electric power generation and transmission by 140% and "C/V" as power use per productive worker by 180%.

Forms of P' in the 'TVA Revolution'

The nature of LaRouche's $P' = T - (C + V + d)$, where d is the growth of economic overhead, is that it can't be seen literally in the figures or rates of growth in the table. Rather, its operation is clearly shown between the periods of economic output. The productive workforce and its living standard (LaRouche's "V") could not be growing so from period to period, while capital goods output ("C") grows more rapidly and the ratio "C/V" even more rapidly, unless "P'"—productive surplus—were being produced in one period to be applied to both "C" and "V" in the next. "P'", though not nominally visible here, must be applied to hire more productive workers from the those unemployed or entering the workforce, to provide them more pay and benefits, to train them for more skilled, higher technology employment, to provide more capital goods for them to work with, and to provide "d," the economic overhead which includes educators at all levels, white collar workers in all fields, scientists in new fields, etc.



U.S. Army/James E. Westcott

A Manhattan Project facility. The K-25 plant, at Oak Ridge, Tennessee, completed in 1945. The plant used the gaseous diffusion method to separate uranium-235 from uranium-238, to make atom bombs.

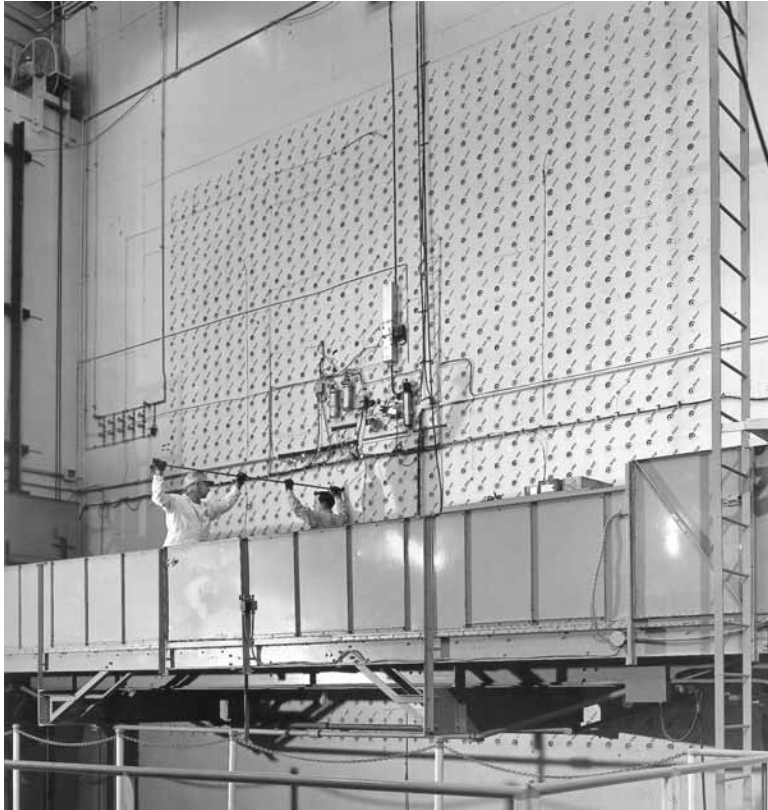
This can be seen abstractly in the second part (Productivity) of Figure 2, which shows that the period 1935-70 had a different character than these 110 years as a whole and why it is often called the golden age of U.S. productivity.

In an earlier paper, LaRouche commented:

Taking the society (economy) as a whole, this net increase [in free energy or "P'"—pbg] is the outcome of some increase in average level of technology of the economy as a whole. This may be accomplished either by introducing new, more advanced technologies, or by replacing obsolete capital stocks with competitively modern capital stocks, or by increasing the average level of productivity of the entire labor force through productive employment of significant portions of the unemployed, or some combination of these measures. All things being equal, in the longer run, it must be based on introduction of more advanced technologies.

Can we be specific? What form does "P'" take for this period which we could call, for shorthand, the "TVA revolution" in electric power technology?

First, waves of new scientists and engineers (who



U.S. Army/James E. Westcott

A Manhattan Project facility. Workers loading uranium slugs into the X-10 Graphite Reactor's concrete face, Oak Ridge, Tennessee, ca. 1943.

in each following period of production became part of “d,” existing economic overhead, or of “V,” the productive workforce) to work on the *next* revolutionary infrastructure-technology platform, nuclear power. Virtually overnight from 1940-44, some 110,000 scientists, engineers and increasingly skilled workers were employed in the Manhattan Project which developed the atomic weapon and led through Manhattan Project lab reactors and then submarine power reactors to civilian power reactors. The great majority of these were employed at the Oak Ridge nuclear fuel development site in Tennessee and the Hanford Nuclear Reservation in Washington State, using huge amounts of hydroelectric power from the TVA and the new upper Northwest hydroelectric projects.

This rapid growth of “P” in human form was repeated from 1960-70 when 400,000 people suddenly were employed in the Apollo Project, a great proportion of them engineers and scientists and mathematicians. The third part of Figure 2, at the bottom, shows this rapid 1940-75 creation of, eventually, millions of

scientists and engineers beginning with the Manhattan Project, before which there were not many more than 100,000 working in the entire economy.

Second, Federal investment in scientific research and development of new technologies. This appeared as a completely new economic phenomenon during the New Deal 1930s, first ranging from 0.3-0.5% of GDP, then reaching 2.0% of GDP in the decade of the 1960s. After the destruction of the Bretton Woods System in 1971-73 came the long and steady atrophy bemoaned by the authors of *Jump-Starting America*.

Third, entirely new, electricity-intensive industries involving the creation of new forms of “C” and new levels of “V,” such as the aluminum industry centered in the Northwest, and with it a greatly expanded aircraft industry; the foundations of computing and simulation technologies; relativistic-beam technologies such as radar and lasers; etc.

Fourth, the *potential* of nuclear power, and the actual creation of 100 gigawatts of this most reliable and energy-flux-dense source of electrical power, not to mention nuclear sea- and potential nuclear space propulsion.⁸

Credit in the New Bretton Woods

It was this process of physical-economic advance which Franklin Roosevelt's planned Bretton Woods System intended to bring into developing countries of Latin America (where it had already had an impact), Africa, and Asia by, in effect, “exporting the TVA.”

Now after an even longer “floating-exchange-rate” period of deindustrialization, rampant financial specu-

8. With respect to LaRouche's unique concept of potential relative population density: It is clear that these electric-powered breakthroughs, with “C” overall increasing 2-4 times as rapidly as a rising “V,” not only allowed continuous creation of physical-economic free energy or surplus, “P”; they also initially left actual population growth behind, so that population density fell *relative* to its increasing potential. For the country as a whole, during the 20 years 1930-50 when kilowatt-hours per capita, per sq. km and per productive worker all rose by more than 200%, population grew just 15%, from 130 to 150 million. But in the next 20 years, 1950-70, it grew by 50 million or 33%, “catching up” to the rising potential population density as in the simple 1850s Chicago example.

lation at the expense of productive investment, and increasingly frequent financial crashes, a new Bretton Woods is urgently needed in which the mechanism of joint development credits from the initiating countries must function. Those countries must include the United States, Russia, China and India, and *not* the United Kingdom/City of London, which will fully brought down the original Bretton Woods.

These initiating nations' objective is not only to drive international industrial and agricultural progress in third countries. It is also to work jointly on the next fundamentally new infrastructure platforms, including the international crash program for fusion power called for July 9, 2019 by President Vladimir Putin of Russia, and widespread space travel and development of bodies in the Solar System.

Money credit is not part of the physical-economic process of science-driven anti-entropic growth described above. It is its necessary accompaniment and



Horatio Stone, 1868
*Statue of Alexander Hamilton in the U.S.
Capitol Rotunda, Washington, D.C.*

assistant. Alexander Hamilton put it in the simplest way, writing to Gouverneur Morris in 1781 that the purpose of banks is “to put the savings of the nation at the disposal of those able to use it most productively” to develop inventions and manufactures.

That is commercial banking. Hamilton developed the new idea of national banking—the essential liaison between government Treasury operations and private commercial banks—that its purpose is to *multiply* the savings of the nation for the same purpose, effectively leveraging the future savings and tax payments in order to provide large amounts of additional credit to drive industrial and infrastructural development.

Since his first [proposal](#) of an International Development Bank (IDB) to the Non-Aligned Nations' Colombo Conference of 1976, Lyndon LaRouche proposed that such IDBs—necessarily joint efforts of *national* banking and credit institutions—can combine their issuances of credit for the most productive “great projects” of new infrastructure and high-technology capital goods exports to developing countries. Such issuances of currency are debts of the issuing governments “to the future,” ultimately to be repaid by advancing productivity.

In the immediate wake of the destruction of the Bretton Woods System, LaRouche made proposals for the United States to use new currency issues to place the dollar back on a gold-reserve basis. From the 1990s until his death, he proposed the full reconstruction of the Bretton Woods System, including its fixed-exchange-rates and controls—and the Glass-Steagall bank separation principle—by these four leading science and technology powers.



Kremlin.ru
*Russian President Vladimir Putin (front right) at the INNOPROM-2019
International Industrial Trade Fair in Yekaterinburg, Russia, July 9, 2019.*

FIGURE 2

Electrical Energy and Physical Economic Measures of Growth, 1900-2010

Year	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005	2010
Throughput of energy (mill. BTU/capita)	125	155	178	190	195	190	150	190	230	220	235	250	300	340	335	320	340	350	350	340	335	310
% of energy which is electric power	—	—	—	—	—	10.1	8.1	12.9	15.7	16.1	15.1	16.6	21.2	25.5	30.8	32.3	35.8	36.0	38.1	38.1	38.3	38.2
V (prod. work force [millions] X real wages of prod. wks [1970 = 1])	—	—	—	2.80	3.25	3.40	2.75	5.10	12.6	20.3	18.1	18.0	22.2	28.2	26.8	26.2	26.9	25.7	26.5	28.0	25.5	21.2
C power gen & use (TWh/year)	—	14.16	31.04	43.33	67.75	94.65	98.46	144.9	222.0	329.0	540.0	730.0	1050	1525	2300	2350	2356	2810	2900	3,802	4,055	3,950
CIV power gen & use / capita (MWh/year)	.134	.154	.323	.436	.571	.782	.769	1.106	1.585	2.15	3.312	4.2	5.425	7.55	10.0	10.05	10.01	10.16	11.1	11.3	11.8	11.4
CIV power gen & use / prod. worker (MWh/year)	—	—	—	2.53	3.39	4.48	4.82	6.16	8.4	10.59	17.15	25.2	40.0	48.2	70.0	80.0	80.00	109.3	110.0	135.7	159.0	188.0
Year	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005	2010

Productivity

Year	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005	2010
Labor productivity (% ann. growth)	—	—	—	—	—	2.8	2.6	3.2	3.8	3.0	3.1	3.3	3.0	2.2	1.4	1.0	2.3	2.0	1.3	3.3	2.0	1.7
Multi-factor productivity (% ann. growth)	1.0	1.3	1.3	1.0	2.0	2.0	3.3	3.3	3.1	2.8	2.0	2.0	2.7	2.7	0.9	0.9	0.95	1.0	1.0	1.2	1.0	1.0

Increases & New Categories of P¹

Year	1900	1905	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	1965	1970	1975	1980	1985	1990	1995	2000	2005	2010
D Scientists & engineers (1000s)	—	—	—	—	—	—	126	146	132	189	311	384	524	764	1,100	1,430	2,708	2,808	3,625	3,586	2,963	2,477	2,671
D Federal R&D spending (% of GDP)	—	—	—	—	—	—	—	—	0.4	0.3	0.5	0.4	0.5	1.7	2.0	2.0	1.1	1.1	1.2	0.9	0.75	0.95	1.0

The source for data from 1920-2010 is the U.S. Statistical Abstract (Census) in five-year intervals. Earlier data on energy throughput is from Energy Information Agency. Labor productivity is from the Bureau of Labor Statistics. Multi-factor productivity is from the Commerce Department Bureau of Economic Analysis. R&D spending data is from the Government Printing Office Historical Tables.

The absolute figures for physical-economic production inserted in the boxes are not comparable from row to row. All are re-expressed—by the shading—as rates of change which can be compared. Unshaded 5-year periods showed a slow increase, less than 25%; lightly shaded periods, a relatively rapid increase, 25-50%; and darkly shaded periods, very rapid growth for any physical-economic parameter; greater than 50%. Five-year periods of decline are indicated by the absolute figures in italics.

Indispensable Leadership

by Robert Ingraham

Feb. 14—Great change never occurs without true leadership. Leadership's wisdom and intervention is indispensable for human advancement. This then poses the questions: What is leadership? What defines its essence? Why is it so crucial? And most importantly, in the year 2020,—What does this mean for me and how I lead my life?

Since 2016 we have witnessed an unprecedented political ferment among the population,—a greatly heightened political awareness and activity among growing numbers of individuals. The most obvious manifestation of this is in the United States, but it is also true for many, many nations throughout the world. In fact, a careful examination of political and social activity from Argentina to Britain to the Philippines makes clear that what we are now experiencing is a near universal phenomenon of political awakening throughout the planet. New initiatives and new potentials are emerging every day in many nations.

Some would characterize this as a Mass Strike process. It is better described by the poet Percy Shelley as a time where the human individual experiences “an accumulation of the power of communicating and receiving intense and impassioned conceptions respecting man and nature.” Countless numbers of people have become alive to the possibility of world-historical change, and they are discovering previously untapped resources within themselves to act upon the future.

If we are to succeed in accomplishing a great change for the better, however, it is of paramount importance to recognize that this recent up-tick in political morality among the people represents only a great potential,—a

very welcome development, but one which can only be brought to victory if growing numbers of people develop within themselves the courage and the abilities to lead.

Today, we see such qualities emanating from a number of world leaders. If one looks at three recent speeches by President Donald Trump,—at the United Nations (September 24, 2019); at the World Economic Forum at Davos (January 20, 2020); and at the March



White House/Joyce N. Boghosian

President Donald J. Trump delivering remarks at the 47th Annual March for Life gathering at the National Mall in Washington, D.C., January 24, 2020.

for Life rally (January 24, 2020)—these speeches, combined with Trump's Artemis initiative and his courageous fight against impeachment, represent a quality of active leadership that Americans have not seen in the White House in a long, long time.

Yet, leadership is not a quality relegated to only a chosen few; it is a compelling personal matter for each of us. If we are to win the fight before us, you can not afford to be a mere “supporter” or “follower.” Leadership is always in short supply, and victory is only possible if each of us accepts the challenge to lead,—and to



Junius Brutus Stearns

George Washington addressing the 1787 Constitutional Convention.

develop the creative abilities and courage to do so effectively.

In this regard, studying the lives and actions of heroic leaders from the past is of great value. In examining the life of someone like Abraham Lincoln, for example, unsettling challenges arise in one's heart and mind. In Lincoln or Washington we find great courage, yes, and also elevated morality. But there is also profound strategic judgement, an awareness of the battlefield and the axiomatic issues at stake. This is something that you have to work at, to strive to master. It is a life mission. This is also as true with music, science and economics as it is in the political realm.

In this paper, we offer an example of leadership in action. We present below the case of George Washington's intervention to prevent the destruction of the young American Republic. History never exactly repeats itself, and there is no precise parallel of the events of 1789-1793 with our present-day crisis; yet, the echoes from those days still reverberate, and they speak to us in a manner which will enlighten our efforts today and guide each of us to take the actions now required.

I. The Republic

Over a four-year period, from 1787 to 1791, perhaps the greatest political revolution in human history was accomplished. Commonplace opinion points to the

1776 Declaration of Independence and the Revolutionary War as the crowning achievement of that era, but it must be pointed out that throughout human history, there have been many revolutions; yet, none of them—up to that point—had produced a lasting republic. The American Revolution achieved independence, but it left the now free states in a condition of near anarchy and economic chaos.

In 1787 George Washington played a critical role in bringing into existence the Philadelphia Convention which would create the new Republic. He presided over that Convention, and his

allies Alexander Hamilton and Gouverneur Morris shepherded the new Constitution to its final form, including the Preamble, which defined the intention of the new Republic. Through 1788 they, and others, conducted an intensive campaign to educate the populace as to the principles embodied in the new proposed government. Through this effort the thinking and morality of countless individuals were uplifted, transformed by an appreciation of what the future might be.

Washington took office as President in 1789, and



The first Bank of the United States in Philadelphia, Pennsylvania.



Thomas Paine

Laurent Dabos



Marquis de Lafayette

Charles Willson Peale

for the next two years his most trusted cabinet official, Alexander Hamilton, effected a total revolution in economic and financial policy, one which created an entirely new system of sovereign Public Credit. This process culminated on February 25, 1791, when President Washington signed the legislation which brought the Bank of the United States into existence. A Republic that would guide its own destiny and utilize the power of Public Credit to the benefit of the General Welfare was now established.

II. The Trap of 1790-1791

Eleven weeks after the inauguration of George Washington, enraged mobs in the pay of the French-Swiss banker Jacques Necker stormed the Bastille, setting off the French Revolution. This event would not only initiate a nightmarish era for the people of France, it also established the blueprint which would be used to attack the newly created American Republic. In essence, the methods used to destroy France would be imported into the United States. This was Britain's answer to the adoption of the U.S. Constitution and the inauguration of George Washington.

In November of 1790 the British/Irish member of Parliament Edmund Burke published his *Reflections on the Revolution in France*, a rambling denunciation of the French Revolution and defense of British oligarchic

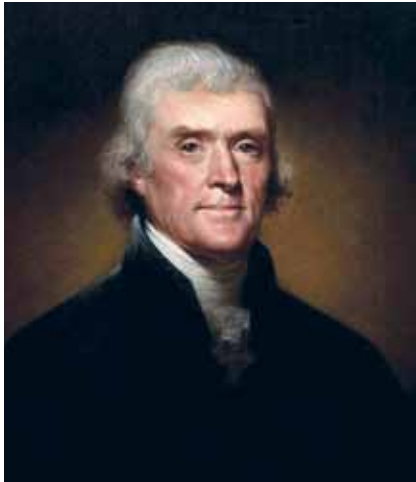
cal culture. One month later this pamphlet was answered by Mary Wollstonecraft in her *A Vindication of the Rights of Men*, in a *Letter to the Right Honourable Edmund Burke*, and in March 1791, the first edition of Thomas Paine's *The Rights of Man*, a work which excoriated Burke, was published.

This "pamphlet war," generated from within the British establishment, created a furor in Parliament, but its greatest impact was in the new United States. One of the reasons for this was that Burke had been a prominent British "friend of America" in the years from 1774 through 1783.

As early as 1764, Burke had allied with the Marquis of Rockingham to oppose the Stamp Act. In addition, he opposed the tax on tea, cultivated a relationship with Benjamin Franklin in London, and on April 19, 1774, he delivered the famous "Speech on American Taxation," in Parliament, calling for reconciliation with the colonies (a speech he delivered three days after a lengthy discussion with Franklin). From 1770 to 1775 he even served as the official agent for the colony of New York in Parliament, during which time he maintained an ongoing sympathetic communication with New York's Committee of Correspondence.

Thus when Burke, in his 1790 *Reflections*, condemned the French Revolution and unashamedly lauded the tradition of the British aristocracy, political shock waves were felt from Richmond to Boston. Later, as the French Revolution descended into savagery, with the September Massacres of 1792 and the unleashing of the Reign of Terror in 1793, Burke's work was deemed prophetic by Anglophiles on both sides of the Atlantic.

In 1791, Thomas Paine answered Burke with his *Rights of Man*. Drawing on the Rousseauian themes earlier presented by Jefferson and Lafayette in the 1789 *Declaration of the Rights of Man and of the Citizen*, Paine glorifies the French Revolution. His argument on behalf of unchecked human "liberty" is taken almost entirely from John Locke's *Two Treatises of*



Rembrandt Peale

Thomas Jefferson



John Vanderlyn

James Madison



Gilbert Stuart

James Monroe

Government. For Paine—and for Jefferson—liberty is defined by the unleashing and protection of individual human appetites,—in the here and now—as opposed to any notion of a higher conception of happiness, to be found in the creative advancement of human productivity, in the power and joy of acting upon the future.

Between 1787 and 1789, Paine, Jefferson and Lafayette were all in Paris and collaborating very closely. Lafayette and Jefferson actually co-authored the *Declaration of the Rights of Man and of the Citizen*,—adopted on August 26, 1789 by the French National Constituent Assembly—and both subsequently contributed to Paine’s *Rights of Man*. This was during the period in which Jefferson stated his opposition to the Constitution adopted at Philadelphia in 1787, and the above-named writings are rife with Jefferson’s notions of “resistance to tyranny,” “agrarian republicanism” and libertarian “individual rights.” The unfortunate 1789 *Declaration* was essentially Jefferson’s answer to the American Constitution. Gouverneur Morris, who arrived in Paris in 1789, repeatedly warned Lafayette concerning his association with Jefferson and Paine.

Thus, the trap was set. By 1791, the controversy between Burke and Paine (both British subjects) defined the new battle-lines. The choice, as they posed it, was to stand with revolutionary France, or to stand with oligarchical Britain. This dynamic, particularly after the French declaration of war against Britain on February 1, 1793, would play out in the United States

throughout the 1790s, exacerbated, in 1797, by the publication of the British/Scottish agent John Robison’s *Proofs of a Conspiracy*.

The intention was to tear apart the political and social fabric of the United States exactly as had been done in France.

III. The Attempted Counter-Revolution

In the United States, the insurrection against Constitutional government began on February 23, 1791, in response to Alexander Hamilton’s issuance of his *Opinion on the Constitutionality of a National Bank* and the signing into law two days later, by President Washington, the legislation creating the Bank of the United States.

The establishment of the National Bank and the creation of the system of sovereign Public Credit was violently opposed by Thomas Jefferson and James Madison, as well as Jefferson’s protégé, James Monroe. In June of 1791, Jefferson and Madison traveled to New York City to meet with Aaron Burr and Robert Livingston to plot a campaign to destroy Hamilton. Three months later, Jefferson began to establish a series of newspapers, beginning with the *National Gazette* in Philadelphia. Others, including the treasonous Philadelphia *Aurora*, soon followed.

From the beginning of this conspiracy, Jefferson and his underlings posed the issue as one of “republi-

canism,” as defined by the new revolutionary government in France, versus British-allied “monarchical” interests.

These were not simply “political differences.” This was the unleashing of an attempted counter-revolution. The immediate goal was to drive Hamilton from office, reverse his banking and credit policies, obliterate the intention of the Constitution, and import the Jacobin disease into the United States. Keep in mind that in 1791, the American Republic had been in existence for only *two years*. Jefferson’s intention was to overthrow constitutional government before it could take root.

Initially, Jefferson’s efforts were concentrated on driving a wedge between Hamilton and Washington. This effort escalated after the release of Hamilton’s *Report on the Subject of Manufactures* on December 5, 1791. On May 23, 1792, Jefferson sent a letter to President Washington, charging that the “ultimate objective” of Hamilton’s system was “to prepare the way for a change from the present republican form of government to that of a monarchy.”

In August of 1792, Jefferson sent another letter to Washington, this time denouncing Hamilton as “a man whose history, from the moment at which history can stoop to notice him, is a tissue of machinations against the liberty of the country.”

The anti-Hamilton vendetta would culminate in the December 1792-February 1793 effort to drive Hamilton from office. In January of 1793, Jefferson authored a Congressional resolution accusing Hamilton of violating numerous laws. A second, revised version of the resolution read, “Resolved, That the Secretary of the Treasury has been guilty of maladministration in the duties of his office, and should, in the opinion of Congress, be removed from his office by the President of the United States.” This was, in effect, an impeachment resolution, and it was set before the House of Representatives on February 27, 1793. It was soundly defeated, with only five votes, including that of James Madison, favoring it.

IV. The Genêt Flight Forward

The accusation against Hamilton as a pro-British “monarchist,” presented by Jefferson in his May 23, 1792 letter to Washington, soon became the rallying cry of the Jeffersonian party and was echoed, *ad nauseam*, in the *Gazette*, *Aurora* and other Jeffersonian outlets, from Georgia to New Hampshire. Rallies and demonstrations were organized in numerous cities to combat the monarchist threat, and by the spring of 1793, Jefferson began organizing “Democratic Societies,” modeled explicitly on the Jacobin Clubs in France.

The insurrection took a giant step forward with the arrival of Edmond-Charles Genêt as the new French Ambassador to the United States on April 8, 1793. Landing in Charleston, South Carolina, Genêt was given a hero’s welcome, organized by the local allies of Jefferson. In his first speech in America, Genêt called upon the United States to join France in its war against Britain. He then proceeded to recruit and arm privateers to join French expeditions against the British, and he organized American volunteers to fight the Spanish in Florida. He embarked on a tour of the eastern



Adolf Ulrich Wertmüller

Edmond-Charles Genêt

seaboard, with parades and dinners held in his honor. Everywhere he spoke, he called upon members of his audience to rise up against the Washington Administration, which was blocking a French-American military alliance.

In Philadelphia Genêt was feted by the city fathers, with dinners and rallies organized in his honor. Liberty poles were erected throughout the town, and *the Marseillaise* was sung by large crowds. Shortly after his arrival, the Democratic Society of Philadelphia was organized, and this became the “mother” to more than 40 other Democratic Societies that were rapidly created throughout the nation, all modeled on the Jacobin Clubs of revolutionary France. These Societies were particularly strong in the west and the south, but they existed in every state. It was common



John Jay

John Trumbull



Rufus King

Gilbert Stuart

at the meetings of these Societies that toasts would be drunk to the “French Republic” and the “defeat of monarchists.”

Jefferson and Madison were in the midst of all of this. James Monroe, who had certain talents as a writer, was deployed to author attacks on Hamilton and his friends in the Jeffersonian press. Through the spring and summer of 1793, Monroe penned numerous articles attacking Hamilton, culminating with an article in the *Virginia Gazette and General Advertiser* on September 4 that denounced Hamilton’s allies John Jay and Rufus King. A sample from that article, written under the *nom de plume* “Agricola,” gives the tone of Monroe’s writings throughout those months. Monroe writes:

The game which the enemies to the French revolution, who are likewise notoriously the partisans for Monarchy, are now playing, is intitled to particular attention. . . . a powerful faction is opposed to the great principles of the French revolution, and much more attached to the constitution of England, than to that of their own country. [Their intention is to] introduce this latter form of government here, upon the ruin of our own.

The problem for Jefferson and his allies was that they were not prepared in the summer of 1793 to

openly attack Washington.¹ Washington was universally popular, and had cemented both national unity and the Office of the Presidency with his three national tours of 1789, 1790 and 1791, during which he had visited all thirteen of the American states.

The British ‘Little Sarah’

Genêt, however, could not be restrained. When the Washington administration took action to curtail Genêt’s efforts to drag the

United States into war against Great Britain, Genêt began to appeal to Congress, stating that the direction of foreign policy rested in that body, not with the Executive.

When that tactic failed, he announced publicly that he was prepared to take the fight directly to the people. He charged that Washington had succumbed to British influence, and began to organize an insurrection, through the Democratic Societies, to force the United States into war. The Pennsylvania Society, at Genêt’s direction, issued a resolution, asking, “Is our President, like the grand sultan of Constantinople, shut up in his apartment, and unacquainted with all talents or capacities but those of the seraskier or mufti that happens to be about him?” Jefferson, still maneuvering for influence within Washington’s cabinet, became frantic, writing to Madison that Genêt would “sink the republican interest” if not restrained.

This all came to a head in July/August, 1793 with the “*Little Sarah* Affair.” The *Little Sarah* was a British ship, captured by the French and brought to the port of Philadelphia. There, under Genêt’s personal direction, it was refitted as a privateer, manned by a crew of American citizens, renamed *La Petite Démocrate* and sent out to sea to attack British shipping in the Atlantic. After a series of emergency meetings of Washington’s cabinet, during which Jefferson was forced to

1. Open attacks on Washington would begin in earnest with the signing of the Jay Treaty in 1795.

distance himself from Genêt's actions, on August 1 Washington ordered Jefferson to write to Gouverneur Morris in Paris with an official request demanding that the French government recall Genêt.

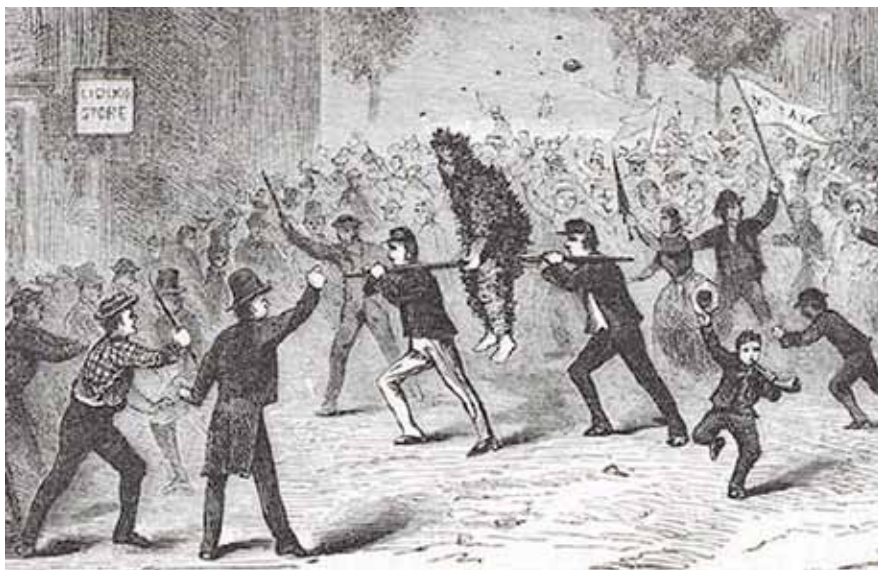
On August 23, James Monroe vented his frustration at the turn of events in a letter to John Brackenridge:

The monarchy party has seized a new ground whereon to advance their fortunes. The French minister has been guilty, in the vehemence of his zeal, of some indiscretions, slighting the President of the U. States, and instead of healing the breach, this party have brought it to the public view & are labouring to turn the popularity of this respectable citizen [Washington], agnst the French revolution, thinking to separate us from France & pave the way for an unnatural connection with Britain.

The 1791-1793 attempt to oust Hamilton and force the United States into a war against Britain had failed. The Democratic Societies, along with Jefferson's role in the government, were discredited. In August 1793 Jefferson informed Washington of his intention to resign as Secretary of State, which he did on December 1. The crushing of the armed uprising unleashed by the Democratic Societies the next year (known misleadingly as the "Whiskey Rebellion"), with Washington taking the field as Commander-and-Chief of a 13,000-person militia force, completed the defeat of the insurrection.

V. True Leadership: The Proclamation of Neutrality

In the midst of the Crisis of 1793, on April 22, President Washington issued "The Proclamation of Neutrality." Unlike a number of Washington's speeches and executive statements, in which he had collaborated closely with Hamilton, the Proclama-



The Famous Whiskey Insurrection in Pennsylvania, in 1794. Depicted is a tarred and feathered tax collector being made to "ride the rail."

tion was authored and issued by Washington himself. We reprint it here, in full:

General Thanksgiving
By the President of the United States of America

A Proclamation:

Whereas it appears that a state of war exists between Austria, Prussia, Sardinia, Great Britain, and the United Netherlands, of the one part, and France on the other; and the duty and interest of the United States require, that they should with sincerity and good faith adopt and pursue a conduct friendly and impartial toward the belligerent Powers;

I have therefore thought fit by these presents to declare the disposition of the United States to observe the conduct aforesaid towards those Powers respectfully; and to exhort and warn the citizens of the United States carefully to avoid all acts and proceedings whatsoever, which may in any manner tend to contravene such disposition.

And I do hereby also make known, that whatsoever of the citizens of the United States shall render himself liable to punishment or forfeiture under the law of nations, by committing, aiding, or abetting hostilities against any of the

said Powers, or by carrying to any of them those articles which are deemed contraband by the modern usage of nations, will not receive the protection of the United States, against such punishment or forfeiture; and further, that I have given instructions to those officers, to whom it belongs, to cause prosecutions to be instituted against all persons, who shall, within the cognizance of the courts of the United States, violate the law of nations, with respect to the Powers at war, or any of them.

In testimony whereof, I have caused the seal of the United States of America to be affixed to these presents, and signed the same with my hand. Done at the city of Philadelphia, the twenty-second day of April, one thousand seven hundred and ninety-three, and of the Independence of the United States of America the seventeenth.

—George Washington.

This Proclamation was the decisive intervention. With one single act, Washington broke the back of Jefferson's insurrection. With it, Washington established two critical precedents: First, that it was the executive, not the legislature, that would direct U.S. foreign policy. This is an indispensable feature of the U.S. Presidential system. Second, that America would not be drawn into oligarchical wars, but would follow a policy of even-handedness toward all.

Alexander Hamilton

This Proclamation was followed one month later by Alexander Hamilton's Open Letter to the American people, titled "Defense of the President's Neutrality Proclamation." One section reads:

At this moment a most dangerous combination exists. Those who for some time past have been

busy in undermining the constitution and government of the United States, by indirect attacks, by labouring to render its measures odious, by striving to destroy the confidence of the people in its administration—are now meditating a more direct and destructive war against it—and embodying and arranging their forces and systematising their efforts. Secret clubs are formed and private consultations held. Emis-

saries are dispatched to distant parts of the United States to effect a concert of views and measures, among the members and partisans of the disorganizing corps, in the several states. . . .

The ground which has been so wisely taken by the Executive of the United States, in regard to the present war of Europe against France, is to be the pretext of this mischievous attempt. The people are if possible to be made to believe, that the Proclamation of Neutrality issued by the President of the U.S. was unauthorized illegal and officious—inconsistent with the treaties and plighted faith of the

Nation—inconsistent with a due sense of gratitude to France for the services rendered us in our late contest for independence and liberty—inconsistent with a due regard for the progress and success of republican principles. Already the presses begin to groan with invective against the Chief Magistrate of the Union, for that prudent and necessary measure; a measure calculated to manifest to the World the pacific position of the Government and to caution the citizens of the United States against practices, which would tend to involve us in a War the most unequal and calamitous. . . .

Hamilton followed this Open Letter with a series



Alexander Hamilton

of seven articles, published in the *Gazette of the United States* and written under the name *Pacificus*. The first of these was titled “Assertion of Presidential authority to issue a Proclamation of Neutrality.” Then, in February of 1794, Hamilton continued his attack with two new articles, published in the *American Daily Advertiser* and written under the name of *Americanus*.

The primary theme in these writings is Hamilton’s insistence on the Constitutional authority of the President to issue a Proclamation of Neutrality binding on the entire nation. In this he is defending the very Constitution the which he had been the author of the final form. Jefferson and Madison denied this executive power, and their views go all the way back to the opening of the Constitutional Convention, when Madison’s original “Virginia Plan” envisioned an Executive and a Judiciary which both would be subservient to Legislative Power, exactly the scenario which was later attempted in revolutionary France with the creation of the National Assembly.

Jefferson and his friends continued their slanders that Hamilton and others who had Washington’s ear were pro-British monarchists. But the lie is put to those charges by simply examining the special mission of Gouverneur Morris to London in 1790. Washington deployed Morris to enter into negotiations with the British government to settle unresolved disputes with Britain left over from the 1783 Treaty of Paris, particularly the continuing British occupation of forts on American soil along the Great Lakes and in the West. Morris, a Francophile, spent eleven months in London, during which he took a very confrontational approach with William Pitt, the Duke of Leeds and other British negotiators. He made his presence as unwelcome to the British elites as he was later with the French Jacobins.

In London, Morris also was able to observe both sides of the oligarchical spider’s web. He witnessed a speech of Edmund Burke before the House of Lords, dismissing Burke’s argument as “confused” and his thinking as “marred.” He also attended a dinner with Richard Price, Burke’s English nemesis and Thomas Paine’s closest collaborator in England. He describes Price simply as “one of the Liberty-mad People.” Morris would not be ensnared in Britain’s left-versus-right trap.

VI. The Republic Endures

As for Washington, in his 1796 “Farewell Address,” he reiterated his vision:

In relation to the still subsisting war in Europe, my proclamation of the twenty-second of April, 1793, is the index of my plan. Sanctioned by your approving voice, and by that of your representatives in both houses of Congress, the spirit of that measure has continually governed me, uninfluenced by any attempts to deter or divert me from it.

After deliberate examination, with the aid of the best lights I could obtain, I was well satisfied that our country, under all the circumstances of the case, had a right to take, and was bound in duty and interest to take, a neutral position. Having taken it, I determined, as far as should depend upon me, to maintain it, with moderation, perseverance, and firmness. . . .

The duty of holding a neutral conduct may be inferred, without anything more, from the obligation which justice and humanity impose on every nation, in cases in which it is free to act, to maintain inviolate the relations of peace and amity towards other nations.

Consider that concluding phrase,—“*to maintain inviolate the relations of peace and amity towards other nations.*” With those words, Washington defined an entirely new principle of how a republic should conduct its affairs with other nations. This approach would later be called “A Community of Principle Among Nations,” but the origin of this outlook flowed from the mind and utterances of Washington.

The Washington Presidency is a staggering lesson for each of us. Washington, personally, was operating entirely in uncharted territory. Never before in human history had there been an elected president of a constitutional republic. No one knew how it would work. No one knew if it would last. He had to create something entirely new. He had to define what it meant to be President of a Republic. And he had to continue to do so every day—with new initiatives and new decisions—for eight years.

After 1797, America would suffer many tribulations, including the mistakes of the Adams Presidency and the subsequent 24 years of rule by the Virginia slav-

ocracy,—the effects of which created profound problems and dangers—but the defeat of the 1791-1793 coup and the victory of the 1789-1797 establishment of Constitutional government and Hamiltonian Public Credit created a turning point in human history which could not be eradicated.

This is what personal leadership can accomplish.

VII. Victory Depends on You

In 1794 Friedrich Schiller, witnessing the degeneration of the French Revolution into savagery, stated that “a great moment has found a little people.”

In December 1792, Gouverneur Morris, then the U.S. Ambassador in Paris, writing to Thomas Pinckney in London, addressed the issue in his own way:

Success as you will see, continues to crown the French Arms, but it is not our Trade to judge from Success You will soon learn that the Patriots hitherto adored were but little worthy of the Incense they received. The Enemies of those who now reign treat them as they did their Predecessors and as their Successors will be treated. Since I have been in this Country, I have seen the Worship of many Idols and but little acknowledgement of the true God. I have seen many of those Idols broken, and some of them beaten to Dust. I have seen the late Constitution in one short Year admired as a stupendous Monument of human Wisdom and ridiculed as an egregious Production of Folly and Vice. I wish much, very much, the Happiness of this inconstant People. I love them. I feel grateful for their Efforts in our Cause and I consider the Establishment of a good Constitution here as the principal Means, under divine Providence, of extending the

blessings of Freedom to the many millions of my fellow Men who groan in Bondage on the Continent of Europe. But I do not greatly indulge the flattering Illusions of Hope, because I do not yet perceive that Reformation of Morals without which Liberty is but an empty Sound.

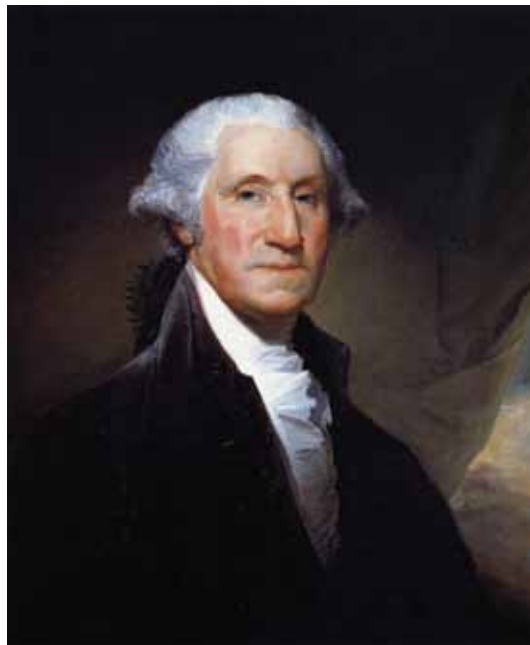
Leadership is at heart just such a moral issue. It poses the question: How shall I lead my life? What is my responsibility to my fellow man and to the future?

Leadership is fundamentally an act of sacrifice,—to surrender oneself to a higher purpose. It is a willingness to stake all—career, prestige, social standing and relationships—upon an action which one knows to be both correct and necessary. It involves, as the saying goes, “sticking one’s neck out.”

How is one to know if the chosen goal and the selected actions are the right ones? The only guidepost is that one’s actions be motivated through a spirit of *agapē* and a determination to advance the human condition through science, art and upward human development; a determination to develop one’s own creative judgement and power. If that

motivation exists, then all one has to do is work on it. Relentlessly. Hard work will not, in itself, produce either creativity or leadership, but neither is possible without a willingness to work hard. In one sense, what we are speaking of is a passionate commitment to self-betterment, in the best sense of that term,—to improve one’s powers of judgement, to strengthen one’s courage to act.

The life of George Washington shines forth to provide lessons for today, but these are not textbook lessons, to be studied and filed away. Our tasks are real and immediate,—to create the new initiatives, the new flanks, the new victories that will decide the path humanity will take in the immediate years ahead. Essentially, individual life is a series of decisions. How we decide to act now will determine the future.



Gilbert Stuart

George Washington

II. The Potential U.S.-China Partnership

Duterte Scraps U.S. Military Basing Rights—Trump Says ‘No Problem’

by Mike Billington

Feb. 18—Philippine President Rodrigo Duterte and U.S. President Donald Trump have something in common: They both want to get the U.S. military out of the Philippines. To the horror of the “swamp” in Washington—the press, the Congressional war-party (Republicans and Democrats alike), and even Trump’s own Cabinet—the President has once again demonstrated that he will distance himself from virtually everyone in “the Establishment” responsible for dragging the U.S. over the past decades into endless wars, economic decay, and the anti-science “Green” idiocy.

On February 4, the Duterte government presented the U.S. Embassy in Manila with an official notification that the Visiting Forces Agreement (VFA), that allows the U.S. to establish bases across the country for troops and military equipment, is rescinded. That agreement requires the U.S. to remove its military forces and equipment within 180 days of such notification.

Secretary of Defense Mark Esper responded to Duterte’s action:

I do think it would be a move in the wrong direction, as we both, bilaterally with the Philippines and collectively—with a number of other partners and allies in the region—are trying to say to the Chinese, “You must obey the international rules of order. You must obey—you know, abide by international norms.”

But President Trump begs to differ. Asked on Feb. 13 about Duterte’s order to remove the U.S. bases, Trump responded:

Well, I never minded that so much, to be honest. We helped the Philippines very much. We helped



Presidential Photos/Ace Morandante

Philippines President Rodrigo Roa Duterte and his partner Cielito “Honeylet” Avanceña welcome U.S. President Donald Trump in Pasay City, Philippines, November 12, 2017.

them defeat ISIS. I don’t really mind if they would like us to do that. . . . It will save us a lot of money. *My views are different from others.* [emphasis added]

Indeed, Trump is quite aware that the anti-China hysteria being riled up in the U.S. is aimed at him as much as it is at China, as demonstrated in the [EIR Special Report](#), *End the McCarthyite Witch Hunt Against*



USAF/Araceli Alacon

Loading a High Mobility Rocket Artillery System onto a KC-130J Super Hercules transport plane as part of an annual bilateral training exercise between the U.S. and Philippines armed forces, Clark Air Base, Philippines, April 6, 2016.

China and President Trump.

Leaders around the world are increasingly aware, and reporting openly, that the wild anti-China diatribes by Trump's Secretary of State Mike Pompeo, by Congressional leaders, and the U.S. media, are totally contrary to President Trump's strongly asserted respect for China, and for Chinese President Xi Jinping in particular. The Munich Security Conference from Feb. 14-16 saw Secretary of State Mike Pompeo, Esper, and Speaker of the House Nancy Pelosi (fresh from her failed effort to remove Trump from office) rant against China as a threat to "our way of life." And yet President Trump, as recently as Jan. 21 at the Davos Economic Forum, said of China: "Our relationship with China has probably never been better." He added that his relationship with President Xi Jinping was "an extraordinary one.... He's for China, I'm for the U.S., but other than that we love each other."

Duterte vs Obama and the War Party

Duterte was elected President of the Philippines as part of a global revolt, which began in 2016, against the destruction of sovereignty by the British imperial financial oligarchs, sometimes called the "Washington Consensus." This revolt included the Brexit vote in the UK, as well as Duterte and Trump's elections that same year.

The previous government in Manila, under Presi-

dent Noynoy Aquino, was the darling of the Obama Administration, serving as a colonial tool for the Obama "Pivot to Asia"—the encirclement of China and Russia's Far East with a massive nuclear military capacity—while the Aquino government picked a fight with China over sovereignty issues in the South China Sea. The Philippine economy remained the "sick man of Asia" under the Washington Consensus, dictating that there be no infrastructure or industrial development, only raw materials extraction and colonial-style "call centers," wasting the talents of bright young Philippine youth

by having them work all night to service Americans with computer problems and the like. On top of that, the drug crisis was destroying the minds and the health of millions of Filipinos.

Duterte, a long-time Mayor of Davos City in Mindanao, with a reputation for having cleaned up the criminal drug gangs and building the city, was swept into office by a groundswell of rage against the "yellows"—which was the color of the "color revolution" that had brought Aquino's mother to power after the U.S.-orchestrated coup against nationalist leader Ferdinand Marcos in 1986. Duterte not only launched an all-out war on drugs, much to the disgust of the drug-legalizers like George Soros, but he also immediately told Barack Obama to go to hell and take his efforts to use the Philippines as a tool to start a war with China along with him. Duterte travelled to both China and Russia, joining in China's Belt and Road Initiative, bringing infrastructure development and military aid to the impoverished nation.

He made clear that he would have no part in a military confrontation with China and negotiated a policy of joint China-Philippines development of the oil and other resources in the contested areas of the South China Sea (now called the West Philippine Sea in the Philippines). He insisted that the Philippines should no longer be a staging ground for U.S. plans for military confrontation with China, but did not act to shut down the bases at that time.



Presidential Photos/Alfred Frias

President Duterte addressing local chief executives at the SMX Convention Center in Pasay City, Philippines, February 10, 2020.

Trump and Duterte

Duterte's relations with the U.S. were restored when President Trump came into office, supported Duterte's war on drugs, and made clear that he had no objections to his establishment of good relations with Russia and China. When ISIS-linked terrorists seized the city of Marawi in Mindanao in 2017, Duterte welcomed the logistical support offered by U.S. military forces in the region for the fierce battle waged by the Philippine military forces.

But the same individuals and institutions undermining Trump's presidency within the U.S. continued to demonize Duterte, both for his war on the drug scourge, and for his refusal to allow the neocons to use his nation to provoke a crisis with China in the South China Sea.

This was aggravated when the U.S. Congress imposed sanctions on individuals in the Philippines under the absurd "Global Magnitsky Act," an anti-Russia bill that the human rights mafia in the U.S. (from both parties) uses to punish anyone it chooses to, from any country, by simply claiming "human rights" offenses. In the Philip-

pine case, a bill by Democrat Senators Richard Durbin and Patrick Leahy was passed in December 2019, imposing sanctions on "anyone" involved in the detention of Aquino's Justice Secretary, Leila de Lima, who was arrested for taking drug money. Duterte banned the two U.S. Senators from entry to the Philippines, and denounced their attack on his nation's sovereignty.

The last straw came in January, when the State Department revoked the visa of former Police Chief Gen. Ronaldo "Bato" dela Rosa. While the State Department gave no explanation, it has been assumed it was due to his leadership of Duterte's war on drugs, claiming that the people killed in the war were "extra-judicial murders" by police.

Duterte immediately responded:

Now they won't let Bato go to America. I am warning you, if you don't do the correction there: One, I will terminate the bases, the Visiting Forces Agreement, I will end that son of a bitch. I am giving the American government one month from now.



PCOO/Albert Alcain

Philippines National Police Director General Ronald dela Rosa.

He also announced that he would not allow his Cabinet members to travel to the U.S., and that he would not accept President Trump's invitation to a U.S.-ASEAN Summit in Las Vegas scheduled for March.

But Duterte made it clear that he does not blame President Trump. In an [interview](#) granted to *RT* on January 23, he said that the U.S. was treating the Philippines as a "vassal state," while Russia and China respected Philippine sovereignty (an irony, since the neocons accuse China of breaching Philippine sovereignty in regard to the South China Sea, but have no qualms about imposing sanctions on the Philippines when the government refuses to do their bidding). In regard to the de Lima case, Duterte said she "got money for drugs," and that his country was able to "dispense justice" on its own.



KDP website

Antonio “Butch” Valdes (left photo, center), leader of the LaRouche Society in the Philippines and founder of the KDP political party, surrounded by young supporters. “Tigil Bayad” means “Stop Payment.” The sign on the right says: Remove the public utilities from oligarchical control.



KDP website

When the *RT* reporter implied that Trump had imposed the sanctions, Duterte corrected him, first repeating that it was the “son of a bitch” Obama who attacked him for the war on drugs, adding: “I would never say that about President Trump. Trump is a nice person—it’s just his style of doing things. I do not believe he really wants war.”

Ending Privatization?

Although it is not in the international news, there is a second reason the New York-London financial oligarchy hates Duterte. In the decades following the 1986 coup against Marcos, who had brought nuclear power and industrial development to the country, the development process was shut down by Wall Street “advisers.” The nation’s water and electricity utilities were privatized. That resulted in the Philippines having some of the highest electricity and water rates in Asia, as well as regular blackouts and even long stretches without water in Metro Manila. In a 2001 [article](#), “Philippines Patriots Battle Privatization of their Energy System,” *EIR*, working with Antonio

“Butch” Valdes, the leader of the LaRouche Society in the Philippines, exposed the scam and warned the nation of the drastic consequences that would be the result.

In November 2019, the oligarchical families that owned the two privatized water companies used the courts to demand a huge gift from the government, supposedly to make up for “lost profits” because the government had refused to allow rate hikes. Duterte not only rejected the extortion, but threatened to jail the oligarchs. This month, he escalated the fight, demanding that the privatized companies return some of their undeserved profits over the years to the people: “Where is the money of the average Filipino who is having trouble paying,” Duterte said, “who pays his water bill, and has to pay because if it will be cut off, it would give him a lot of headache. . . . Give us back the money. Give it to the people and maybe we can talk about solving your problems.”

He added that if the companies shut off the water for lack of payment, “I will just take over and nationalize water in the Philippines. I have plenty of soldiers.”

This fight is being waged among the public by Butch Valdes and the new party he founded last year, the *Katipunan ng Demokratikong Pilipino* (KDP). Valdes is also calling for the re-nationalization of electric power production and distribution, as well as the repair of the mothballed Bataan Nuclear Power Plant, to restore the nation’s economic sovereignty.

After the Phase I Trade Agreement: Decoupling or Development?

by Richard A. Black, Schiller Institute Representative at the United Nations

Feb. 15—With the signing in January of Phase I of the China-U.S. trade agreement, the question is now posed: Are there principles which, if applied by both nations, could successfully resolve major conflicts and guide the two nations towards a successful Phase II agreement? One scenario, which would ensure failure, would be for U.S. negotiators to assert the City of London/Wall Street demand that China de-structure its system of “socialism with Chinese characteristics,” by agreeing to such actions as reducing its state corporations sector, or cutting directed investment and other features of its dirigist economy. Another negative scenario would be if China were to see as its only recourse a “de-coupling” from the U.S. economy.

At the January 15 White House signing of the Phase I agreement, President Trump thanked his “very, very good friend,” President Xi—who was connected by telephone for the ceremony—for the successful result of the “tough, honest, open and respectful” two years of negotiations. President Trump announced that he would soon go to China to reciprocate the current presence of China’s lead negotiator, Vice Premier Liu He. Importantly, President Trump placed the agreement in the largest strategic context:

As we move on to Phase II, I look forward to continuing to forge a future of greater harmony, prosperity, and, really, commerce . . . far beyond commerce, between the United States and China. That is something that—far beyond even this deal—it’s going to lead to an even stronger world peace.

President Xi Jinping, in his statement, extended his warm greetings and support, but cautioned that it is now critical to “enhance mutual trust.” He called for collaboration not only of businesses, but of research institutes, schools and colleges—clearly a reference to widespread current actions by the U.S. Departments of State, Justice, and Defense, and the U.S. Congress, of labeling visiting Chinese students and scholars as spies, of arresting and de-funding Chinese research scientists



White House/ D. Myles Cullen

President Donald Trump and Chinese Vice Premier Liu He participate in a signing ceremony of Phase I of a trade agreement between the United States and China, at the White House, January 15, 2020.

and of closing down Confucius Institutes on many college campuses. And China’s Ambassador to the U.S., Cui Tiankai, in his remarks, said that the relationship between the two nations is at a crucial juncture:

We need to strengthen strategic communication and dialogue on various levels to build trust,



UN/J.C. McIlwaine

Cui Tiankai, Ambassador of China, addressing a UN Security Council Meeting.

reduce misgivings and misunderstandings and misjudgment, and properly manage differences so as to build a China-U.S. relationship based on coordination, cooperation and stability.

What Are the Principles of Mutual Prosperity?

In fact, there are principles by which positive economic relations can proceed between the two nations and others. For decades, U.S. statesman and economist Lyndon LaRouche has spelled out new economic metrics for economic progress and collaboration between the major powers. In China, today—where LaRouche’s contributions are well known in many high-level policy-making circles—certain economists connected to the Central Economic Work Conference have presented important innovations coherent with the solutions provided by the American, LaRouche. The Central Economic Work Conference is the yearly event which sets China’s national economic policy for each coming year.

Recently, there have been important discussions in New York and in Shanghai on both the potential and the barriers to a Phase II China-U.S. trade agreement. In this report, I will review some of those discussions, and suggest a way forward.

Despite President Trump’s active dialogue with President Xi, some leading Chinese economists are cautious about the content of a projected Phase II

agreement. Three points are irrefutable: China’s commitment to its own unique political and economic model; President Trump’s personal commitment to a U.S.-China collaboration which he calls “a very beautiful mosaic”; and the importance of a *new* element on the world stage—China’s brilliant success with its game-changing Belt and Road Initiative (BRI).

Moreover, since I first drafted this review of current discussions of views and principles regarding trade relations, the impact of the novel coronavirus (COVID-19) outbreak has intensified, creating a new context for both what will happen under the Phase I accord, as well as setting special conditions for any Phase II negotiations. On February 7, Presidents Xi Jinping and

Donald Trump had a lengthy telephone discussion on fighting the virus, and on staying in close communication over the coming months on how to carry out Phase I trade commitments. This kind of good-will statesmanship is the precondition for any economic arrangements.



White House

President Donald Trump with President Xi Jinping at the APEC Leaders Summit in Danang, Vietnam, on November 11, 2017.

Prospects for Phase II

The topic of what happens next in U.S.-China trade relations, after the signing of the Phase I agreement, was taken up January 9 at a high-level yearly forum of Chinese and American economists held in New York City. Keynote speaker Dr. Qin Xiao warned that after the signing of the Phase I Trade Agreement, relations

between the two countries would likely go into “a semi-decoupled structure,” while avoiding a full decoupling and a cold war. Dr. Qin, former chairman of China Merchants Bank and of the CITIC Industrial Bank, said that the Phase I Agreement “has not changed the stand-off between China and the U.S. It still looks like a semi-decoupling scenario. The U.S. says that Phase II will focus on structural issues, but never defines it clearly. . . . We should never underestimate the difficulties ahead.”

The forum, jointly sponsored by the Eastern Establishment’s National Committee on U.S.-China Relations (NCUSCR) and the prestigious China Center for Economic Research (CCER) in Beijing, heard presentations from eight economists from China who essentially painted a picture of a China that will continue to open up to the “free market” economy of the U.S. and Europe; but the Chinese economists quietly made clear that Wall Street’s influence in trade negotiations will hit a brick wall if it attempts to force China to lessen the government role of directing industrial development, of channeling finance into industry, and of supporting a growing R&D sector.

Dr. Qin made it clear that his group of economists views the big issue of projected Phase II negotiations to likely be U.S. demands for China to “re-structure” both its economy and its political system. If this estimate turns out to be true, the question then becomes, what is the pathway towards an international solution?

At Least, ‘Competitive Coexistence’

Many of the Chinese economists who spoke at the New York City forum had been involved in releasing an extensive Joint Statement in October 2019, at the Shanghai Campus of New York University (NYU). Signed by 37 leading Chinese and American economists, the statement, entitled “U.S.-China Trade Relations—A Way Forward,” seeks to define a way to avoid trade war by providing an alternative to the deadly choices of either (a) decoupling of the two economies or (b) attempts to force China to abandon its central government’s role in directing the economy.

In fact, more revealing than the Joint Statement itself are several of the Concurring Statements ap-

pendent to the document by some of the signators. What we find is that—for international consumption—the Chinese representatives do *not* speak about the breathtaking achievements of the Chinese economy in the last 40 years and their partnerships today with 157 countries around the world in the BRI. Rather than speaking about the potential for joint U.S.-China great projects in both the developing sector and in the rebuilding of U.S. infrastructure, they define a future economic relationship with the U.S. that will be merely, at best, a “competitive coexistence.”

Why is this? In short, the regime-change tactics of U.S. and British intelligence agencies’ interference against China’s sovereignty, through attacks on Hong



The Three Gorges Hydroelectric Dam on the Yangtze River, Hubei province, China.

Kong, Tibet, Taiwan and Xinjiang, and their defining of China as a malignant adversary by many sections of the U.S. federal government—especially the FBI—have, so far, reduced these economists’ best hope to nothing more than what they have named “peaceful economic co-existence.” While President Trump’s policy is one of definite non-interference in Chinese internal affairs, Chinese leaders are, however, watching senior members of his cabinet and federal agencies trumpet a full offensive against China as a primary economic and military threat.

Permit the People ‘To Light Lamps’

The most forthright statement of the Chinese passion for economic development coupled with national sovereignty comes from a Co-Convener of the October

2019 Joint Statement, Dr. Justin Yifu Lin, Dean of the Institute of New Structural Economics at Peking University. Dr. Lin is a Councilor of the State Council and a member of the Standing Committee of the Chinese People's Political Consultative Conference (CPPCC). Dr. Lin makes it clear that advanced countries like the U.S. have long developed both their industries and their R&D sector by continuous government economic support. Therefore, to try to now deny such central support to developing countries such as China is hypocrisy and bad policy.

Dr. Lin uses a Chinese proverb from the famous poet, Lu You, from the Song Dynasty to make the point: "Only state officials are allowed to set fire, and the ordinary people are not allowed to light lamps." (See box, p. 66) By this, Dr. Lin is indicating that the current hypocritical Wall Street policy is in effect saying: "We advanced countries gave government support in the long build-up phase of our industries, and now we subsidize basic science research, but . . . you developing nations are not allowed, today, to employ government support in developing your industrial base, according to today's dogma of free trade."

Further, Dr. Lin is explicit, that any attempt to suppress the rapid development of advanced industries in China—such as Huawei's 5G—"is essentially a bullying behavior and should be condemned and prohibited."

In similar fashion, Dr. Feng Lu, professor of economics at the National School of Development (NSD) at Peking University and formerly with the G20 Research Group of the Ministry of Finance, explains in the Joint Statement that from the time that China joined the World Trade Organization (WTO) in 2001, she has never intended to either copy or resemble any Western nation's system or model. He points out that China's national policy, "socialism with Chinese characteristics," was adopted in 1987, and has appeared in the title



CC/Bdwgas

Dr. Justin Yifu Lin

primary with respect to the secondary features of the differing political institutions of different government systems?

The American scientist and economist Lyndon LaRouche (1922-2019) analyzes this question and provides a solution in a 2008 [paper](#), "Why the Economists Failed—Economy and Creativity." In that paper, La-

Rouche points to the central and irreplaceable role of the building of the most advanced infrastructure for ensuring limitless growth in both (a) the cognitive levels and the living standards of the general population, and (b) the rate of progress of the basic science research itself, which, in turn, is the prerequisite for further revolutionary advance. LaRouche writes that advanced infrastructure "amplifies the productive powers of labor at the point of both production of physical goods, and of the effect of essential services on increases of the physical-productive powers of labor. . . ."

LaRouche uses the examples from history of both the role of the Great Projects of Charlemagne in Europe and the nation-building approach of the Twentieth-Century Russian scientist, Academician V.I. Vernadsky. LaRouche writes:

Under Charlemagne and his influence, for example, the greatest increase of the productive powers of labor, per capita and per square kilo-



Vladimir Vernadsky

meter, was achieved through such prominently featured means as the launching of a system of rivers and canals which became the principal means of Europe's inland waterborne transport. The role of such systems of rivers and canals was, later, both superseded and assimilated by the development of transcontinental railway systems during the late Nineteenth Century, beginning with that legacy of the Presidency of Abraham Lincoln. Similarly, later, during the period preceding so-called "World War I," Thomas Edison's development of the electrical motor, in lovely defiance of the *New York Times* at that moment, resulted in a general increase in productivity in manufacturing, even without comparably significant improvements in the methods of production otherwise.

In the language of the great Twentieth-Century Russian scientist Academician V.I. Vernadsky, the principal cause of the increase of the productive powers of labor, occurs through situating production and transport of goods and services within that essentially supporting framework of mankind's qualitative improvement of the Biosphere, an improvement which is effected through the qualitative improvement of the Noösphere as such. [Italics in original.]

Thus, LaRouche defined the advancing of great trans-national infrastructure building as the key to both (a) the lifting up of the cognitive power of populations to the new level required to maintain and innovate upon new, revolutionary infrastructure, and (b) the upshifting of the productivity of labor for the economy as a whole. In LaRouche's science of physical economy, "It is only the mind, whose approach to economy is physical, rather than financial accounting practices, which is capable of understanding, and accounting for the relative values generated by economic processes." LaRouche's conception of the economic power of infrastructure provides one key to understanding the immense effect of China having built 35,000 kilometers of high-speed railroads, domestically, over the last twenty years, and the rapid impact in Africa of its railroad building and industrialization projects on the continent, through the BRI.

A Russian Scientist Embraces an American's Discovery

In the 1980s, American scientist Lyndon LaRouche introduced a new economic measure, "potential relative population-density." In opposition to the money-counting tricks of the City of London and Wall Street—which make no distinction between speculative, non-productive money profit, on the one hand, and advances in the real, productive economy, on the other—LaRouche's metric measured real human progress. In other words, we have the following progression of determinations: First, "how many people can be potentially sustained per square kilometer—solely by means of labor at current technological levels—of that soci-



EIRNS/Rachel Douglas

Academician Pobisk G. Kuznetsov (c.) organized a presentation for Lyndon LaRouche (r.) at the Russian Academy of Sciences, during LaRouche's first visit to Moscow, in April 1994.

ety's population?" and second, "what is the rate of increase of that society's potential relative population-density?" This new metric could allow nations to measure actual human progress, or decline.

The late, renowned Russian chemist, philosopher and engineer, Pobisk G. Kuznetsov [proposed](#) that LaRouche's measure, in the science of physical economy, be designated in the future by the use of the term, *La*—short for *larouche*—as the name of the unit of measure of potential relative population-density. In the December 1994 issue of the Moscow journal *Rossiia 2020*, he wrote:

Let us introduce the physical magnitude of a *larouche*, designated by *La*, to denote the number of persons who can be fed from one square kilometer, or 100 hectares, of land, during one year.

In this way, LaRouche had introduced a measure of the advance of physical economy, building on the work of American geniuses Alexander Hamilton and Henry C. Carey. The measure would incorporate technological progress, expanding infrastructure, and a rising energy flux-density in the production process. [LaRouche esteemed Kuznetsov highly, but pointed out to his associates that ultimately, potential relative population-density, as a self-reflexive process, could not be assigned a number.—ed.]

Is China Developing a ‘New Set’ of Physical Economic Indicators?

An article first published in the English language edition of *People’s Daily*, in December 2017, carried the headline, “China Eyes Shift in Economic Policy for 2018—New Indicators Expected to Evaluate Development Quality.” Quoting interviews from the semi-official *Global Times*, the article discusses the coming week’s session of the Central Economic Work Conference, the yearly event which sets the direction for the central government’s coming economic policy. In discussing an expected de-emphasis on the setting of GDP targets for the nation as a whole and for the various regions, and their replacement by a set of new *physical economic* parameters, the article brings to mind the economic approaches of Premier Li Keqiang, as they were first debated internationally in 2010.

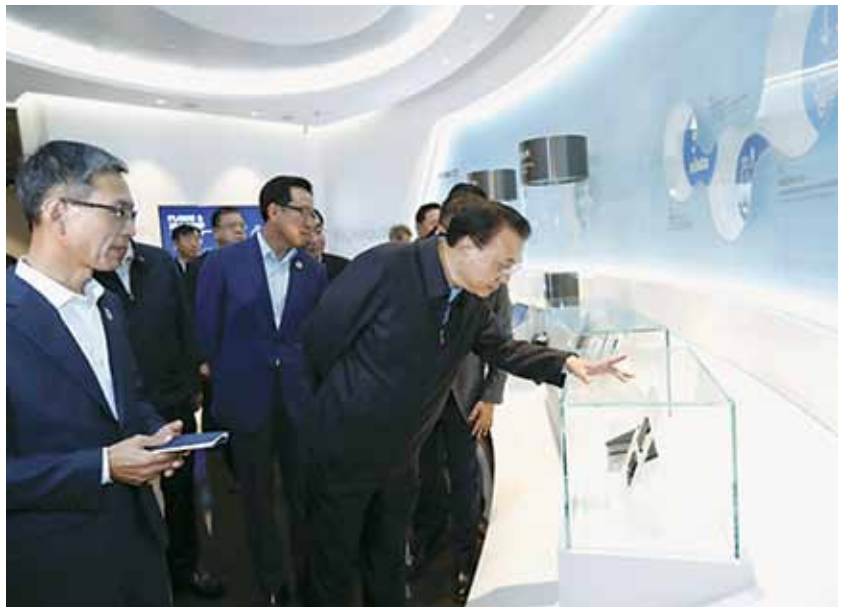
Auspiciously, the question arises: Has there been a serious behind-the-scenes discussion at the highest levels in China, of eventually replacing the highly worshipped money indices of the IMF, the WTO and *The Economist*, with something of a different quality—something of the physical economic approach of LaRouche, of Kuznetsov and of Li Keqiang?

People’s Daily quotes economist Tian Yun, director of the Macroeconomics Research Center’s China Society, an affiliate of the National Development and Reform Commission, China’s top economic planning agency. Tian remarked,

There could be some major, systemic changes in how the government prioritizes economic poli-

cies.... China has long been talking about pursuing high-quality, sustainable economic growth, but has made little progress because local governments continue to focus primarily on GDP. I think we could see some real policy shifts in 2018 to change that. For example, the central government might come up with new economic indicators to gauge economic development.

Speaking of such a “new set,” Liu Xuezhong, a senior macroeconomic analyst at the Bank of Communications, said that such new indicators could put more focus on three areas: (1) the environment, (2) people’s



Premiere, Li Keqiang visiting a Samsung semi-conductor plant in Shaanxi province, China on October 14, 2019.

livelihood, and (3) technological innovation: “If they release one, I suspect that it will be a comprehensive and clear set of indicators that truly reflects the government’s long-pursued goals of making the country’s economic development more efficient and green.”

The West’s financial media have long reported the story—based upon a leaked cable from Wikileaks—that Premier Li Keqiang had informed an American diplomat in 2007, that he, Li himself, did not trust China’s official GDP figures, that they were largely “man-made.” Later, when Li became China’s Vice Premier, he headed commissions overseeing the construction of the immense Three Gorges Dam and the Move South Waters North project.

According to the leaked cable, Li informed the U.S.

ambassador that when he had been Communist Party Secretary in Liaoning Province, rather than using GDP figures for planning, he devised a set of economic indicators which included (1) electricity consumption, (2) rail cargo volume, and (3) new bank loans provided. So rattled were the monetarist bastions by this revelation, that *The Economist*, *Bloomberg News* and others in the West quickly devised their own version of Premier Li's new method for tracking China's economy. They called this "the Li Keqiang Index"!

More recently, in June 2018, Premier Li toured Sany Heavy Industry, located in Changsha, in central China's Hunan province. The *South China Morning Post* reported that Li came away from that tour commenting that Sany's "excavator index . . . provided important support for macroeconomic analysis." The *Post* explained:

The [excavator index] gauge, which tracks 380,000 of the company's concrete mixers, excavators, and cranes, is a valuable indicator in gauging the health of the Chinese economy, according to a statement published on the government website, www.gov.cn [in English, [english. www.gov.cn](http://english.www.gov.cn)]. Sany, which has manufacturing facilities around the world and competes on the global stage with Caterpillar of the U.S. and Komatsu of Japan, has been providing Beijing with information captured by the index on a monthly basis since 2014.

Aspects of China-U.S. trade can be looked at in implied terms of physical measurement like this, to judge to what degree the "coupling" of supply chains across their economies can be mutually beneficial, or whether selective "decoupling" would be better.

Food commodity trade is an especially good case in point. For example, right now there is a very important complementarity between China's need for pork, and the U.S. capacity to supply it. With the Chinese swine-herd cut in half over the last 18 months from the scourge of African Swine Fever, and now the disruptions from COVID-19, China has need of meat imports, which have been coming from Europe, Australia, and South America. U.S. producers can add to that—directly with meat shipments, and indirectly with soybeans. This meets the terms of Phase I.

Then, as stability and growth resume in China's animal protein sector, new trade patterns can be planned in collaboration. For example, China and the U.S. can

cooperate on food and agriculture projects to increase nutrition and agricultural productivity in Africa and in Central and South America. The U.S. can benefit by reducing its current export-oriented monoculture in soy, hogs, and corn, and restoring the domestic rural sector to diversified, high-tech family-scale farms. In the course of this upgrade, the trans-national cartel corporations, which came to dominate international food flows during the "free" trade era, could be phased out. These large goals are entirely compatible with the respective political-economic systems of China—"socialism with Chinese characteristics," and of the United States—a revived "American System."

Phase II Trade Talks and the Common Aims of Mankind

Can China and the U.S. approach the projected Phase II trade negotiations with a new set of principles based upon mutual economic development? Can the current prevailing antagonistic geopolitics and geo-economics be replaced—as if "from above"—by each country lawfully using a new set of economic measures, reflective of the principles of development outlined variously by LaRouche, by Kuznetsov, and by Li? Can the old and tired British Empire Malthusian policy of "beggar-thy-neighbor" be replaced by "win-win" projects of infrastructure building and in joint Space missions?

If the major powers are to avoid "decoupling" and war, then the answer to these questions must be a determined, "Yes!" Helga Zepp-LaRouche, founder and president of the Schiller Institute commented recently on President Putin's own call "for a serious discussion about the basic principles of a stable world order and the most acute problems that humanity is facing. . . ." Addressing her fellow Europeans, in a [statement](#), "The World Order Urgently Needs New Principles to Ensure World Peace," Mrs. LaRouche wrote:

This serious discussion of the principles on which a sustainable order for all of humanity must be based is urgently needed. Instead of sticking to the backward-looking and dangerous concepts of geopolitics and "geo-economics," the European states should participate in the potential of the New Silk Road.

It is therefore imperative that all forces in Europe that are interested in ensuring world peace support the summit between Putin, Xi Jinping and Trump. . . .

The principles on which the world order urgently needs to be built are the common aims of mankind. The liberal establishment of Europe and the USA would do well to rethink the premises of its own profit-oriented system and to cooperate with the New Silk Road program in the economic development of Southwest Asia and Africa. . . .

Let the successful signing of the Phase I trade agreement, and President Putin's call for an urgent summit of the five Permanent Members of the UN Security Council, be the launch points for serious discussions of new approaches both in economics and in relations among sovereign states.

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The Necessary Government Role in R&D and Economic Advance

Dr. Justin Yifu Lin is the Dean of the Institute of New Structural Economics at Peking University and the former Chief Economist at the World Bank. He is renowned as the father of China's sweeping agricultural reform, an expert in both Chinese and Western economic theory, and a leading scholar of the view that China must develop its own economic and political system, based on the classical Chinese texts and values. We quote here from his Concurring Statement, appended to the October 2019 paper, "U.S.-China Trade Relations—A Way Forward," released at the Shanghai Campus of New York University (NYU).

Due to the different stages of economic development in developing and developed countries, market failures of their industrial upgrading occur in different places. If a developed country is allowed to take measures to overcome market failures for its industrial upgrading and a developing country is not allowed to take corresponding measures, it is like what the Chinese proverb describes: "Only the state officials are allowed to set fire, and the ordinary people are not permitted to light lamps."

For example, the technologies of most industries in a developed country are at the forefront of the world. The country needs to invent new technologies by itself for its industrial upgrading. The invention relies on breakthroughs in basic research (R) and the development of new technologies after breakthroughs in basic research (D). Enterprises are enthusiastic for D, but they are not willing to do R. However, without the breakthrough of R, the potential for D is limited. Therefore, the government in a devel-

oped country needs to support R for the country's economic development.

The fields that R can do are infinite. The budgets that the government can use to support R are limited. As such, the government needs to allocate budget to Rs for industries that are most important for national defense and/or economic development. According to Mazzucato (2011) and Gruber and Johnson (2019), the United States' current global leading industries are the results of the Rs supported by the government in the past decades. In essence, a developed country's support for R is an industrial policy. In addition, the patent system in a developed country compensates for the externalities generated by innovators.

A developing country will also have market failures in its industrial upgrading, for example, inadequate hard and soft infrastructure, but the government's budgets and implementation capabilities will not be sufficient to provide adequate hard and soft infrastructure for all potential industries and for the whole nation. The government can only provide the necessary improvements to the industries and places that have the greatest contribution to its economic development, that is, the government needs to have industry-specific and location-specific policies (Lin 2017).

This is essentially the same as the support of R in developed countries. The innovator in developing countries will also generate the externalities that should be compensated. The innovation in developing countries is not patentable, as it occurs within the global technological frontier. Therefore, the compensation for externalities in a developing country will be different from the patent in a developed country. If a developing country is not allowed to adopt industry-specific measures to overcome market failures in its industrial upgrading because its measures are not subsidies for basic research or patents for new technology as in a developed country, [then] this is like "only the state officials are allowed to set fire, and the ordinary people are not permitted to light lamps."

Demand Global Mobilization Now! Save Africans Threatened with Pandemic and Starvation!

by Ramasimong Phillip Tsokolibane, leader of LaRouche South Africa

Feb. 15—As leader of the movement in South Africa of the late American statesman and economist, Lyndon LaRouche, I hereby issue a call for an emergency global mobilization to save as many Africans as possible from the combined existential threats of the emerging coronavirus pandemic,¹ the Desert Locust upsurge in East Africa, and the starvation conditions developing in Southern Africa as the result of intense poverty and the worst drought in decades, perhaps in a century, which began in 2018.

I lend my support, and urge others to do so as well,

thermonuclear confrontation. The emergence of the coronavirus pandemic threat makes such a meeting even more urgent.

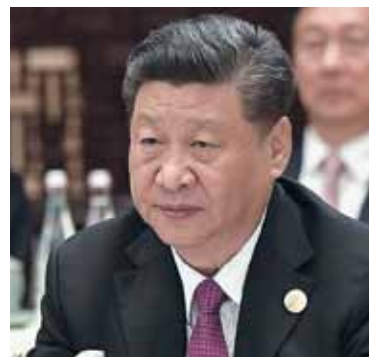
I have recently seen reports of the starvation conditions developing from the drought in Southern Africa, including in economically ravaged **Zimbabwe, Mozambique, Angola** and other nearby countries; this has led, according to reports, to a sharp rise in child prostitution, as youngsters offer sex in exchange for as little as R4.60, or U.S. 31 cents, in an attempt to secure bread



White House/Shealah Craighead
President Donald Trump



kremlin.ru
President Vladimir Putin



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President Xi Jinping

to the call for an emergency summit of the leaders of the world's three most powerful nations—President Donald Trump of the United States, President Vladimir Putin of Russia, and President Xi Jinping of China—issued by Schiller Institute President Helga Zepp-LaRouche.² Mrs. LaRouche issued that urgent, January 3 call for the three leaders to meet to seek a de-escalation of tensions that have sent the world careening toward a potential

for their starving families.³ Such reports should, in themselves, sadden the hearts of caring people around the globe. But when these conditions in Southern Africa are concurrent with the obliteration of crops in East Africa by the Desert Locust upsurge, the combined effects are even more alarming. The locust upsurge may rise to the plague level, and the locusts may spread to the Sahel, and West and North Africa.⁴

1. For a recent article on the coronavirus outbreak, see “Act on the Novel Coronavirus Immediately!” by Debra H. Freeman, DrPH, *Executive Intelligence Review*, February 7, 2020, pp. 15-19.

2. <https://larouchepac.com/sites/default/files/20200103-helga-statement-soleimani.pdf>

3. <https://www.iol.co.za/news/africa/girls-sell-sex-for-less-than-the-cost-of-bread-to-survive-hunger-crisis-in-africa-41837637>

4. See “Locust Swarms Devour Nations: Time for Emergency Solutions!” by Janet G. West, in *Executive Intelligence Review*, February 14, 2020, pp. 59-64.

I strongly support the call of Ugandan President Yoweri Museveni for action against the locust invasion and support his leadership by example. President Museveni's government is hiring civilians to work on the ground in spraying teams led by soldiers, and is buying airplanes for aerial spraying.

The UN's World Food Programme (WFP) reported on January 16 that "A record 45 million people ... in the 16-nation Southern African Development Community are gravely food insecure following repeated drought, widespread flooding and economic disarray." Lola Castro, WFP's Regional Director for Southern Africa, added, "This hunger crisis is on a scale we've not seen before and the evidence shows it's going to get worse."⁵ The number of people *under threat* is much more than the WFP's 45 million figure of those currently suffering. Indeed, that figure may itself be a serious understatement.⁶

Add Coronavirus to Malnutrition

Malnutrition, while less intense than starvation, stunts the physical and mental development of the very young, permanently. It weakens the immune systems of all, contributing to the spread of disease and an increased death rate from disease.

When malnutrition is then examined in the context of Africa's woefully inadequate healthcare systems, it is easy to see that when the coronavirus reaches our continent—which it soon will—the pandemic will have the potential to quickly spread death. Unless there is a major intervention of a fully mobilized global community, it will happen, even in a more advanced economy like my own.

Again, it is impossible to envision for Africa the type of heroic public health measures undertaken by China to try to limit the spread of the virus in that coun-

try without massive, coordinated external input. Yet, were we to start immediately to seriously address the crisis, we could save the lives of an enormous number of my fellow Africans.

It is no surprise that I have heard nothing from the global environmentalist movement about this crisis that threatens so many millions of lives here in Africa and elsewhere. Perhaps these immoral Malthusians—like His Royal Virus Prince Philip, the consort of the Queen of England—actually welcome these scourges as a way to "cull the human herd," for they have argued in favor of genocidal population reduction. Had this health emergency threatened only animals instead of both human beings and animals, Prince Philip's Worldwide Fund for Nature would no doubt have already issued a call for global action. Instead, silence.

Prince Philip made his view clear in August 1988, when the German Press Agency reported his statement that, "In the event that I am reincarnated, I would like to return as a deadly virus, in order to contribute something to solve overpopulation."⁷

To those who might say I am being alarmist—that we should delay, and wait and see what transpires—I say: You are playing dangerously with the lives of countless numbers of Africans who are either currently productive and otherwise useful citizens, or could become so, whose survival—by prompt coordinated actions, on many fronts—might be ensured. How would their (avoidable) deaths help Southern Africa?

I especially appeal to U.S. President Donald Trump, who has professed to be a friend of Africa:

Mr. President: We urgently need your leadership as a man who knows how to get things done, and who is able get others to go along. The United States, with its vast medical and food resources, is essential to the necessary effort. Your wife, First Lady Melania, has seen with her own eyes the conditions here and has shown great compassion for the plight of our children. We must save them so that they, and the world, might have the bright future they deserve.

I urge action now, not tomorrow. Now! The sooner we act, in an effective, coordinated way, the more people can be saved.

5. <https://www.wfp.org/news/southern-africa-throes-climate-emergency-45-million-people-facing-hunger-across-region>

6. Published reports of other aid agencies also spell out this picture. Some of their findings follow.

In **Mozambique**, according to ActionAid, 715,000 hectares of rice and maize in the country's breadbasket region were devastated in March 2019, just weeks before harvest, by Cyclone Idai and its accompanying tropical storm and flooding. Weeks later, a second cyclone hit. Then, drought followed.

On November 7, 2019, World Vision's Director for Humanitarian Emergencies in **Angola**, Robert Bulten, was already reporting that "Children are barely eating one meal a day [in Angola]. Our staff, who worked in Angola just after the Civil War say they have never seen hunger and malnutrition on this scale." The 26-year Civil War ended in 2002.

According to the aid agency Plan International, reporting on February 10, 2020, "Across the Southern Africa region there are now 14.4 million people facing acute levels of hunger, compared to 6 million at the same time in 2018." "Acute hunger" is a polite expression for starvation.

7. Prince Philip was simply repeating what he had already written in his Foreword to Fleur Cowles' book, *If I Were an Animal* (London: Robin Clark Ltd, 1986).

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