

FUSION

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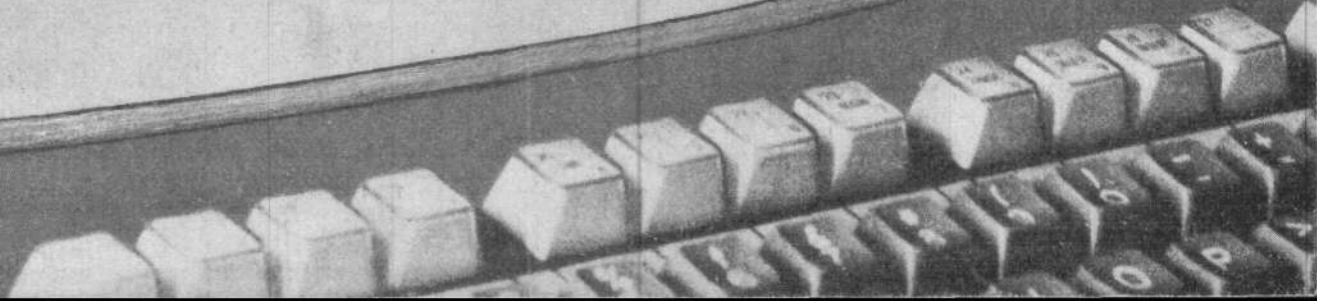
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Lyndon LaRouche on

Systems Analysis: White Collar Genocide



An Open Letter to Readers

At a time when "nuclear freeze" advocates are using antiwar rhetoric to promote a freeze on nuclear power plants, *Fusion* is not just a good magazine. It is the *only* science magazine fighting to continue the American tradition of progress.

The printing and mailing of our 1982 issues have been delayed because of our financial difficulties—difficulties that have been fostered by the same forces who bankroll the nuclear freeze and environmentalist movements.

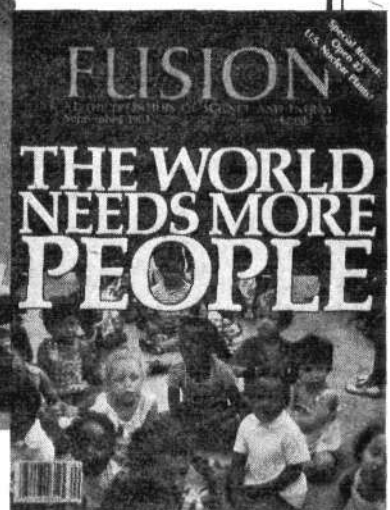
We resumed regular publication in September 1982 with a special format issue of *Fusion*. This October issue, which contains some of the feature material from the unpublished March-April 1982 issue, is our second special format issue. We plan to continue to publish more than one issue a month in order to send readers the highlights of all the back issues we have prepared, plus new material. How fast we can catch up to our regular schedule and our full 64-page format depends on you.

With your financial help, we can win this fight for America, and get *Fusion* out regularly to its 200,000 readers.

- Join the Fusion Energy Foundation today. Memberships are \$75 (individual), \$250 (sustainer), and \$1,000 (corporate).
- Send us a contribution to further our research and educational work and public lectures. Contributions to the FEF are tax-deductible.
- Donate subscriptions to your local schools, libraries, and legislators.



Paul Gallagher, Executive Director, Fusion Energy Foundation



FUSION

Vol. 5, No. 4 October 1982

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Lyndon H. LaRouche, Jr.

When applied to the planning of whole economies the *method* of systems analysis leads inescapably to genocide. The opposing Platonic theory of scientific inquiry is the most powerful weapon not only for destroying Malthusianism, but also for building the technologies required to prevent genocide.

25 Interviews with Dr. Stephen Dean and Uwe Parpart: India Prepares for the Fusion Age

From the Editor's Desk

As this second special format issue of *Fusion* goes to press, we are in the midst of a battle to defeat the nuclear freeze movement. There are three main points the FEF is making about the freeze in our campus debates and forums and in the media:

First, the freeze advocates a curb on civilian nuclear energy that would ensure the death of millions of people in the developing sector and enforce lower living standards here in the United States. Second, the hidden agenda of freeze leaders is to drag the United States into new, conventional wars. These wars, as freeze leaders like Gen. Maxwell Taylor publicly admit, would be fought in the Third World for the purpose of reducing so-called overpopulation and securing raw materials.

Third, is the necessity for the United States to rapidly develop directed energy beam technologies—the science to prevent nuclear war. This would give us a real defense against nuclear weapons by preventing the launching of nuclear missiles and by destroying the missiles in the stratosphere. Further, an Apollo-style program around the development of this frontier area of science would spur on fusion research, which must solve some of the same problems as beam research, and would force the revival of U.S. industry and the economy.

The real agenda of the freeze movement leaders, like that of the systems analysis crowd, is zero-growth and genocide. Pursuit of advanced technology, not arms control, is the only hope for world peace.

Marjorie Mazel Hecht

Marjorie Mazel Hecht
Managing Editor

P.S. Readers interested in editor-in-chief Steven Bardwell's comprehensive white paper "Beam Weapons: The Science to Prevent Nuclear War," should contact us.

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The views of the FEF are stated in the editorials. Opinions expressed in articles are not necessarily those of the FEF directors or advisory board.

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Note to Libraries and Subscribers

To comply with postal regulations, the issues of FUSION in Vol. 5 are numbered in the order in which they were printed and mailed. October 1982, Vol. 5, No. 4, follows September 1982, Vol. 5, No. 3, which follows December 1981, Vol. 5, No. 2. Subscribers who purchased a 10-issue subscription will receive all 10 issues. The FEF expects to publish 10 issues of FUSION in 1983, but only 4 issues in 1982. Highlights of the 6 remaining 1982 issues—January through August—will be included in future issues.

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Front cover: Inset in the computer screen is a mass grave in Kampuchea (Cambodia), where the Chinese-allied government killed 3 million people during its 1975-1979 reign. Photograph courtesy of the Kampuchean government. Cover design by Virginia Baier.

A Life and Death Question of Methodology

Economic science today is a continual paradox: It gives the wrong answers to the wrong questions, yet its adherents defend it passionately, and even its critics acknowledge its "iron laws." The dismal empirical performance of the latest economic *wunder-theorie*, "supply-side economics," for example, is overshadowed only by the admissions of its chief practitioner, Budget Director David Stockman, that it was a hoax to begin with.

The real problem of contemporary economics is not just that it doesn't work. The various brands of contemporary economics cannot succeed in putting life into a failing economy because they all have a fatal methodological flaw: They are based on systems analysis.

In this issue, noted economist Lyndon H. LaRouche, Jr., a member of the FEF board of directors, exposes systems analysis as one of the most pernicious and intellectually debilitating disciplines that afflict the world, along with its political children—cost-benefit analysis, zero-based budgeting, and the like. LaRouche shows not just that global systems analysis gives wrong answers, but that its methodology leads to *genocide*.

We have documented in many areas that *qualitative analysis* has always been, and remains today, the source of real intellectual discovery and the only effective tool for solving problems on a global scale. As LaRouche describes in detail, the basic methodological presumption of systems analysis is that *qualitative change does not exist*. This presumption, as he shows, guarantees not only fallacious and foolish extrapolation; much more important, it guarantees a denial of the basic causal features that make man's life and creative intellect efficient in the world.

Benjamin Franklin captured this paradox very nicely when he saw the first balloon launching. A companion remarked skeptically, "Fine, but what use is it?" to which Franklin replied, "What use is a baby?"

The fruits of systems analysis are not unfamiliar to most Americans. We suffered from its application in the Defense Department when Robert McNamara used cost-benefit analysis to justify dismantling the American military engineering capability; we suffered from its applications in the Office of Management and Budget, when Caspar Weinberger used its methodology to destroy America's manned space exploration program; and even today we continue to suffer when U.S. industry applies systems analysis in management decisions to cut capital investment in new technologies in favor of the higher return investment in real estate.

This systems analysis virus is not limited to the Western world. The latest issue of the Soviet popular science magazine *Priroda* (Nature) contains an article by researchers at the Computer Center of the Soviet Academy of Sciences describing their deep indebtedness to the systems-analysis-based Club of Rome for having provided the "pioneering work of Jay Forrester." In an astounding article, the deputy director of this Computer Center praises the zero-growth conclusion of the *Limits to Growth* studies, and, even worse, its method of "global systems dynamics."

Thus we have a situation where the so-called superpowers are setting themselves up for war over allegedly limited resources by devoting their economies not to producing more real wealth, in the Hamiltonian sense, but to shrinking, via systems analysis, the ability of their economies to grow.

This question of method is one of life or death, as LaRouche demonstrates. The method of systems analysis in itself leads to the denial of progress in new technologies because it denies the potential of human creativity; systems analysis leads to genocide because the method itself denies the possibility of development.

SYSTEMS ANALYSIS

White Collar Genocide

by Lyndon H. LaRouche, Jr.



Doctors and scientists in the dock at Nuremberg in November 1946, on trial for their crimes against humanity.

Part 1

When applied to the planning of whole economies, the *method* of systems analysis leads inescapably to genocide. The opposing Platonic theory of scientific inquiry is the most powerful weapon not only for destroying Malthusianism but also for building the technologies required to prevent genocide.

In 1932, there was an international conference to promote "eugenics" held in New York City.¹ The conference was sponsored by a blue-ribbon circle from the controllers of the American Museum of Natural History. The list included the mother of Averell Harriman and one William Draper. The delegation from Germany was dominated by Nazi race theorists; it was the Nazi presentations which colored the conference's proceedings. William Draper, later to be a U.S. Army general assigned to "reeducating" occupied Germany, was then full of enthusiasm for Adolf Hitler.²

The Draper Fund is today the most shameless among influential institutions demanding mass-murder of entire nations on the continents of Latin America, Africa, and Asia.³ Other activities spawned in association with the Dillon Read-linked Draper penetrate and corrupt numerous governmental agencies as well as powerful private corporations.⁴

Too many among the leading Malthusians of today are still fanatical supporters of the racist pseudoscience of "eugenics." To be more specific on the point: They are followers of Cecil B. Rhodes's proposal to wipe out major portions of the colored peoples of the southern part of the globe, this mass-murder to "make room" for the future breeding activities of the Anglo-Saxon stock, like Hitler, and like Hitler's 1932 admirers around the American Museum of Natural History. However, today's unreconstructed eugenicists have admitted such mentions only in private, among people they believe to share their own monstrous passions.⁵

Since Hitler's concentration camps were exposed at the close of World War II, the Malthusians have considered it prudent to avoid any conspicuously public association of themselves with eugenics. To replace Nazi-smelling eugenics, a new pseudoscience has been cooked up, and promoted as the putative "scientific" basis for genocidal policies such as the Carter administration's *Global 2000* and *Global Futures*.⁶ That Malthusian pseudoscience in currency today is called "systems analysis."

At their own conferences, such as the recent conference of the International Institute for Applied Systems Analysis held in Austria,⁷ some among leading Malthusians admit that their *Limits to Growth* "bible" was nothing but a deliberate hoax.⁸ "Systems analysis" is a pseudoscience cooked up solely for the purpose of brainwashing large sections of official institutions and populations, to conditioning the dupes into tolerating the kind of genocide proposed by Aurelio Peccei's Club of Rome. The genocide they propose, to fall heaviest on Latin America, Africa, and Asia, is intended to reduce the world's population to the level of 2 billion or fewer, and to accomplish this mass-extermination by projected dates as early as the year A.D. 2000—hence, the title of Carter's *Global 2000* report.

In short, Malthusian "systems analysis" today means mass-murder of peoples on a scale two orders of magnitude greater than the genocide perpetrated by the Austrian hippie, Adolf Hitler.

This super-Hitlerian evil is not limited to such Western circles as the Draper Fund, Rockefeller Fund, Aspen Insti-

THIRD INTERNATIONAL

HELD ON OCCASION OF THE THIRTIETH ANNUAL MEETING OF THE AMERICAN MUSEUM OF NATURAL HISTORY, NEW YORK

THE PURPOSE OF THIS EXHIBIT IS TO TAKE STOCK OF MAN'S PRESENT KNOWLEDGE ABOUT THE CONTROL OF SUCH QUALITIES IN FAMILY STOCKS IN RACES AND IN NATIONS. MORE BRIEFLY THIS EXHIBIT IS ABOUT



The entrance to the museum exhibit accompanying the Third International Congress of Eugenics in 1932 announced its racial breeding policy. The conference attendees (inset) elected as the international president Dr. Ernst

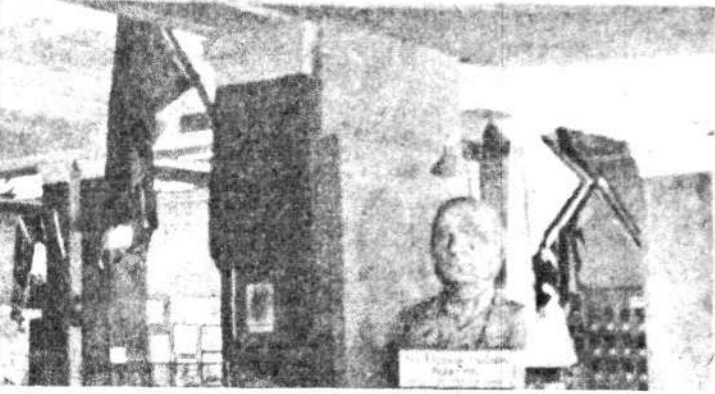
tute, George Ball, the World Wildlife Fund, and so forth. As the case of Kampuchea illustrates, the worst case of deliberate genocide in the 20th century to date was perpetrated by the Peking dictatorship upon the victims of Pol Pot's puppet regime. Henry A. Kissinger, Alexander Haig, and Thomas Enders were directly involved in making that genocide possible—as part of a secret deal with Peking.⁹ The friends of mass-murderer Peccei generally present the policies of the Peking regime as a world-class model for genocide in other continents besides Asia.

It is not merely Peking and some Western agencies which promote this genocide now. Within the intensive factional struggle over the leadership succession in Moscow, the "hard-line" faction of Boris Ponomarev includes some of the most fanatical mass-murderers in any part of the world, barring Peking itself. According to Western intelligence sources, these Malthusians penetrate very high levels of the Soviet political intelligence service, the KGB. The case of the influential son-in-law of Alexei Kosygin, Dzhermen Gvishiani, is a case in point. This genocidalist faction in Moscow is called the "global systems analysis" group, a group which is presently announced as preparing a Malthusian population reduction

EXHIBIT OF EUGENICS

INTERNATIONAL CONGRESS OF EUGENICS
NEW YORK CITY AUGUST 22 - SEPTEMBER 22 1932

THE IMPROVEMENT IN HUMAN QUALITY THROUGH PHYSICAL, MENTAL, AND SPIRITUAL AND ALL
RACIAL POPULATIONS IN THEIR TURNING FROM GENERATION TO GENERATION
IMPROVEMENT IN THE BREED OF MAN



American Museum of Natural History

Rudin. Rudin later authored the Nazi law defining Jews as noncitizens and trained the medical personnel that conducted Hitler's first extermination program, killing 400,000 mental patients.

proposal more drastic than President Carter's, for release sometime during 1982.

These facts lead us to three overlapping problems. First, the cross-penetration of the Soviet KGB and Western intelligence institutions, and at very high levels, is the most monstrous security problem facing patriots generally, as well as counterintelligence services in particular. According to highly placed officials of British intelligence, the Soviet-headed (Gvishiani) Vienna International Institute for Applied Systems Analysis (IIASA) is a two-way channel between the Soviet KGB and top levels of NATO intelligence services.¹⁰ The report of Dr. Alexander King and others on this point has been independently corroborated by a combination of facts in the public domain together with special investigations directed by this writer, including undercover penetration of relevant targets of interest.¹¹

Second, policies whose intended effects are nothing but such genocide have been embedded in the current policies of practice of the International Monetary Fund, the World Bank, and key agencies of the United Nations Organization. This has been accomplished largely by means of embedding fraudulent "systems analysis" con-

coctions, such as the Wharton School "econometric model," into the economic policy-shaping methods and procedures of such official institutions.¹² The "conditionalities" dogma of the International Monetary Fund is such an explicitly genocidal practice, as is the monetarist doctrine of Federal Reserve Chairman Paul A. Volcker.¹³

Third, systems analysis is, as we have already reported here, intrinsically a doctrine of genocide. Admittedly, the argument is sometimes made that the Malthusians have "misused" systems analysis. This has been heard frequently in discussions of the obviously fraudulent work of Meadows and Forrester.¹⁴ It is argued that systems analysis in and of itself could be used for either good or bad purposes. On the contrary, each and every effort to apply the assumptions of "linear equilibrium models" to any scale larger than short-term "microeconomic" tasks is by itself intrinsically genocidal policy-making.

This third point is the subject of this report: Our case is that applications of systems analysis to any large-scale system is intrinsically pseudoscientific bungling. When such bungling is applied to any aspect of an economy but special aspects of short-term "microeconomic" processes, the effect of introducing systems analysis is to promote devolution of the economy. When such applications to "macroeconomies" are made under present world conditions, the mere advocacy of "systems analysis" becomes in and of itself complicity in capital offenses against the Nuremberg Code, complicity in the crime of genocide.

From the standpoint of the language of the Nuremberg Code, specifically the draft of the Code elaborated by the leading U.S. representative, Justice Robert Jackson, we are in no way stretching the application of the literal language of international law. In tracing wartime Nazi genocide to the "euthanasia" pilot programs of the 1930s, and in other exemplary respects,⁹ the Nuremberg proceedings proved a causal, determining relationship between academic and bureaucratic policy-making and the actions of lower officials who murderously implemented the policies devised by the guilty academics and bureaucrats. Therefore, the Code specified the behavior of such white-collar policy-influencers to be as explicitly a crime against humanity as that of the SS thugs who directed the queues into the gas ovens. Academics and officials—white-collar mass-murderers—who "knew or should have known" the consequences to which their policy proposals must lead in practice, were to be held fully accountable in the future proceedings of international law.¹⁵

On such grounds, each of the contributing editors of the composition of *Global 2000* and *Global Futures* is an indictable international criminal. So is former Secretary of State Edmund Muskie, for promoting *Global 2000* with accompanying public statements avowing his knowledge that this was a population reduction policy of a sort which could be implemented only by massively accelerating the death rates in targeted nations. So is President Jimmy Carter, not only because his administration promulgated a policy of genocide, but because he established himself so consistently during his administration—within the limits of his mental capacity—as a fanatical Malthusian. Guilty

without a shadow of mitigating consideration, is the wicked Representative Richard Ottinger of New York. There are many others, including a man one Israeli official has described as the "the worst Nazi on two feet," Henry A. Kissinger.

As our listing of the three principal implications of systems analysis indicates, this is a subject which overlaps in a most significant way on many aspects of political intelligence work, history, and science. We limit ourselves in this report chiefly to scrutiny of key formal features of systems analysis, merely touching on some among other matters bearing most directly on the driving forces behind matters of formality.

Von Neumann and Morgenstern

One of the most appropriate clinical examples for understanding modern systems analysis doctrine and practice is the case of *The Theory of Games and Economic Behavior*, coauthored by the mathematician John von Neumann and the Vienna neopositivist and so-called economist, Oskar Morgenstern.¹⁶ It is the perversion of the name of science (von Neumann) to lend aromas of credibility to the intrinsically fascistic neopositivism of Morgenstern, which exemplifies the elaboration of systems analysis over the course of the postwar period.

We do not wish to exaggerate the direct influence of that book. The book approaches the dimensions of scale of the novel *Gone With the Wind*, but, lacking what were once considered the seductive touches of prurient interest in that novel, von Neumann's and Morgenstern's text has been often cited, but little read.

It is the *indirect* influence of the text which is to be stressed. If one attacked the arguments of systems analysts during any point of much of the postwar period, one often heard, "Have you read the *Theory of Games*?" (The fact that this writer was among the relatively few persons who had not only read it, but systematically examined all the text's principal features, was no deterrent to praise of the book from among specialists who had never read it through, but, like a voyeur ogling his neighbor's wife, merely admired it greatly.) It has served as one of that special sort of famous book whose influence is located in the fact that although generally unread, it is "there" to serve as a last word on this or that aspect of scientific opinion.

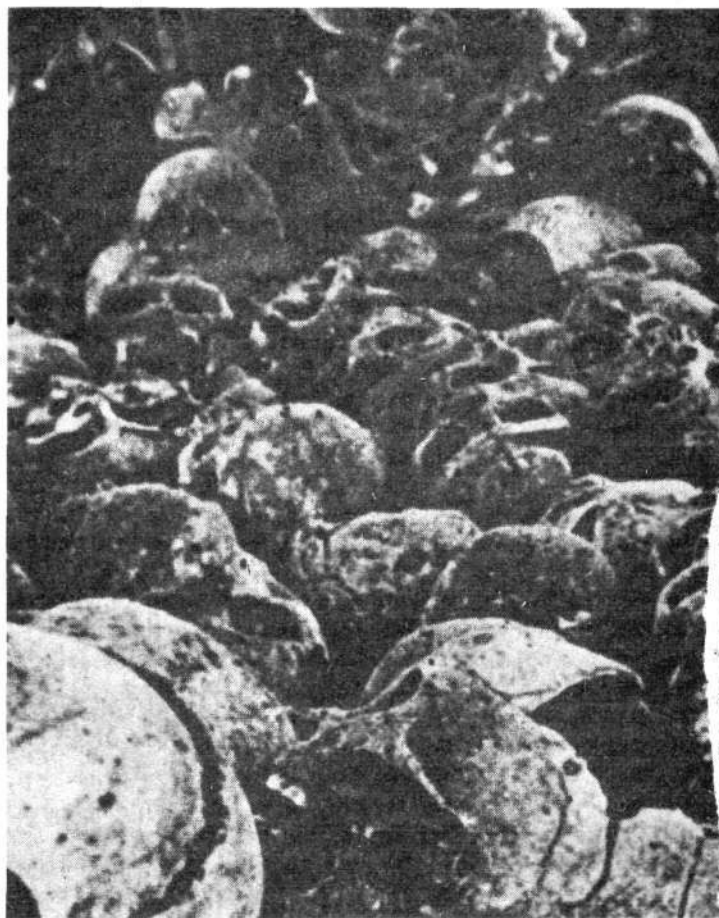
Read or not, the *Theory of Games* contains all the elementary features which have made modern systems analysis the practice of genocide.

From study of at least some among John von Neumann's works, and checking this against appreciations of him among scientists with whom he collaborated, there is no doubt that von Neumann was an unusually gifted algorithmist. Epistemologically, he was an illiterate, and therefore cannot be considered consistently either a mathematician or physicist by the classical standards of continental science.¹⁷ He was sometimes a very useful member of the team, provided other members of the team supplied the epistemological qualifications needed to point von Neumann's efforts in productive directions.

Oskar Morgenstern, philosophically a fascist in the genre of followers of Max Weber, was not the sort of team leader to point von Neumann's talent in either productive or even moral directions.¹⁸

The *Theory of Games* is based entirely upon two converging sets of assumptions. As putative economics, it is nothing but a rearming of the "hedonistic calculus" of Jeremy Bentham.¹⁹ As mathematics, it is lunatic numerology, a radically nominalist advocacy of methodological imbecility respecting every principle of scientific investigation established for continental science's development since Kepler. It is this combination of hedonism and numerology which is characteristic of every feature of contemporary systems analysis doctrine and application, including so-called econometrics.

Bentham is generally acknowledged as the father of 19th-century "British philosophical radicalism"—an ironical sort of title for an avowed pederast. Bentham did not reject any of the essential doctrine of earlier British empiricism, as identified with Bacon, Hobbes, Locke, Hume, Adam Smith, et al. Bentham carried Hume's immoral dogma concerning human understanding and "human



One of the mass graves in Kampuchea, where the Chinese-allied government of Pol Pot murdered 3 million people—

nature" to a radical extreme. Hence, the title "philosophical radicalism."

Bentham argued that mankind was incapable of any knowledge bearing upon social policy generally, or economic policy specifically, excepting the individual's own arbitrary perception of pleasure and pain: hence, *hedonism*. He continued his argument: that if one placed quantitative values of relative scale upon perceptions of pleasure and pain, the optimal balance between pleasure and pain experienced by individuals might be susceptible to arithmetical determination: hence the *hedonistic* (or, "felicitific") *calculus*.

During the middle of the 19th century, Bentham's proposal for such restatement of social policy and economic theory was taken up by the wicked godfather of the evil Bertrand Russell, John Stuart Mill. Mill, together with William Jevons, explicitly based the entirety of the modern doctrine of marginal utility upon the Bentham argument, that only the marginal pleasure and pain experienced among individual buyers and sellers determined economic processes. This was continued by Alfred Marshall, by J. M. Keynes, and was developed into a more radical form than

even Mill and Jevons undertook by Viennese neopositivists. For the latter, Morgenstern was an exemplary representative.

This aspect of the matter is well documented in all relevant primary and other sources.²⁰ It is the practical implications of shaping the policies of nations according to such hedonistic dogmas which are not generally understood.

The reason for lack of this latter sort of critical appreciation ought to be rather immediately clear. One can trace the consequences of applying such hedonistic dogmas, only by comparing the decisions made according to such dogmas with the actual effects of such decisions in real economies. This requires a mastery of an actual economic science; otherwise such a comparison cannot be made. It happens that every known economics department in the United States today teaches nothing but some variant of the hedonistic jargon of "utilitarianism." Some professional economists may have acquired skills from experience, but insofar as their alleged competence depends upon university training in this topic, they are all utterly quacks.

The *Theory of Games*, like all influential econometric reports today, assumes inclusively that economy is a system axiomatically governed by principles of mechanical equilibrium, and defines economic reality only in atomistic terms of individual consumers' propensities to buy and individual sellers' propensities to sell. It considers nothing bearing upon the processes by which the productivity of labor rises or falls, and therefore makes no distinction between investments (and other consumption) which increase that productivity and investments, and other purchases whose net effect on the productivity of economies is devolutionary.

Econometrics, like the *Theory of Games*, is not economics at all. It is Benthamite hedonistic sociology, an estimation of the social behavior of an anarchic market under governance of the hedonistic principle for individual buyers and sellers. The professedly fascist economics dogma of Professor Milton Friedman, which Friedman himself emphasizes to lead to legalization of the drug trade and other criminal forms of market activity, is nothing but a blatant illustration of the general moral condition of the economics profession as a whole.²¹

The result of such radical-sociological dogmas disguised as "economics" is a more radical version of the earlier "free trade" doctrine of the hoaxster and liar Adam Smith.

As Mathew Carey and others proved during the 19th century, Smith's doctrine of "free trade" was the direct cause for each economic depression the United States suffered during the first half of the 19th century.²² By driving down prices of both labor and produced industrial and agricultural goods, productive activities were relatively pauperized, to the effect of channeling growing ratios of money and credit into nonproductive forms of labor-intensive services, as well as various forms of explicit and slightly disguised ground-rent capitalization.

In Smith and Ricardo, as distinct from the later, radical economists beginning with John Stuart Mill, there is some



Courtesy of the government of Kampuchea

40 percent of the population—between 1975 and 1978.

recognition of the dynamics of real economic growth through agricultural and industrial production. With the influence of Mill, Jevons, Marshall, and Keynes, the last vestige of attention to real economics vanished from the ranks of the university-trained "economists."

Since the flows of money and credit determine, chiefly, whether or not labor is employed, and whether or not productive capacities in existence are used, dysfunctions in the processes of circulation of money and credit can collapse an otherwise intrinsically healthy economy, just as Federal Reserve Chairman Paul Volcker's policies collapsed the already monetarism-sickened U.S. economy into a new depression-slide.

By churning the flow of money and credit increasingly away from goods-production and related investment, into administration and labor-intensive services, a decreasing portion of the total labor force is employed in the production of goods. Since this occurs under conditions where productive investment is increasingly constricted,

Through such cancer in the credit and monetary processes of a society, even a healthy economy can be plunged into stagnation and, later, depression.

The majority among the founders of the United States understood this danger intrinsic to British "free trade" policies. For those and other reasons, the United States was established as a constitutional republic on the basis of an economic policy known as the *American System*. Although the term, *American System*, was first coined in U.S. Treasury Secretary Alexander Hamilton's 1791 Report to the U.S. Congress, "On the Subject of Manufactures,"²³ the name, *American System*, is correctly understood to include the principles set forth in Hamilton's reports on credit²⁴ and national banking,²⁵ as well as economic policy in the strictest sense of that term.

This *American System* was understood, then and later, to be the Americans' direct rejection of every policy of Adam Smith and Smith's British East India Company employers. Not only is this anti-Adam-Smith, *American Sys-*



John von Neumann



Dzhermen Gvishiani

"Econometrics is not economics at all. It is Benthamite hedonistic sociology, an estimation of the social behavior of an anarchic market under governance of the hedonistic principle for individual buyers and sellers."

Systems analysis economists, present and past.

the productivity of goods-producing labor cannot offset the contraction of the percentage of the labor force employed using modern technology to produce goods. The goods-purchasing power becomes concentrated increasingly in the hands of holders of capitalized ground-rent income and among purchasers whose incomes are derived from labor-intensive services. The ground-rent obligations of the labor force and productive enterprises soar, especially in such forms of ground-rent extraction as pyramiding of debt-equity ratios. To meet these kinds of pyramided debt service obligations, and to pyramid debt further (refinancing), individuals and corporations surrender savings, and later loot the stock of necessities of the productive process, all to meet these cancerous financial obligations.

tem entirely responsible for developing the United States as an industrial power over the 1789-1866 period; the successful industrialization of Germany, of Japan, and of northern Italy were directly based on the *American System*.²⁶

If some politicians consider Japan to be "unfair" today, this is only because the United States has been foolish enough to renounce its birthright-heritage, by adopting versions of the Adam Smith system, whereas a shrewder Japan adheres to the *American System* policy on which America's former greatness was premised. (How "unfair" of Japan not to be as stupid as we have become in such matters!)

The *American System*, as the policy of the Federalists, the Whigs, and Republican Party of the 1789-1866 period,

was called "protectionist," because it directed the power of the federal government to secure American industrial and agricultural producers fair prices for their products, as typified by *parity prices* for agricultural products in 20th-century practice. A parity or "fair" price is a price based on competitive standards of production—it is not a "subsidy"—plus a competitive rate of profit added to a competitive cost of production. This ensures that employers are able to pay fair wages and to also attract investment to agriculture and industry, fostering advances in general productivity of the economy.

This American System has the political effect of making the combination of industrialists, farmers, and labor potentially the strongest political and economic combination of power in the nation, keeping underworld elements and rentier-financier interest contained at a relatively weakened level of power. Henry C. Carey defined this during the 1850s as a "harmony of interest" policy: The common interest of industry, farmers, and labor in raising national

titution, and rock-entertainment sector of commercial traffic, a joint venture controlled by a combination of underworld and rentier-financier interests linked to the drug traffic. Take into account the increasing dependency of U.S. borrowers on high-priced credit from the drug-center financial institutions of the British Commonwealth's "offshore, unregulated" institutions, including the corrupt Canadian banking system. One begins to accumulate a picture of the relative degree of power which has been assembled by a combination of underworld elements and their rentier-financier partners.²⁸

This road to destruction of the United States is the policy of Professor Milton Friedman, and the policy of any nation which accepts the assumptions built into the *Theory of Games*.

What we face on these accounts is not merely wicked policy. The combination of underworld and rentier-financier interests benefiting from this ruin and looting of our nation—and others—is a powerful force, controlling much of the news media of leading nations, exerting great influence over our universities and leading forces of our major political parties.

Propose to return to the American System, and if your proposals are heard, you will be subjected to the wildest assortment of lying defamation by news media; you will be called perhaps an "agent of the KGB," "a fascist," "a right-wing extremist," "an antisemite" (because you attack underworld circles which happen to have Jewish names among their ranks), and a "cultish leftist." The forces controlling such news media will do more than spread lying defamation of this sort through news media and governmental agencies. They will kill, if they believe they can do this with relative impunity. They will otherwise use every resource, including their influence over corrupt governmental officials and agencies, to attempt to destroy you and your collaborators in other ways apart from outright murder.

This issue of the *Theory of Games* does involve important formal questions. It is no mere academic question. Fight those genocidal policies with even modest success, and you become a target for dirty operations by a section of the rentier-financier interests and their underworld allies—as this writer and the Fusion Energy Foundation itself have been subject already to years of wicked defamations and other harassment on this account, for their energetic promotion of modern technology.

To sum up the points we have made so far. The system outlined in the *Theory of Games* has two principal features for purposes of formal analysis. In its broadest aspect, von Neumann and Morgenstern degrade economies to mechanical sorts of linear equilibrium models. Under the best constructions possible in such terms of reference, an economy whose policies are adapted to the presumptions of mechanical equilibrium is axiomatically an *entropic process*, meaning that such policies must inevitably guide the economy into devolution ("depression"). The *Theory of Games* is much worse than merely a variant of linear equilibrium models. It is based exclusively on immoral



Adam Smith

John Stuart Mill

productivity and per capita wealth through technologically progressive investments in goods-production, transportation, and related infrastructure, must be made the basis for a conscious political alliance of these social forces, an alliance which must dominate the making of the nation's policies.

As we see in the United States today, and as we trace this from the 1876-1879 implementation of the treasonous Specie Resumption Act,²⁷ the British system of "free trade" increases the political and economic power of underworld and rentier-financier elements at the expense of industry, agriculture, and labor. Today, illegal drug traffic inside the United States amounts to more than \$100 billion a year, and is perhaps as large an item of national expenditure as the federal defense budget. Add the pornography, pros-



"Christianity is founded on the view of the universe as a process of lawfully ordered (evolving) continuing creation." Here, a spiral nebula.

axioms originating with the hedonistic calculus of Bentham. It is from this feature of the model that its intrinsically fascistic, genocidal implications are derived.

"Information Theory" and Economic Analysis

This writer's life's work as an economist places him entirely within the heritage of the American System. Yet, as is well known in leading circles worldwide today, within the context of the American System, this writer has contributed an important breakthrough, beginning in 1952, a breakthrough reflected in the LaRouche-Riemann method of economic analysis.²⁹ This breakthrough was prompted by the writer's enraged horror of two types of encounters beginning 1947-48. First, and the more significant of the two, was his encounters with what was then being widely promoted as "information theory." The second was his angered reaction to the kinds of atrocities typified by the *Theory of Games*.

The past decades' attempt to postulate a dogma of "information theory" with aid of statistical thermodynamics is, predominantly, an instance of a very bad doctrine premised on a very important phenomenon. It is the case, that all living processes, and also all progress in technology of production, must be seen from the standpoint of statistical thermodynamics as violating the "Second Law of Thermodynamics," the "law of entropy." Consequently, these interesting cases are described as *negentropic*.

It happens that Johannes Kepler proved conclusively, if implicitly, approximately 400 years ago, in his works founding modern mathematical physics, that the universe is *negentropic*, not *entropic*. This argument was restated

by Gottfried Leibniz against Newton's intrinsically incompetent view of the universe. Riemannian physics enables us to prove, in a far stronger way than was possible earlier, that the so-called law of entropy (Second Law of Thermodynamics) is a false and groundless fiction. The mere fact that our universe exists should be recognized as already conclusive proof that it is not dominated by the "law of entropy."

The characteristic, pathological feature of postwar "information theory" has been the argument that *negentropic* systems are exceptions within a universe which is overall *entropic*. This is not a new argument. It was the fundamental fallacy axiomatically embedded within the system of René Descartes. The same fallacy was argued strenuously by G. W. F. Hegel in his *Phenomenology of Mind*. The same Malthusian thesis, as elaborated by Cauchy's Jesuit controller, Abbot Moigno, is key to the method by which Augustin Cauchy destroyed the competence of French 19th-century science (anti-Cauchy exceptions such as Louis Pasteur noted). In its origins for modern European thought, in each influential case, the source of this recurring fallacy has been the Jesuit order and its Anglican accomplices (for example, Descartes, Hegel, Cauchy, Maxwell, Mach, et al.).

That is not to imply that the entropy dogma is in any sense a doctrine of the Roman Catholic confession.

The Roman Catholic confession is based on the *Nicene-Filioque* doctrine, as described by Saint Augustine, which is directly opposite to the cited form of Jesuit doctrine. Christianity is founded on the view of the universe as a *process of lawfully ordered (evolving) continuing creation*, in the same sense Philo of Alexandria prescribed for

Judaism. The consubstantiality-Filioque doctrine of Judeo-Christian culture defines the universe implicitly as *negentropic*. Saint Augustine traces the formal argument to Plato, in the course of accounting for the significance of the distinction between classical Platonism and Christian Neoplatonism, that distinction being essentially the Filioque principle.

This is otherwise reflected in the Judeo-Christian tradition from the Book of Genesis onward, as Pope John Paul II accounts for this in his recently issued encyclical, "On Human Work" (*Laborem Exercens*). It is through increasing the human population, through a process of dominion over nature, that mankind brings his willful practice *negentropically* into concurrence with the lawful ordering of the universe. It is only through advancement of technology in such ways as increase the potential relative population-density of society, that man proves that his method of scientific discoveries correlates with increasing the average individual man's power to command the lawful ordering of the universe.³⁰

It is not the results of a repetitive form of human practice (for example, ordinary isolated experiments) which provide proper authority for human knowledge. It is only the proof of man's ability to willfully direct those changes in his practice which increase potential relative population-density of societies, which tests empirically whether or not *our approach to making new technological breakthroughs* is consistent with increase of man's average power over the universe.

It is not to be considered accidental that Judeo-Christian influence has guided Western civilization to all its great achievements. Although we can find the same directedness of social policy in the ancient temple of Amon and the ancient Vedas, it has been the negentropic outlook intrinsic to Apostolic (Augustinian) Christianity which has in fact directed the past centuries' progress in civilization.

In this respect, at this level of fundamental considerations, Christian theology and science have identical views. The Jesuits are not, generally speaking at least, Christians, but a variety of Gnosticism.

Gnosticism is the generic name for a spectrum of pseudo-Christian (syncretic) cults, ranging from arianism through radical monophysite dogmas. Most immediately, Gnosticism was introduced to Christian institutions under Constantine, by the priests of the Roman imperial "mystery religions," the Roman imperial pantheon. Although the cult of Isis-Osiris-Horus dominated the syncretisms of Gnostic pseudo-Christianity, the driving impulse behind Gnosticism was an oriental cult known variously as the "magicians" or Mobads. The "Mother Earth" cult of the 19th-century Russian Orthodox church, like the "blood and soil" cult of the theosophist Nazis, is a typical expression of the "magician" cults.

The Jesuits, created by the Gnostic faction of the Eastern Orthodox Rite (Venice), were created to be an inquisitorial force and political intelligence agency modeled chiefly on the ancient Delphi cult of Apollo (Lucifer). Hence, the Jesuits' frequently used name for their method is the "delphic method."

The crucial feature of Descartes, Hegel, and Cauchy is not merely the fact that they were Jesuit agents. Jesuit training is not utterly incurable; redemption is possible even for a Jesuit. The crucial thing is that the methodological issue of the work of Descartes, Hegel, and Cauchy is nothing but the incorporation into their entire schema of the same "delphic principle" central to the prevailing interpretation of "information theory" today.

"Yes," the Jesuit—for example, Hegel—concedes, "living processes and technological advances do indeed appear to be negentropic from the standpoint of statistical thermodynamics. However, the universe as a whole is entropic."³¹ Or, another variant of the same Jesuit argument: "That appears to be true, but you must not overlook the fact that the universe is so *interconnected* that no understanding of higher things is possible for the human mind."

Take the latter form of the Jesuit's argument, the delphic sophistry of "interconnectedness," and examine briefly the geometric representation of that argument. From this, one begins to see immediately the central fallacy of Descartes's notion of physical space, and thus the nature of the fallacy underlying "information theory."

Imagine two wavy lines (Figure 1), not exactly parallel,³² but free to wave about as much as they like as long as one line never crosses or touches the other. Imagine these two lines to be extended, with that restriction, indefinitely, in both senses of direction. In such a scheme, it is impossible to prefer any combination of points selected from each of the two lines. All the points one might imagine are equally "interconnected."

That is the Jesuit argument illustrated in essence; that is Descartes's approach to physical space. That is also the root of the conventional postwar interpretation of "information theory," as well as the basis for the sociology of Max Weber. It is the derivation for the doctrine of the "triumph of the arbitrary will" adapted from Weber by Italian and German fascism, and also the social doctrine of "freedom" of Klaus Horn of the Frankfurt Sigmund Freud Institute today.

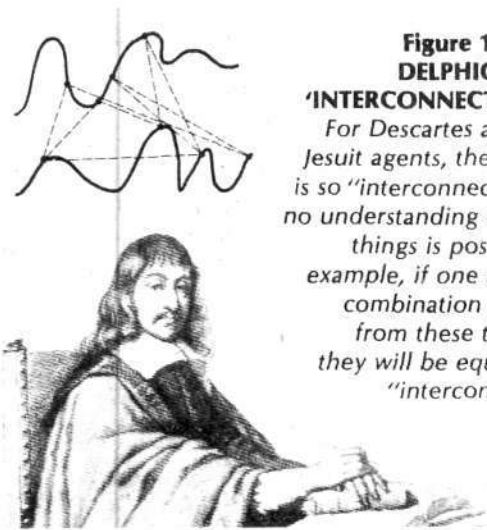


Figure 1
DELPHIC
'INTERCONNECTEDNESS'

For Descartes and other Jesuit agents, the universe is so "interconnected" that no understanding of higher things is possible. For example, if one takes any combination of points from these two lines, they will be equally well "interconnected."

The Jesuit, like Weber, does not propose that the irrationality of "interconnectedness" should lead one to the radical anarchist's *value-free* society. Both the Jesuit and Weber, like the fascists, insist that each group in society must select some values and associated goals arbitrarily, and must seek to impose those arbitrary "self-interests" upon the rest of society: for example, modern international terrorist dogma.

This is the same, implicitly fascist presumption respecting values already defended by David Hume, and conveyed by such routes as Bentham's hedonistic calculus into the essentially fascist dogma of the *Theory of Games*.

Home from World War II, this writer had no stomach for fascist ideology, even when that ideology was posed in such academic guises as mechanistic physics, "information theory," or the *Theory of Games*. From 1947 onwards, the writer was driven by intellectual passion colored by ruthlessness to get to the bottom of these fascist-tending academic productions. This inquiry led him to a year's wrestling with Georg Cantor's notion of ordered transfinite, and from the vantage point of this, to a grasp of the meaning of Bernhard Riemann's 1854 habilitation dissertation, "On the Hypotheses Which Underlie Geometry." This writer's comprehension of those matters has been greatly enriched in respect of detail over the 29 years since this first discovery, in 1952, but everything essential in the complementary contributions of Cantor and Riemann remains otherwise exactly what it was 29 years ago. It has stood up well against all tests and challenges.

It was out of this breakthrough, by way of Cantor, into grasping the point Riemann actually outlined, which enabled this writer to discover and prove the intrinsic falseness of "information theory"—as that theory was conventionally presented. To apply this to biology was beyond the means of training and other resources the writer saw reasonably within his reach. So, he chose the alternative: economics, a matter in which he had already had both some formal and practical expertise. The result was what is so far reflected as approximation in the form the LaRouche-Riemann method of computer-oriented economic analysis has been applied to date.

This discovery by the writer, the discovery of the basis for quantifying technology as a causal principle of quantifiable economic growth, rests upon two interdependent lines of proof. It rests primarily on a proper restatement of "human ecology." The elaboration of that restatement in the terms of mathematical physics, the formal side of the question, is the second line of proof.

This apparatus provides the most efficient and most conclusive means for proving that systems analysis practice is intrinsically the practice of genocide today.

"Human Ecology"

The kernel of the Malthusian dogma, even before Malthus copied this dogma from the Venetian Gianmaria Orte, is the cited Jesuit dogma that man's *negentropic* characteristic is in fatal disharmony with the *entropic* character of the universe as a whole.³³ Earlier than Orte,

the Jesuit order promulgated the same thesis in the form of the China-modeled physiocratic cult: that human society can exist only by "sucking negentropy" from a fixed-equilibrium universe, to the effect of increasing the entropy of the universe as a whole. Adam Smith's defense of colonialist looting—holding back technological progress of subjugated colonies and quasi colonies—was premised upon the physiocratic argument.

It was this physiocratic argument, as embedded in Smith's *Wealth of Nations*, which Treasury Secretary Alexander Hamilton refuted in the most devastating manner, by proving from American colonial and other experience that the wealth of American agriculture (in particular) was to be traced to human improvements in the fertility of "wild" and stubbornly infertile forest.³⁴

Hamilton's argument coincides with subsequent evidence. Except for Britain, whose margin of growth was obtained predominantly from looting of other nations, every successful development of modern economies has been accomplished under the guidance of policies which were either directly modeled upon Hamilton's devastating refutation of Smith, or upon the influence of the same



mercantilist and cameralist science from which the predominant views of the Founding Fathers of the United States were developed.

The argument of the lying Smith is carried to its logical, Nazi-echoing extreme by the Draper Fund's General Maxwell Taylor today. Taylor typifies the loudest voices among those evil wretches who demand wholesale exterminations of populations of Latin America, Africa, and Asia, on the grounds that the continued existence of those populations is eating up natural resources which the United States requires for its consumption during the course of the remainder of this century, as well as during the coming century.³⁵ This is the argument used to propose the policy that "overpopulation" of the developing nations is the "most vital strategic issue" confronting the United States.³⁶

The same argument is made in a manner which is of special clinical interest among certain pseudo-Christian religious circles today. These circles are led by a ruling triad of Jesuits, Eastern Orthodox, and Anglican hierarchies, and infect both Protestant hierarchies and pagan cults worldwide through such conduits as the Geneva-based World Council of Churches and the U.S. National Council of Churches. These circles, which were directly implicated in the networks which deployed Ali Ahmed Acga in the recent (May 1981) attempted assassination of Pope John Paul II, openly state the issue to be one of conflict between the Apostolic (Nicene) doctrine and the so-called Gnostic Bible. Elizabeth Dodson Gray is among the most obscenely aberrant of such Gnostic fanatics.³⁷ Georgetown University's Dr. Steven Mumford, and Henry Kissinger's old sidekick, Donald Lesh, are open exponents of this Gnostic attack upon Christianity.³⁸

The Gnostic complaint is chiefly directed against the most fundamental of the injunctions of the Judeo-Christian tradition respecting secular policies: "Be fruitful and multiply, and fill the earth and subdue it."³⁹

The Papal encyclical *Laborem Exercens* concurs on these matters most exactly with what this writer and his collaborators have stated repeatedly in lectures and published locations for more than a decade. Since the encyclical speaks for the doctrine of hundreds of millions of Catholics, as well as all Christians (on this specific point at

least), we prefer to emphasize now the Pope's choice of formulation here, rather than our own.⁴⁰

Man is the image of God partly through the mandate received from his Creator to subdue, to dominate, the earth. In carrying out this mandate, man, every human being, reflects the very action of the Creator of the universe.⁴¹

As man, through his work, becomes more and more the master of the earth, and as he confirms his dominion over the visible world, again through his work, he nevertheless remains in every case and at every phase of this process *within the Creator's original ordering* [emphasis added].⁴²

If the biblical words, "subdue the earth," . . . undoubtedly include also a *relationship with technology*, with the world of machinery which is the fruit of the work of the human intellect and a historical confirmation of man's dominion over nature [emphasis in original].⁴³

In these arguments, and in the text of the encyclical as a whole, the Pope's statements are direct echoes of the writings of both Saint Augustine and the great 15th-century canon-Cardinal of the Papacy, Nicholas of Cusa. Indeed, the greatest single impetus for the development of modern science, as well as the establishment of the body of natural law of nations defined by Christian humanism, was Cusa. Cusa's scientific work was the general programmatic outline of everything modern science has accomplished in respect of fundamental discoveries since, especially, the work of such giants as Kepler, Pascal, Leibniz, the Monge-Carnot Ecole Polytechnique, and the 19th-century giants, Riemann and Cantor. The Pope addresses classical Christian doctrine to modern problems, an appropriate work in the most obvious sense of appropriateness, but in principle there is no innovation respecting fundamentals asserted within the encyclical.⁴⁴

The motive for the attempt to destroy Christianity among today's leading "environmentalists" is the Malthusians' allegation that Christianity, and most emphatically the institution of the Papacy, is a stubborn obstacle to the

"The motive for the attempt to destroy Christianity is the Malthusians' allegation that Christianity, and most emphatically the Papacy, is a stubborn obstacle to the genocidal policies of the Club of Rome."

Pope John Paul in Poland, June 1979.



Saint Augustine



Nicholas of Cusa

genocidal policies of Aurelio Peccei's Club of Rome.⁴⁵ The Malthusian fanatics insist that the Gnostic version of the Bible must be substituted immediately for the extant Christian version of the Bible.

The kernel of the Malthusians' theological objections to the Christian Bible is that that Bible places mankind morally above the plants and animals, whereas Gnosticism degrades man to the level of mere moral equality with plant and animal life—to a status of equality with snail-darters and lousewort. On this, Elizabeth Dodson Gray has made herself an object of public ridicule. Less mentally unstable personalities of the Malthusian cabal make the same sort of argument as the ultraneurotic Mrs. Gray, but do so in the relatively more "academic" style of Dr. Steven Mumford.

Once the reader is clear on the nature of conclusive refutation of this cited, Gnostic form of Malthusian argument, the reader has established therewith the basis for a rigorous scientific proof that "environmentalism" is not only pseudoscientific quackery but a genocidal form of criminal association.

Indeed, the application of systems analysis to the purpose of attempting to defend the genocidal doctrine of Meadows and Forrester⁴⁶ depends, methodologically, upon applying to human populations a parody of the same statistical methods commonly applied by ecologists to study of plant and animal populations. For convenience, we reference the statistical doctrines of Ronald A. Fisher.⁴⁷

Although Fisher's statistical methods are absurd once the empirical locus is shifted from small groups of interacting species to the biosphere as a whole, those statistical methods depend upon included assumptions which have relative validity for immediate contrast of animal to human populations. The necessary, conclusive connection between the special case proven by such a comparison, to the more general case, for the biosphere as a whole, will be made clear as we proceed, making the first comparison our point of initial approximation.

If the human species were considered only in terms of the crudest of man's hereditary, biological dispositions, we must speak of such primitive ancestors as Pleistocene hominids. Such forebears of our modern human species represent the ecological population-potential of a rather intelligent baboon. If we attempt to project the worldwide potential relative population-density of such a primitive ancestor for Pleistocene conditions on earth, we would be most generous if we estimate the potential population as high as several million individuals.

In contrast to that, the human population of today is currently estimated to be in the order of four and a half billion. Unless would-be mass murderers such as Aurelio Peccei and Maxwell Taylor have their way, the human population is expected to reach six to six-and-a-half billion by approximately the close of this present century. If human populations were subject to the kinds of determination implicit in Fisher's work, or the procedures of Meadows and Forrester, the human species could never have risen above several million unwashed disease-ridden babblers scampering about, chiefly, in tropical and semi-

tropical savannas.

Even so simple, so obvious a fact is sufficiently conclusive that it instructs us that study of human populations must proceed from a twofold starting point.

First, it is clear that human and animal populations are in no way comparable in the immediately characteristic features of their species-reproductive processes. Second, a related point, it should be obvious that the characteristics of human species-reproduction must be adduced by concentration on the essential distinction between the modes by which humans and animals respectively develop the material preconditions for production and existence of succeeding generations.

As a matter of first approximation, we observe that the possibility of increase of the scale of human populations is associated with man's modification of that behavior by which the material preconditions for human existence are produced: *the increase in the productivity of human labor, through what we term today "science" and "technology."* Increases in productivity of animal species do occur within the biosphere as a whole, but only through biological variation in species, or through man's intervention to modify animal behavior "from above." That is, in first approximation, the crucial empirical distinction upon which any competent study of "human ecology" must begin.

What we must measure, from the beginning of every study of human ecology, is the effect of changes in the characteristics of human productive behavior, in terms of the average number of individuals who can be self-sustained by that society's production for an average area of habitable terrain. We must measure the *potential* density of such populations, before and after changes in productive behavior, and adjust the notion of average area for variability in quality of various regions of habitable terrain.

That is the general meaning of what otherwise might appear to some readers to be a frightening mouthful of words: *potential relative population-density*. We must interpret all actual and proposed changes in society's productive behavior by the single parameter: Do such changes increase or fail to increase society's potential relative population-density? We must, first, assort those types of changes in human behavior which variously tend to increase, simply to maintain, or to lower societies' potential relative population-densities. Beginning with such an assortment, science must discover the principles of physics (in the largest sense of that term) which account to us for the reasons "why" this assortment must be the case.

Not only must science discover the reasons "why?" Conversely, the study of science from the standpoint of increases in potential relative population-density, is the only secure basis for judging what does and what does not meet proper standards for scientific knowledge.

Respecting this converse thesis, it follows rigorously and conclusively that the authority of science can not be premised on repeatability of any mere aggregation of isolated experiments—at least, not the ordinary varieties of such experiments. Insofar as human behavior is repet-



"The possibility of increase of the scale of human populations is associated with man's modification of that behavior by which the material preconditions for human existence are produced: the increase in the productivity of human labor, through what we term today 'science' and 'technology.'" Above, Mexican agricultural students.

itive, that repetition itself approximates the fixed behavior of animal species. Experiments based on the assumption of simple repeatability of action and results in isolated instances have no authoritative bearing on the lawful composition of the universe.

This is illustrated most simply in the following manner.

To the extent that a society subsists in terms of a relatively fixed mode of productive behavior, it does indeed confront the variety of "raw materials crisis" of which the "Chicken Littles" of the "environmentalist" cacophony complain so much today. Although there are no absolute limits to supply of the natural resources man may require for increased populations, each level of technology does imply a set of *relative limits*: at least this is so to the extent that the level of technology is not significantly improved in society's general practice.

"Human ecology" measures this properly from the following starting point. We define a self-reflexive relationship between the whole population and its continued existence, through the successive mediations of the population's goods-producing portion of its labor force, and the goods output produced for the entire population by the productive activities of that portion of the labor force.

Essential services, such as medicine, hygiene, science,

and engineering generally, are not ignored. These are necessary, although not goods-productive portions of the labor force. Their positive influence is to improve the productivity of the labor force directly by services to households, and also through mediation of technological advances employed by the goods-producing (productive) portion of the labor force. These essential services are sustained out of a part of the total product created by the goods-producing labor force.

In the first approximation view of this self-reflexive process, we measure the average cost of producing and sustaining individual members of households in terms of the total cost represented by the goods-producing labor force of that society (that population) as a whole; this becomes the measure of the population's cost of reproducing itself. We measure the market-basket components of the totality of average individual consumption requirements in terms of this approach to cost.

Thus, we trace the cost of each element of the total goods market-basket for a society to the included portion of total cost represented by the cost of exploiting natural resources to the extent needed to provide sufficient raw materials to provide the amount of final product of that category required by the society as a whole.

If, then, the cost of exploiting a certain category of natural resources rises significantly, the need to allot increased portions of the total available labor force to that exploitation means deductions from the total amount of productive labor available to the society as a whole, a contraction of output as a whole, and a reduction in the effective productivity of the society as a whole. By producing less per capita of the labor force, less is produced per capita for the entire population: Fewer persons can be sustained by a fixed ration of labor force—the potential relative population-density of the society falls accordingly.

In ordinary, conversational reference to such problems, laymen think in terms of relatively rich and poorer sources of ores (for example). A poorer ore is one which requires more productive labor to extract some constant quantity of usable raw material. Similarly, we take into account the need to go further and to dig deeper, as nearby sources of natural resources/raw materials are depleted.

relative population-density.

The maintaining of a constant potential relative population-density therefore requires some minimal rate of progress in the technological level of productive practice. The gains in productivity realized through extension of use of relatively more advanced technologies offsets the declines in productivity caused by depletion tendencies. Breakthroughs in productive technology have the effect of redefining the entire spectrum of natural resources practically available to society.

It should be clear to any reader who reflects upon what we have just summarized, that no fixed (repetitive) mode of human technological behavior corresponds to successful perpetuation of human existence. *Even the maintenance of a fixed level of population requires a constant change in human behavior*, constant advances in the general level of technology of practice.

This is key to the fallacy of assuming that a collection of



Johannes Kepler



Lazare Carnot

"Science is not competently defined as an accumulation of theorems based on repeatability in isolated experiments. Science is properly defined only in terms of some adducible principle of hypothesis which we are able to prove efficient in ordering successive scientific revolutions."

Plato's principle of the hypothesis of the higher hypothesis guided the work of the continental European scientists from Kepler to Cantor and Riemann.

These and related considerations lead us properly to a twofold generalization about humanity's "raw materials" problems. First, "natural resources" and associated problems of society are defined in terms of average productivity of goods-producing labor. Second, what represents a usable form of natural resources for society is determined by what we are able to exploit efficiently in terms of existing technologies.

So, in the approach we have just broadly described, we judge that if a society adheres to a relative fixed level of technology, the variety of natural resources available to it is delimited in range, and the cost of exploiting such a spectrum of natural resources must tend to rise through apparent depletion of the relatively richest and more accessible grades of such categories of resources. The effect of such depletion is a collapse of the productivity of society, and a consequent decline in the potential

isolated, ordinary sorts of scientific experiments can supply authority to science.

The only possible proof of agreement between human knowledge and the lawful ordering of the universe is the proof that a *certain ordering of knowledge* is consistent with man's successful mastery of the universe. The only available measure of success is man's ability to maintain and improve society's potential relative population-density. Since, even to maintain (hypothetically) a constant potential relative population-density requires advances in technology, and therefore successive scientific revolutions, our definition of *science* must be brought into practical agreement with this simple fact.

Man's successful practice is therefore primarily located in an adducible ordering of those kinds of discoveries which subsume successive, successful, scientific revolutions. It is such adducible, consistent principles of succes-

sive scientific discovery which are the only possible, only available concept of what the term *science* ought to mean.

In other words, science is not competently defined as an accumulation of *theorems* based on repeatability in isolated experiments. Science is properly defined only in terms of some adducible principle of *hypothesis* which we are able to prove efficient in ordering successive scientific revolutions, in successfully overthrowing the theorems held in high esteem by preceding generations of scientists. This is the principle which Plato elaborated as his notion of the *hypothesis of the higher hypothesis*, which is, not accidentally, the fundamental principle guiding the work of Bernhard Riemann, Georg Cantor, and every other major discoverer in the work of continental European science from William Gilbert and Johannes Kepler, through Leibniz, Monge, Gauss, et al., into Riemann, Weierstrass, and Cantor.

We prove the validity of such a principle of hypothesis

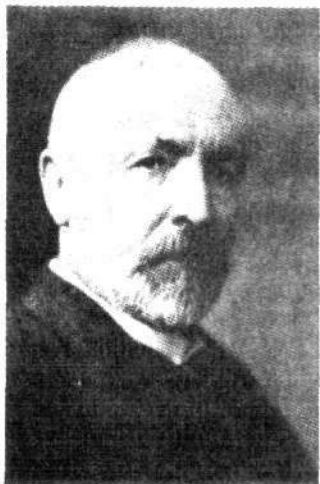
modern science generally are traced in literature to the dialogues of Plato, as Saint Augustine did this in emphasizing where Christianity subsumed and otherwise differed from Platonism. What we stress in this present context, as we alluded to this point earlier in this report, is that the Judeo-Christian doctrine, as analyzed on this point by both Philo of Alexandria (for Judaism) and by the disciples and early fathers (for Christianity), is that the Judeo-Christian principles freshly affirmed by the recent encyclical, *Laborem Exercens*, have been the enlightenment of conscience which has guided the greatest leaders and enlightened populations of Western civilization to each of the principal accomplishments effected by our civilization during the recent 2000 years. Cusa's demonstration of the interconnection of theology, science, and law of nations not only exemplifies this connection, but, as we have already stressed, after the work of Dante Alighieri, it was Cusa, more than any other person since the A.D. 1268 catastrophe in Europe, whose influence produced both the modern civilized nation-state republic and the impetus of modern science.

In the wake of the lying William Houston Chamberlain, and the experience with Chamberlain's pet Austrian hippie, Hitler, we have tended to forget the exemplary role of German Jewry in promotion of classical German culture—to the point that Hitler's antisemitism is crucial to understanding fully the decline of German culture in the postwar period. In the aftermath of the magnificent 1653 defeat of the Hapsburgs, the great Elector of Prussia enacted the first modern law of religious toleration, to the specific included purpose of recruiting Huguenots and Jews to contribute to the creation of a modern Prussian state. It was this cultural enrichment, not any other consideration, which developed Prussia as the leading force for the emergence of 19th-century Germany from the rubble and ashes of the Thirty Years War of 1618-1648. This included, contributing role of these Jews ought to be seen as exemplary of the principle we stress.

For fear of being accused of drifting into maudlin sentimentality, working scientists surround themselves with a protective aura of "amoral objectivity." Yet, each among us, in any scientific profession, physics, economics, or what-have-you, who has accomplished anything of genuine importance in his or her field, cannot but be acutely aware of the overwhelming importance of "moral influences" in giving passion and direction to what are too often viewed from the outside as "purely objective" scientific accomplishments. The impulse to make one's ephemeral, mortal life good, by contributing something good, something of durable benefit to the breadth of contemporary and future generations, is the passion which drives original thinkers to muster what might otherwise seem so difficult as to be a repelling allotment of efforts.

As the scientists' moral judgment is shaped, and as policy influentials of public and private institutions choose what is to be done with scientific contributions, so the human condition is shaped.

Since the parallel work of René Descartes and the 17th-century British empiricists, it has become increasingly



Georg Cantor



Bernhard Riemann

by correlating the results of the action of such a principle of hypothesis with increase in the potential relative population-density of society.

The Theological Connections

It is from this scientific vantage point that Apostolic Christianity has repeatedly defended the exclusive validity of the Nicene doctrine of *consubstantiality*—the perfect *consubstantiality of the Trinity*—and the subsumed *Filioque* principle of Western Christianity. It is a grave error of fact, as well as of theological argument, to propose that this Christian doctrine ever depended upon "blind faith," unsubstantiated inspiration of individuals.

This is not, as some readers might tend to misjudge the matter, the intrusion of a theological question into deliberations of science.

The systematic foundations for scientific theology and



The oligarchical faction viewed its colonies simply as sources of loot. This 1776 British cartoon illustration (anonymous) depicts the Wise Men of Gotham (King George's ministers) killing the goose (America) that laid the golden egg, because the goose would not lay two golden eggs a day.

fashionable among most of us (this writer excepted) to divide human opinion into two, respectively watertight compartments: science versus all of the so-called moral disciplines, including politics. This arbitrary division, usually attributed to the French Enlightenment, or to the influence of the Jesuitical Hegel and his successors in Germany, has become today the axiomatic division between "hard sciences" and "liberal arts." That dichotomy is utter rubbish, stoutly defended despite what ought to be its transparent frauds.

It is for related reasons that most educated persons today, including professional physicists, find themselves so frequently incapable of understanding the work of Kepler, Pascal, Leibniz, or of leading German scientists into the second half of the 19th century. It was unthinkable to any among those greatest scientists of this span that thinking about the physical universe should be divorced from scientific theology. Excepting Enlightenment-corrupted elements, such as Thomas Jefferson, the majority of the Founding Fathers of the United States shared the same outlook as Kepler and Leibniz on this point.

In connection with this present report, it becomes necessary, unavoidable, to indicate why Leibniz, like Cusa,

was correct in repudiating any watertight divisions within natural philosophy. The inseparability of modern science's method and accomplishments from the consubstantiality principle of Philo's Judaism and Christian theology, is indispensable for a competent overview of science.

Since empirical proof shows that only a *principle of hypothesis* is congruent with the lawful ordering of the universe, man is obliged to conclude that the universe is in a constant process of evolutionary development, from lower to higher orders. This has no similarity to the Darwin-Huxley hoaxes. It is a lawfully ordered evolution, of the sense of evolutionary causality implicit in the principle of hypothesis. This principle of hypothesis thus corresponds as the reflection into human knowledge of a *lawful principle of continuing creation*, as Philo of Alexandria argued. This principle of continuing creation is the *Logos* of the Gospel of Saint John and the Nicene Creed. It is the active expression, the work of, the Composer who is continually creating the universe to ever-higher orders—Leibniz's point in his reference to "this is the best of all possible worlds."

So far, that is Plato's argument, as reflected in his *Timaeus* dialogue. Saint Augustine puts the matter thus.

Plato was correct in his view of the organization of the universe and man's proper role in that universe. However, it was indispensable to bring this truth to man, into the human knowledge and practice of the individual in society. Hence, Philo's Messiah and Jesus Christ. As man born of woman, and yet also consubstantial with the Logos and Composer, Christ becomes the mediation by which individual man locates himself or herself as *imago viva Dei*, in the image of the living God, in the imitation of Christ. Man so subordinates his will to becoming an instrument of the work of the Logos, becoming at-one in work with the Composer of the continuing creation which is our universe.

This is not "mere theology," in the sense that "mere theology" is associated with arbitrary, blind faith. Any assumptions respecting the fundamental issues of science which do not concur with that view of consubstantiality are, provably, intrinsically incompetent as science in even the narrow sense of scientific knowledge. Yet, even as individual persons adhere to this principle as if in "blind faith," it is a ruling philosophical world outlook, a governing moral principle of conscience and practical will through which a society so self-governed is directed to the service of the Good.

The leading religious-hierarchy enemies of humanity know this fact; the Jesuits, the Anglican hierarchy, the Eastern Orthodox hierarchy, and the witting Malthusian Gnostics of the Protestant bodies' hierarchies. For that reason, they act in witting practice to attempt to destroy Christianity—in favor of the magician cults of Gnosticism. They attempt to remove the influence of a Christianity they know to be the efficient, leading opponent of the Malthusians' efforts to virtually eradicate science from human practice.

In a related way, the leading Jesuits (especially) are fully aware that "systems analysis" is nothing other than the anti-Christian cult of Gnosticism translated into mathematical disguises for manipulation of policies of nations. The Jesuits, who have been the leading advocates of this anti-Christian, Gnostic dogma, have been occupied over centuries, as exemplified by the cases of Descartes, Hegel, Cauchy, et al., in the effort to destroy the influence within science of precisely those fundamental methodological conceptions—the principle of hypothesis—on which all fundamental progress in science has depended and continues to depend.

Ecology and Economic Science

Every leading branch of economic science—as distinct from Jesuitical hoaxes such as British political economy—was premised on the ecological perception we summarized a few paragraphs earlier. The American System, on which the successful rise of the United States was directly premised, was directly an outgrowth of an explicitly anti-British economic science, most emphatically Alexander Hamilton's adoption of Gottfried Leibniz's 1671 *Society and Economy* as the chief conceptual basis for design of the American System.

Throughout known history, which is to emphasize the

recent 2,500 years of Mediterranean-centered civilization, there have existed only two general sets of policy outlooks for the ordering of society's economic and related affairs. The one, typified by the American System, is known in classical sources as the *city-builder* or *republican* current, and as *mercantilism* or *cameralism* in the history of 17th and 18th-century Europe and America. The adversary view, defended by Aristotle, was known during the fourth century B.C. by the alternate name *Persian Model* or *oligarchical model*. As the American System of economic science was based on the city-builder or republican model, the chief adversary of the American System, the British system of Smith, Malthus, Ricardo, Mill, Keynes, Friedman, et al., is a direct copy, in all essential features, of the oligarchical model.

The oligarchical model, classically defined by the outlines for a proposed "Western (Macedonian) Division of the Persian Empire," and by the model of the Roman Empire and Roman law, locates the exclusive source of wealth of society in raw materials. If human labor is included as a "natural resource" in oligarchical schemes, human labor is treated merely as a term of animal labor, as a biologically determined value (natural resource).

The oligarchical model denies the existence of profit in the sense that the practice of industrial societies generates profit. The only income of proprietorship, according to the oligarchical or physiocratic doctrine, is *ground-rent*, a straight tax on use of natural resources, imposed by ownership of those natural resources. This ground-rent is extracted either as direct charge of rent for use of natural areas, or in the form of financial rent, the latter chiefly through rent extracted as pyramided debt service applied to real estate holdings, and to manufacturing, commerce, and so forth, treated in the manner of real estate holdings.

The republican policy defines the wealth of society as originating entirely in improvements in the productive powers of labor. This argument was most influentially elaborated for 17th-century Europe by the circle of the great Tomaso Campanella of Naples. The wealth of nations, Campanella and his circle emphasized, is not the result of such accidents of geography as natural resources. The source of the wealth of a nation is its people, specifically the development of the productive powers of those people through what we term today technological advances in the mode of production.

This principle, as outlined by the Campanella circle, formed a central feature of the 17th and 18th centuries' European science of statecraft, which, for this reason, was named *cameralism*. This was known in France by the alternative name of *mercantilism*. This science of statecraft included every area of government: law, military science, science as such, and economy and matters of currency, credit, and taxation. The correctly understood connection between improvements in conditions and techniques of production and production itself formed the central point of reference for this science of statecraft.

Gottfried Leibniz, trained in both German cameralism and French mercantilism, effected a revolution in science and economic science during the same several years, 1672-

1676, he completed the work of his initial development of the differential calculus.⁴⁸ His *Society and Economy*, published during this interval, is the principal reference point for studying Leibniz's revolution in economic science.

This breakthrough in economic science centered upon Leibniz's insight into the broader implications of the heat-powered machine, "by which one man can accomplish the work of a hundred others."⁴⁹ Although Leibniz's immediate technological success in this work was his encouragement of the first successful steam engine,⁵⁰ his actual view was much broader. He envisaged the use of heat to power machines as a matter of general, universal principle. Accordingly, he defined both economics and physics through rigorous attention to the implications of the heat-powered machine as an exemplification of a general principle of human existence.

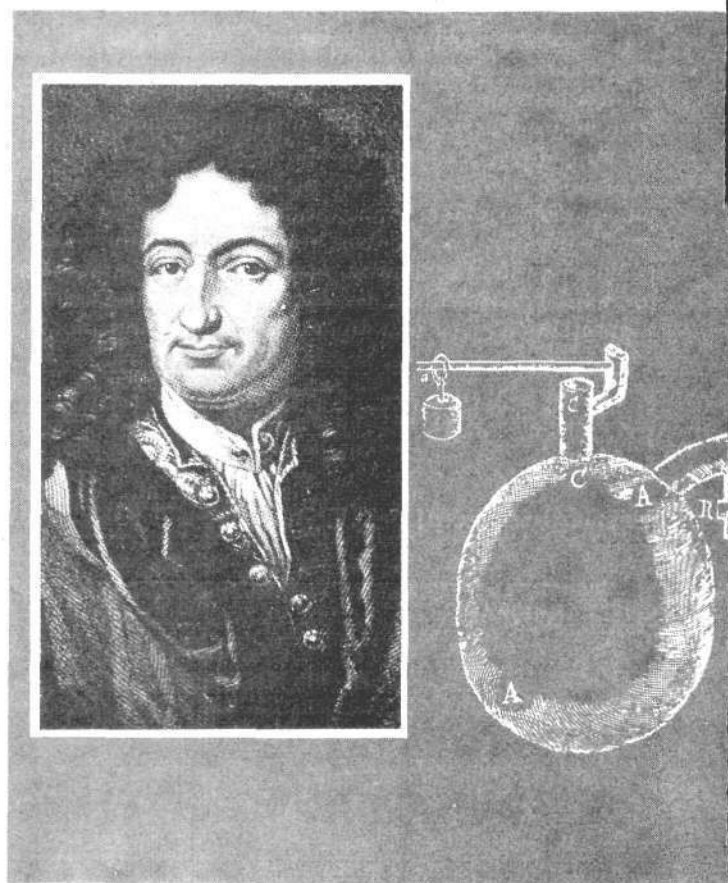
Leibniz's approach to the related set of questions focused upon the effects of such machines upon productivity. The power to accomplish *work*, as compared with the output of a man producing without aid of a heat-powered machine, or producing with a different heat-powered machine. The comparative effects of different kinds of heat-powered machines on the productive output of the goods-producing laborer defined the notion of *power*. The notion that some ordering principle underlay the ordering of heat-powered machines was the ground on which Leibniz introduced the conception and term *technology*. These three terms (conceptions) elaborated by Leibniz represented a revolution in mercantilism-cameralism, and placed economics on a new, more rigorous footing as economic science.

This development in economic science was also an integral part of Leibniz's contributions to the founding of thermodynamics. Into approximately the 1815 Treaty of Vienna, continental science predominantly recognized no line of division between what we today called physical science and economic science. Both were subsumed under the study of *technology*. This, at least, was the case for the science of continental Europe and for the American circles associated with Benjamin Franklin, the latter self-consciously situated within the heritage of Leibniz. The case of the Ecole Polytechnique under the leadership of Gaspard Monge and Lazare Carnot is not only key to any competent history of modern science, but bears directly upon the topic of this report.

The French term for Leibniz's *technology* was *polytechnique*, just as *physical economy* was the alternate term for *technology* in Germany during the 18th century—into the 19th. The chief purpose of the 1794-1814 Ecole Polytechnique was that of functioning as a "technology driver" for the accelerated development of the French economy. (On this account, the work of the 1794-1814 Ecole Polytechnique served as the model for the great reforms of West Point military academy under the leadership of Commandant Sylvanus Thayer.) It was this economic task orientation (applied science) which energized the Ecole's world leadership in fundamental advances in scientific knowledge, especially in the interrelated development of thermodynamics and the theory of functions.

The central features of the scientific method of the Ecole Polytechnique were the rejection of the algebraic methodological outlook, in favor of the geometric (Monge), and the rigorous emphasis on Leibniz's refutation of the fallacious conceptions of Descartes. (The Ecole rightly considered the Newton case as too contemptibly obvious to require any view except as to be seen as a degenerate parody of Descartes's errors.) The work of the great economists of the Ecole of that period, Claude Chaptal, Charles A. Dupin, et al. was not something added to the main work of the institution. Carnot himself emphasized the inseparability of economic science from science in general.⁵¹

Under the dictation of the 1815 Treaty of Vienna by the Venice-imposed Foreign Minister of Russia, Capodistria,⁵² Lazare Carnot was exiled from France, and the Jesuit agent Augustin Cauchy was sent into France from Italy with the assignment to destroy French science along lines of destruction outlined by Cauchy's Jesuit controller, Abbot Moigno.⁵³ This destruction of French science was judoed by Alexander von Humboldt.⁵⁴ Carnot spent the remaining years of his life (1815-1823) in Berlin, collaborating with von Humboldt to move exiled French science into Prus-



Leibniz saw the use of heat to power machines not just as a means "by which 1 man can accomplish the work of a hundred others," but as a universal principle. His discus-

sia—over vicious opposition from the Jesuit G. W. F. Hegel, Savigny, et al. from within Berlin University and Viennese and British influence within Prussian court circles. This complemented a long-standing alliance between French mercantilist leaders of Benjamin Franklin's orbit and Göttingen University.⁵⁵ Although pre-1815 German science had its own independent basis in Kepler and Leibniz (most emphatically), French science and technology of the 1794-1814 period was the most advanced in the world at that time. It was the incorporation of the work of Fourier, Legendre, et al. into the hospitable climate of a vigorous and creative Prussian science (Berlin, Göttingen) which gave Germany world supremacy in science through World War I.

Unfortunately, during the middle of the 19th century, the program under which Cauchy was deployed into France was focused also upon German science, as is exemplified by the subversive cases of Leopold Kronecker, Richard Dedekind, and Hermann Helmholtz—even prior to the savage attack on German intellectual life by the neo-Kantians and Max Weber. So, despite the great leadership of Felix Klein, and the outstanding German scientists developed through the 1920s by the German system,

the vigor of German scientific thought waned considerably after the assaults, directed chiefly from London, Paris, and Vienna, during the period from the 1850s through the early 1880s. Since Cantor's work on transfinite, providing essential complement to Riemann's physics, there has been significant progress in extending the application of Riemannian physics, for which application Einstein's work is an important, if partially flawed example, but no new breakthroughs in respect to methodological fundamentals.

This is not a properly contestable judgment of the past century of science. If one recognizes, first, the correctness of the Cantor-Riemann program, relative to all visible alternative programs of scientific method, and examines the most celebrated of recent scientific propositions against that backdrop, the case is almost completely proven by that means alone. If one goes further, to examine the leading methodological controversies in science over that period, including the successful influence of the fraudulent attacks on Riemann, Cantor, and Felix Klein by Bertrand Russell from the 1890s into approximately 1927, the extent to which Russell's arguments, and those of Viennese neopositivism, are hegemonic today, leaves no margin for reasonable doubt on the point we have just stated.⁵⁶

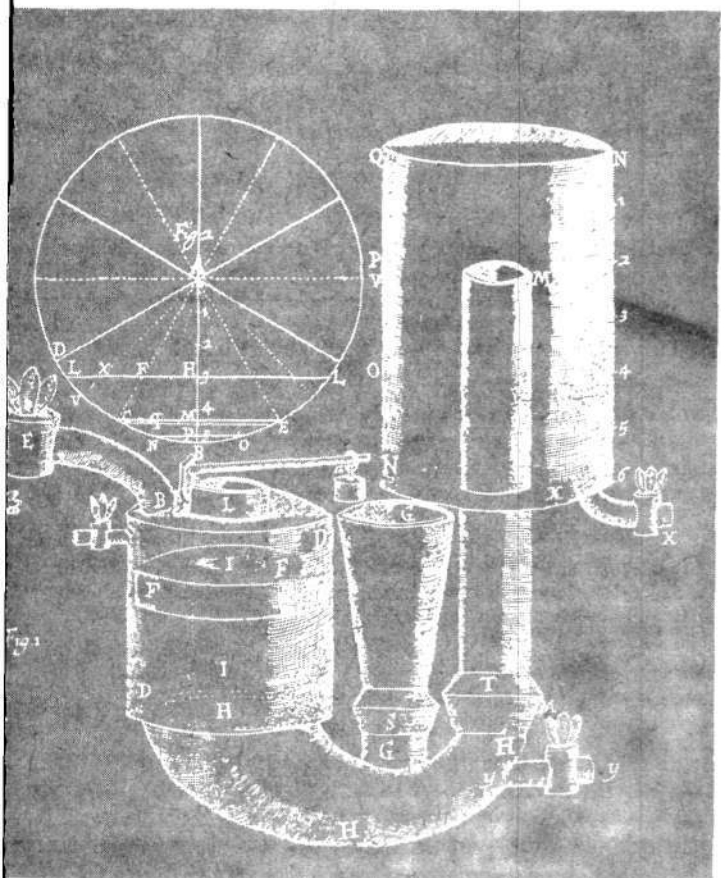
The basic program for reconstruction of science today is clearly to reexamine afresh the span of progress from the founding of modern mathematical physics and its method, by Johannes Kepler, and to trace progress from Kepler's successors, Pascal and Leibniz, through the work of Riemann and Cantor. This is done most advantageously by included emphasis on the developments in science and technology in northern Italy during the latter 19th century; the circles associated with Cavour there complement Felix Klein's Göttingen as the last bastion of scientific vigor into the 1920s, and the Italians, including Riemann's student Betti, have contributed some of the most sophisticated insights into the direct connection between political and scientific methodological issues.⁵⁷

It is the leading anti-Jesuit Italians who generally show the keenest insight into who is doing what to whom and why in leading issues of modern history, scientific issues included. Italian patriots have been toe-to-toe against Venice and Venice's Jesuit thugs for centuries, and have the bitterest and clearest knowledge of who and what the enemies of civilization are.

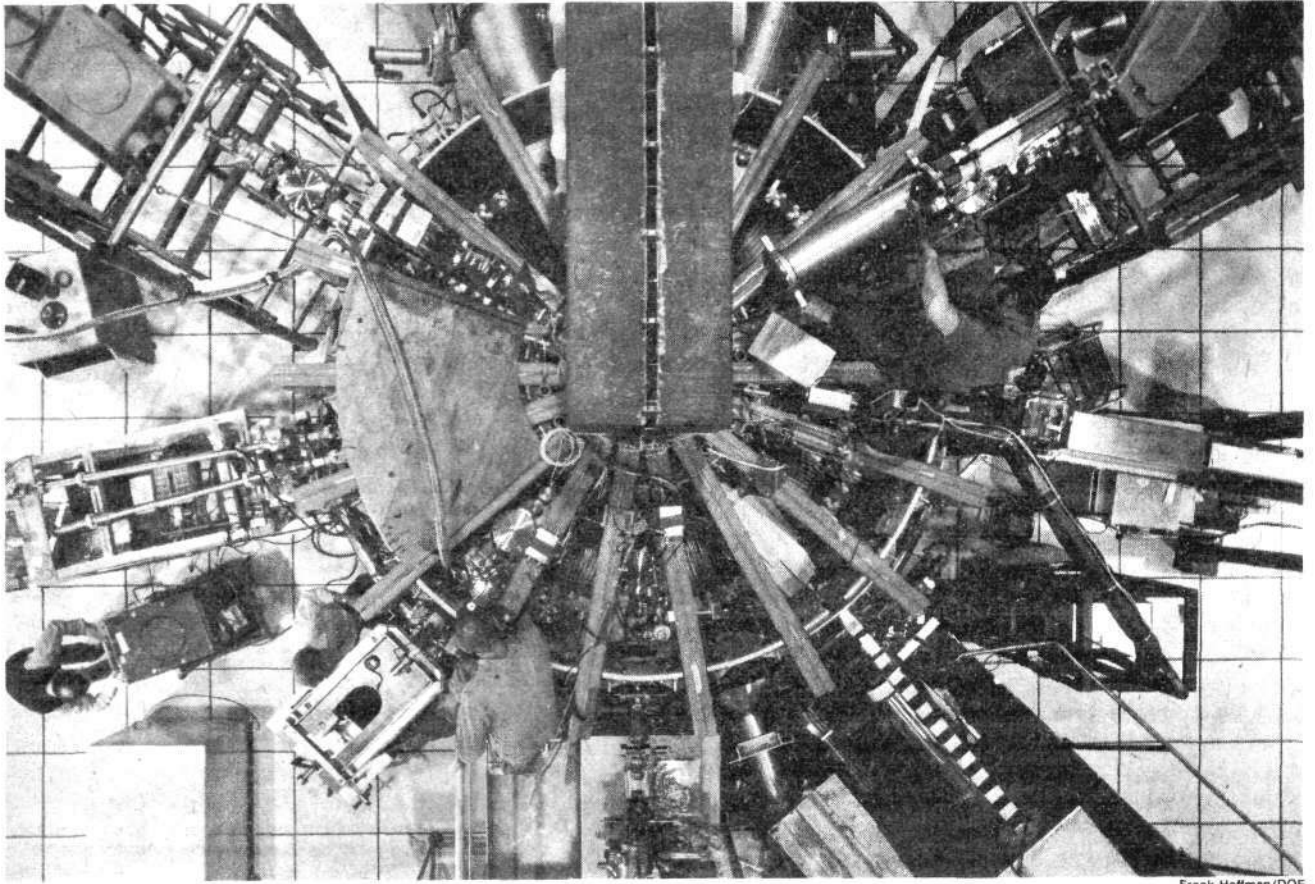
There is perhaps no better vantage point from which to conduct such a reexamination than the standpoint of economic science, the standpoint of Leibniz's approach to technology.

If we attempt to treat a society as a "system," then, from Leibniz's vantage point, we define the work accomplished by such a system as a whole as the increase in the potential relative population-density of the system.

This means that it is absurd, as well as merely incompetent, to define work in terms of isolated activities within society. The attempt to define the total work of society as the sum of its single individual activities is clearly nonsense. The question is, to what net effect do all of the



sions with Denis Papin led to Papin's development of the world's first direct action steam engine in 1707 (above).



Frank Hoffman/DOE

The rate of "injection" of more advanced technologies is the key measure of a society's potential relative population-density. Here, technicians work on the low-temperature cooling apparatus for the superconducting magnets on a fusion experiment at Oak Ridge National Laboratory.

activities of society aggregate? How do we measure the difference between a quantity of activity which does not increase the potential relative population-density, and the case in which the nominal same quantity of aggregate activity characterizes a society undergoing decline in potential relative population-density?

The proper method must be to begin with the system as a whole. First, we must determine whether all of the activities of society do or do not aggregate to an increase (or maintenance) of potential relative population-density. Having effected that primary measurement, we must then examine the reasons that a quantity of activity allotted in one mode is a contribution to an increase, and the same quantity differently allotted contributes to the net effect of overall decline.

Mere inspection of historical evidence suffices to prove that the determinant of such differences is the rate of "injection" of more advanced technologies through investment and reinvestment in goods-producing activities of industry, agriculture, and so on. That is the premise for all economic science since Leibniz, most emphatically including the American System (and its continuation by Japan today).

At first glance, it appears to us that advances in technology correlate with necessary increases in the amount of energy transmitted in a useful form per capita of the population, and with trends toward increase of the operating temperature (or equivalent) of the heat-manufacturing processes energizing powered machines and analogous features of manufacturing processes. The application of chemistry to agriculture, and the influence of German chemists upon American practice in this respect, is among the most useful and obvious points of departure for a general analysis of the energy-technology-productivity process.

The ability of mankind to transmit advances in culture (for example, through combined classical and scientific education in schools and culture of daily practice) into increases in per capita productivity of the goods-producing ration of the labor force, depends upon what Hamilton describes as "artificial labor";⁵⁸ greater capital-intensity, including increases in energy density, in the productive processes of industry and agriculture, and also in the essential infrastructure of goods production and distribution, such as transportation.

This historical view of the matter is a sound basis for

national policy. However, if we seek to refine this correct policy conception, to the purpose of determining relative priorities of development more rigorously, more effectively, we run directly against a crucial problem.

This is the problem attacked by the LaRouche-Riemann method of economic analysis. If energy correlates with technology in the manner we have indicated, how can we measure energy to the effect of mathematically describing a causal connection between increases in efficient energy density of the productive process and rates of increase of productivity?

This can not be done for as long as we cling to measuring energy (Aristotelian [energeia]) in scalar units such as calories, joules, watts, and so forth. It is on this point, which Einstein's work failed to grasp adequately, that the complementary work of Cantor and Riemann becomes indispensable. Although the case against systems analysis can be made, and that conclusively, without resort to the LaRouche-Riemann method, that latter method provides the most direct and comprehensive proof, and a form of proof which leads directly to positive applications.

Lyndon H. LaRouche, Jr. is one of this century's outstanding thinkers. A frequent contributor to *Fusion*, LaRouche's work in economics, philosophy, and epistemology has received worldwide recognition for its depth and originality. LaRouche's work has also led to his being named by the Club of Rome and its cothinkers as the most dangerous opponent to Malthusian thinking. A founder of the Fusion Energy Foundation in 1974, LaRouche has been on the FEF board of directors since 1980.

Notes

1. An account of the 1932 eugenics conference can be found in R. Zubrin, "The American Museum of Natural History, Fascist Roots of Global 2000," *New Solidarity*, April 13, 1981, p. 5.
2. Gen. William Draper, Jr., went on to found the Draper Fund and Population Crisis Committee in the 1960s. Writing in the spring 1971 newsletter of the Victor Bostrom Fund, the predecessor of the Draper Fund, the general likened the developing nations to the Kruger Park Wild animal reserve and asked, "Who will be Park Ranger for the Human Race? Who will cull out the surplus in this country or that country when the pressure of too many people and too few resources increases beyond endurance? Will the death-dealing Horsemen of the Apocalypse—war in its modern nuclear dress, hunger haunting half the human race, and disease—will the gaunt and forbidding Horsemen become Park Rangers for that two-legged animal called Man?"
3. See, for example, L. Wolfe, "General Maxwell Taylor, the Soviets and Global 2000," *Executive Intelligence Review*, April 14, 1981, p. 52.
4. L. Wolfe, "World Wildlife Fund and Population Crisis Committee/Draper Fund Sponsor Global 2000's Attack on Science," *Executive Intelligence Review*, March 31, 1981, p. 54.
5. This writer coordinates his efforts with sources placed in position to receive confidences from key figures among these circles.
6. *The Global 2000 Report to the President, Entering the 21st Century*, published in spring 1980, was commissioned by President Carter in 1977 and written under the direction of the U.S. State Department and the White House Council on Environmental Quality. *Global Future: Time to Act* is a follow-up report with the recommendations of the *Global 2000* authors, published in Jan. 1981. Both documents are available from the Government Printing Office.
7. The IIASA conference convened Sept. 14, 1981 at the Institute's headquarters at Laxenburg Castle near Vienna. Laxenburg was a summer home of the Hapsburgs.

8. In fact, while *The Limits to Growth* was still having its intended shock effect, the official "critique" of the study was published by members of the Science Policy Research unit at the University of Sussex, England, the British Secret Intelligence Service center that spawned the leading U.S. systems analysis institutes. See *Models of Doom: A Critique of The Limits to Growth*, ed. H. S. D. Cole et al. (New York: Universe Books, 1973). This critique became the basis for various purported development models for the developing sector, which assumed finite resources and sought "sustainable" economic growth, as did the original *Limits to Growth* report.
9. Statement of a surviving member of the Lon Nol government who had direct dealings with Enders, U.S. chargé d'affaires in Phnom Penh, as corroborated by relevant officials directly involved during the relevant period in the region. The secret agreements with Peking recognize Peking's "interest" in depopulating Southeast Asia and other areas of non-Chinese populations, and repopulating those Peking-occupied regions with ethnic Chinese. It is because of such agreements that the United Nations Organization has covered up the Peking/Pol Pot genocide in Kampuchea.
10. A Scandinavian counterintelligence agency doubled one of its nationals, who had formerly been a Soviet intelligence asset. The double, operating under this control, was guided to high levels of the Soviet KGB in Vienna. As the Austrian press leaked the result of this small enterprise, the top KGB official proved to be the son-in-law of Alexei Kosygin, Dzhermen Gvishiani. Gvishiani, the Soviet head of the Vienna-based International Institute for Applied Systems Analysis, attained that position through NATO's cosponsorship of both the creation of IIASA and Gvishiani's appointment.
11. Dr. Alexander King, a founder of the Club of Rome who served as former director general and also general secretary of the Organization for Economic Cooperation and Development for 20 years, discusses these connections in a lengthy interview, "Club of Rome Founder Alexander King Discusses Goals and Operations," by L. Murawiec and D. di Paoli in the *Executive Intelligence Review*, June 23, 1981, p. 18.
12. The Wharton School's "model" is interfaced with the United Nations Organization's econometrics, as well as the U.S. federal government's Office of Management and Budget.
13. At a Nov. 1978 address at Warwick University in England, then-candidate for Federal Reserve Chairman Volcker identified himself with the "controlled disintegration" dogma earlier elaborated in the 1975-1976 *1980s Project* policy drafts of the New York Council on Foreign Relations. This means that when Mr. Volcker reports his policies were introduced to "fight inflation," Mr. Volcker is lying very savagely, and very, very wickedly. Volcker's policies were designed and intended to do nothing but wreck the U.S. economy from within, and to create international money-market conditions forcing genocide in developing sector nations.
14. This was stressed by Club of Rome representatives at the IIASA conference in Sept. 1981 (see note 7). W. Meadows and J. Forrester are the authors of the original *Limits to Growth* study commissioned by the Club of Rome (published in paperback by Universe Books, 1974).
15. This point is elaborated in a series of articles on Nuremberg crimes in *New Solidarity* during January, February, and March 1974. Also, see N. Rosinsky, M.D. "Bioethics: A Final Solution for U.S. Medical Science," *Fusion*, July 1980, p. 57, which discusses the comments of Leo Alexander, an American medical doctor who was special adviser to the chief counsel for war crimes at the Nuremberg Tribunal trials of Nazi doctors, and their application to the current U.S. situation.
16. O. Morgenstern and J. von Neumann, *The Theory of Games and Economic Behavior* (Princeton, N.J.: Princeton University Press, 1944).
17. The term "continental science" was defined as an epithet of British hatred against the followers of Kepler, Pascal, Leibniz, et al., over the period from the 17th century to the present. This writer, plainly, adheres to the anti-British faction of "continental science."
18. The best analysis of the work of Max Weber known to date, is that of Dr. Helmut Böttiger, who has summarized his work to this end in a recent conference in Mainz, West Germany. Some of Dr. Böttiger's papers on this subject are currently awaiting publication. The philosophically fascist, Weberian features of the joint *Theory of Games* text were stressed by Professor Morgenstern in a debate he held with this writer at New York University during autumn 1971. The Weberian thesis, a mere rewording of the Jesuit dogma, is that the only values in society are arbitrary values and goals adopted irrationally by groups within society. From this doctrine springs directly Weber's sponsorship of the "people's party" (*völkische* movement in Germany), and also the fascist outgrowths of populism in Italy (Michele, Sorel, Mussolini), and in the form of the Nazi doctrine of the "triumph" of the irrational will.

19. The connection among Bentham and later British and Viennese schools of political economy is documented more than adequately in two published sources: Carol White, *The New Dark Ages Conspiracy* (New York: New Benjamin Franklin House Publishing Co., 1980); and L. LaRouche, Jr., and D. Goldman, *The Ugly Truth About Milton Friedman* (New York: New Benjamin Franklin House Publishing Co., 1980). Where notes are not indicated on this connection, hereinafter, these two references are intended.
20. *Ibid.*
21. *The Ugly Truth About Milton Friedman*, appendix.
22. Cf. A. Salisbury, *The Civil War and the American System* (New York: Campaigner Publications, 1978).
23. N. Spannaus and Christopher White, *The Political Economy of the American Revolution* (New York: Campaigner Publications, 1977).
24. *Ibid.*
25. *Ibid.*
26. See, for example, D. Sneider, "The American Roots of Japan, Inc.," *Fusion*, Aug. 1981, p. 44; also, ongoing research by Uwe Friesicke, Michael Liebig, and George Gregory.
27. Cf. Salisbury, *The Civil War*, and LaRouche, Goldman, *The Ugly Truth*, on Specie Resumption Act.
28. D. Goldman, K. Kalimtgis, and J. Steinberg, *Dope, Inc.* (New York: New Benjamin Franklin House Publishing Co., 1978).
29. The LaRouche-Riemann model studies are reported regularly in the *Executive Intelligence Review*, which, along with the Fusion Energy Foundation, developed the model. Some basic references are U. Parpart and S. Bardwell, "Economics Becomes a Science: Lyndon LaRouche's Riemannian Economic Model," *Executive Intelligence Review*, May 1, 1979, p. 15; S. Bardwell and U. Parpart, "Economics Becomes a Science: A Riemannian Model of Economic Development," *Fusion*, July 1979, p. 32; and Carol White, "The Riemann-LaRouche Model: Breakthrough in Thermodynamics," *Fusion*, Aug. 1980, p. 57.
30. This thesis has been elaborated in a number of published sources, including books such as L. LaRouche, *A 'Gaullist' Solution for Italy's Monetary Crisis* (New York and Milan: National Democratic Policy Committee, 1980), and L. LaRouche and J. Cheminade, *France Après deGaulle* (Paris: European Labor Party, 1981).
31. Compare the theses of Teilhard de Chardin with those of Lecomte du Nouy, for immediate postwar discussion of this Jesuit thesis.
32. The importance of this illustration was pointed out by FEF director of research Uwe Parpart during a 1981 seminar in West Germany.
33. The origin of Malthus's thesis in the work of Orte has been conclusively proved with aid of work of Italian researchers.
34. A. Hamilton, Report to the U.S. Congress, *On the Subject of Manufactures*, 1791. Also, see note 23.
35. L. Wolfe, "Gen. Maxwell Taylor," *Executive Intelligence Review*, April 14, 1981, p. 52.
36. L. Wolfe, "Kissinger Retools Global 2000 As U.S. National Security Doctrine," *Executive Intelligence Review*, March 24, 1981, p. 52.
37. See Gray's book *Why the Green Nigger: Re-Mything Genesis* (Wellesley, Mass.: Roundtable Press, 1979). Because of its unfelicitous title, the second edition of the book was brought out under a new title in 1981, *Green Paradise Lost*, by the same publisher. Codirector with her husband, David Dodson Gray, of the Wesley, Mass., Bolton Institute for a Sustainable Future, Gray describes her mission as drawing out the ethical and moral implications of the *Limits to Growth* document. Gray's central thesis is that man is no better than the animals. Therefore, she says, the concept of man's rightful dominion over nature must be extirpated from Christianity.
38. For documentation on this point, see L. LaRouche, "The Jesuits Charge That LaRouche Is 'An Agent of the Vatican,'" *Executive Intelligence Review*, Nov. 17, 1981, p. 35; Dr. Steven Mumford, "Population, the Church, and Global Security," *Humanist Magazine*, Jan.-Feb. 1981; L. Wolfe, "A Campaign for Genocide," *New Solidarity*, Sept. 28, 1981, p. 1; and L. Wolfe, "Genocide Lobby Leads Conspiracy Vs. Church," *New Solidarity*, Aug. 13, 1981, p. 7.
- Donald Lesh, the former executive director of the U.S. Association for the Club of Rome, was an aide to Helmut Sonnenfeldt at the National Security Council under Henry Kissinger in 1969-70. Lesh, along with William Hyland, set up Kissinger's European desk at the National Security Council. From there he was dispatched to Potomac Associates, the group which handled the Club of Rome's work in the United States until the formation of the U.S. Club of Rome in 1976. Lesh now directs the Global Tomorrow Coalition, the umbrella organization that coordinates support for the *Global 2000 Report*. Lesh also consults with Mumford.
39. Pope John Paul II, *Laborem Exercens*, translated into English by the Daughters of St. Paul, 1981, p. 14.
40. Cf. LaRouche, *A 'Gaullist' Solution*, passim. Cf. also, LaRouche, *The Power of Reason* (New York: New Benjamin Franklin House Publishing Co., 1979), Chap. 2, passim, for an account of the origin and development of this view by the writer.
41. *Laborem Exercens*, p. 14.
42. *Ibid.*, p. 15.
43. *Ibid.*, p. 19.
44. Address by Helga Zepp-LaRouche, Conference of the International Caucus of Labor Committees, Mainz, West Germany, Nov. 5, 1981.
45. See L. Wolfe, "Genocide Lobby Leads Conspiracy Vs. Church," *New Solidarity*, Aug. 13, 1981; and L. Schulman, "Papal Encyclical Takes a Stand in Defense of Science, the Human Mind," *Fusion*, Feb. 1982, p. 10.
46. See note 14.
47. Sir Ronald Aylmer Fisher (1890-1962), the British biologist and geneticist, is regarded as one of the fathers of modern statistical methods.
48. Leibniz's first report on the differential calculus was placed for publication with a Paris printer in 1676, at the point Leibniz left Paris for Germany. The Leibniz archives are filled with unpublished working papers from the 1672-1676 period which show in great and very important detail how Leibniz elaborated the development of this discovery (original research by Uwe Parpart). This was completed 11 years prior to publication of Newton's *Principia*. Apart from the not unimportant fact that Leibniz's calculus works and Newton's does not, the British claims to Newton's priority of concurrence in the discovery are a sheer hoax, as the Royal Society knew itself during the 1780s and during the period of the Leibniz-Clarke correspondence.
49. Researches by Michael Liebig on the roots and implications of Leibniz's *Society and Economy*, presented in an address to the conference of the International Caucus of Labor Committees, Mainz, West Germany, Nov. 5, 1981.
50. P. Valenti, "Leibniz, Papin, and the Steam Engine: A Case Study of British Sabotage," *Fusion*, Dec. 1979, p. 26.
51. Unpublished manuscripts of Lazare Carnot, as discovered and reported by Dino DiPaoli, one of an international team of researchers into primary sources on the 17th through 19th centuries' history of science in France, Italy, and Germany. Carnot outlines as a project the connections among economics and thermodynamics.
52. Source materials collected by Criton Zoakos from Greek historian sources. With the banning of the Jesuits in 1763, the order fled for refuge to the Orthodox East, basing itself in Russia. It was later joined there, after Napoleon Bonaparte's conquest of Malta, by the Maltese Order. Russia, already a battlefield between Neoplatonic and Gnostic factions of Byzantium, underwent a qualitative shift to Venetian subordination with the assassination of the royal husband of Catharine the Great. Venice, thereafter, played the Russian monarchy, the Ottoman Empire, and the Austro-Hungarian entity against one another. It was Venice which imposed its operative, Capodistria, upon the Russian Czar as the Czar's foreign minister. It was the Venetian agent, Capodistria, in the capacity of Russian foreign minister, who dictated the 1815 Treaty of Vienna, establishing the Holy Alliance.
53. L'Abbé François Napoléon Marie Moigno (1804-1884) entered the Society of Jesus in 1822. Close to Cauchy from his student days at the Sorbonne, Moigno taught mathematics in the Rue de la Poste. He wrote on the differential and integral calculus, optics, the telegraph, and theology, and he edited two influential scientific journals.
54. Chiefly Berlin researches by Uwe Parpart and Paris researches by Dino di Paoli.
55. When Karl Gauss was unable to pay the "fine" on all Göttinger professors exacted by Napoleon Bonaparte, it was the Paris Ecole Polytechnique that came to Gauss's rescue. Franklin's links to Göttingen date from no later than 1766.
56. Russell's published lectures on geometry are one of the most useful starting points for this study. The heritage of Russell's thuggery in science is continued today by an international fraud-project known as "The History of the Exact Sciences," headed by Professor C. Truesdell of Johns Hopkins University and seconded by Professor Bernard Cohen of Harvard University. The writer's associates have caught Truesdell's crew red-handed in frauds in connection with the published work of that project.
57. The Betti connection was traced by Uwe Parpart, and then explored more extensively by Dino di Paoli and others in Italy itself. Betti and his associates were integral and leading components of the Cavour circle of northern Italy, with earlier deep links to the circles of Franklin and the Monge-Carnot Ecole Polytechnique. A very advanced circle of Italian science continued into even the Mussolini period among the heirs of the Riemann-Betti collaboration, providing the basis for such things as Italy's world leadership in aeronautics during the 1920s.
58. *On the Subject of Manufactures*. The term "artificial labor" has been traced in Liebig's researches (cf. note 49) to the circle of Naples's Tomaso Campanella. Among the papers on Campanella awaiting publication are "What Every American Should Know About Tomaso Campanella" by Marco Fanini (1981) and "Aristotle Poisoned Alexander According to Tomaso Campanella," by G. Fuoco (1981).

Interviews with Dr. Stephen Dean and Uwe Parpart

India Prepares for the Fusion Age

Dr. Stephen O. Dean, former director of the U.S. Department of Energy's magnetic fusion program, and FEF research director Uwe Parpart toured India's major physics laboratories in November at the invitation of the Indian Council for Scientific and Industrial Research. The American scientists lectured and held extensive discussions with Indian scientists.

They visited the Physical Research Laboratory in Ahmedabad, the probable site of India's newly started fusion program, Nov. 16. In Bombay, they met with scientists from the Tata Institute for Fundamental Research, the oldest such institute in India, and with the head of the plasma physics program at the Bhabha Atomic Research Center. From there they went to the Indian Institute of Science in Bangalore and then to the Saha Institute of Nuclear Physics. The next stop was the Indian Institute of Technology and the sponsoring Council for Scientific and Industrial Research, both in New Delhi, and Delhi University. The trip also included a meeting with Indian Prime Minister Indira Gandhi.

At the conclusion of their two-week tour, Dean and Parpart were interviewed by *New Wave*, a national news weekly. Citing India's vast manpower and infrastructural resources, both scientists said they were optimistic that India will play an important role in the fast advancing development of commercial fusion energy—a far cry from the picture of a hopelessly poor, overpopulated country painted by proponents of the Global 2000 doctrine.

DR. STEPHEN DEAN

Dean, who is presently head of Fusion Power Associates in Gaithersburg, Md., emphasized that India's manpower and the infrastructure built over the years can act as the

ideal launching platform when India's fusion program goes from the present design and research stage into the fabrication stage. The following interview with Dean is excerpted from the Dec. 6, 1981 issue of *New Wave*.

Question: You have been in India for 10 days and have toured some of our main cities. What are your general impressions?

The first impression I have is that everyone was so very friendly, very helpful, and so very interested in our visit and the activities we are here to discuss. I saw much enthusiasm everywhere I went among the people receiving us and those talking to us on the fusion program and scientific cooperation in general. . . .

The country clearly has a large number of very qualified and competent and able scientists in all areas, including plasma physics and fusion. They suffer from the fact that there tend to be a relatively few number of fusion and plasma physics people that are spread out among many centers, so that in each center they only have

a few people and therefore they don't get the benefit of interaction among themselves as much as they might.

They also understandably suffer from lack of equipment in fusion research. Experimental groups are working with very little equipment that limits the kinds of research they can do to very fundamental studies. It also makes it difficult for them to compete on a world scale with some of the research that is going on elsewhere. The kind of research that can be done on the kind of equipment that is available here—the easy research—has already been done in such facilities several years ago. So it makes it especially difficult for Indian fusion scientists to do research that would gain them the kind of recognition that their abilities warrant.

This is not true in the theoretical areas as theoreticians do not require this kind of equipment, except to the extent that much of the theory today is also done using the computer, and access to some of the larger kinds of computers and sophisticated software is not yet available here.

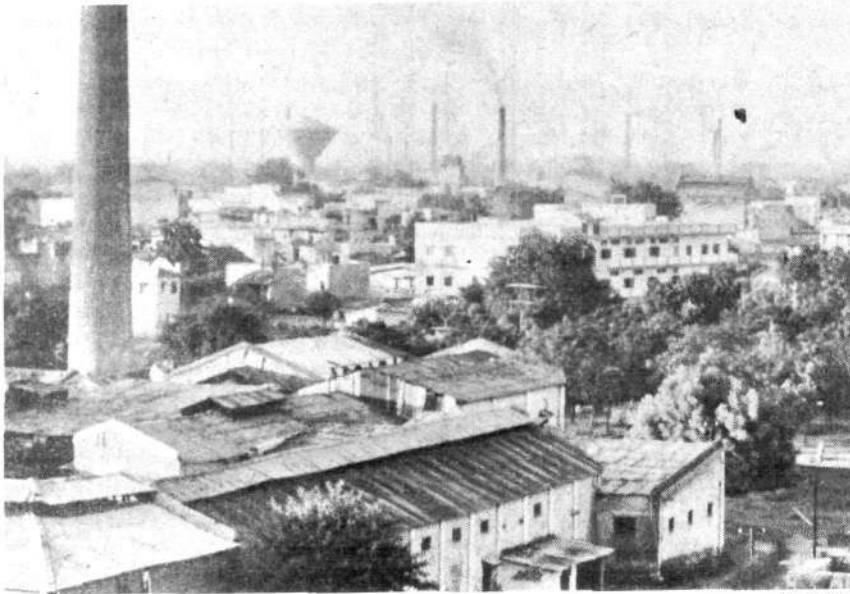
In general I found the competence of groups was high so that they could benefit from greater numbers or concentration or greater opportunity to interact among themselves and with the world scientific community. The readiness of the program is there to benefit from some larger scale, more modern equipment.

Question: In India there has been considerable debate on what energy option we should be following. How would you compare fusion with some of the other energy options?

I think you have to take the situation as it exists and look at your most immediate, urgent problems and then whatever energy technologies are available to you in the economic cir-



Dr. Stephen Dean



Uwe Parpart

"To the extent that you can go into nuclear power for industry and the cities, and develop cleaner burning transportation systems, I think it is going to benefit the country in many ways." Above: the textile industry in Ahmedabad.

cumstances you find yourself in. But at the same time, you ought not to neglect laying the foundation for the ultimate energy resource. Fusion is clearly not something that can be used today to solve the energy needs of the next few years, but beyond that time, it is the energy source of preference. So I think in looking at your problems today over the next 20 years, you have to exploit those energy sources that are most conveniently and economically available to you.

In traveling through your country, I was struck by comments that there were great, undeveloped hydro resources in the country, quite a bit of coal, and also quite a bit of thorium that can be used in nuclear fission reactors. So you do have a variety of options to choose from in the near term to supply your needs. Unfortunately, not all that energy is economically and rapidly developable. Some of it has major drawbacks.

I think one of the major problems that struck me in the short time I was in this country is that you are creating tremendous environmental and biological hazards in your cities from

burning so much fossil material. If you have more coal-fired plants, you are certainly not going to do yourself any great good. So to the extent that you can go into nuclear power for industry and power for the cities, and to the extent you can develop cleaner burning transportation systems, I think it is going to benefit the country in many ways.

Question: As far as I know, India is the only country in the developing sector that is thinking seriously about this option. I would like your comments on how you think one should proceed with a fusion program in India. What are the fields, for instance, that could be emphasized more in a country in which the argument scientists constantly encounter is that our country has limited financial resources. Wouldn't fusion require a very large financial outlay to get it going?

I think that the country should not feel that it has to construct all of the large facilities that are being built around the world by the countries that are developing fusion now. One can have access to and take advantage

of these technologies that have been developed elsewhere by having trained personnel who are knowledgeable in science and engineering go and work at facilities that exist in other countries. These people would gain the knowledge and gradually establish the manpower and technical base to be able to build these facilities at a time when they are the reasonable thing to do in India.

By building up a scientific and engineering base, I think that can be done with relatively modest experimental equipment and a strong theoretical program with extensive coordination, cooperation, and exchange programs and working relations with some of the larger facilities abroad. I think that that way you can postpone the date at which you feel the necessity to build expensive experimental hardware.

Question: During your visit to India, you have caught the tail end of the Tarapur fuel controversy. It is felt that the United States has been blocking supplies for the enriched uranium plant built by the United States. Many people here feel that the United States is not a reliable partner in nuclear cooperation. There are also people who feel this will throw Indo-U.S. relations to an all time low point. What is your comment on this subject? Will the Tarapur issue cast a long shadow on future Indo-U.S. scientific cooperation?

I think in terms of scientific cooperation, these other type of problems should not be allowed to interfere or cast a shadow because the scientific field is one of basic knowledge, and there has been a long history in the world of openness and freedom of exchange of information through publications and scientific societies. We should try to protect that from getting adversely affected by these kinds of things that tend to be very emotional and difficult at the time but are events that come and go. In scientific fields, cooperation and interaction are built up over a much longer period of time and hopefully have

more reason to be maintained and less reason to be sabotaged.

Question: My last question has nothing to do with fusion. Did India surprise you in any way? Did you see things you expected to see?

I was pleasantly surprised. I was warned I would find lots of starving people in the streets, which is something I did not see. Certainly, there is poverty in the country, a considerable amount of what we in the United States would call poverty. But in general, it seemed to me that the people even with a very low standard of living were basically well fed.

I certainly did not find widespread discontent in the people. I may have missed some things, but even in the crowded conditions I did not perceive discontent or a basis for anarchy of which various people had warned me. I think there is an encouraging atmosphere of people realizing how difficult it was to raise the standard of living starting with the conditions that so many people found themselves in in terms of education and resources. But I found a feeling of hope that gradually the situation will get better and better. There is a great deal of patience that this might be a long-term task.

UWE PARPART

Uwe Parpart has been involved with the question of India's economic development on a continuing basis. In 1980, he headed up an FEF team that prepared a 40-year industrialization program for the Indian subcontinent, in collaboration with cothinkers in India. He toured India in May and June of that year and discussed the broader problems of energy and economic development with many Indian scientists and economists.

The full interview with Parpart appeared in the Dec. 20, 1981 issue of New Wave.

Question: In your view what would be the prerequisite to get a fusion program going in India?



Uwe Parpart

The archive section of the library at the Bandarkhar Institute of Oriental Research in Poona, where Parpart spent several days after his tour with Dean, researching the history of Sanskrit.

Today what is needed is a government decision and a number of individuals in the field of fusion to say we have to pull together our scientists and our resources and develop a concentrated program in fusion energy development. There are many people who will say that this is not possible for India because the country does not have the resources, too much money is involved, look at the large machines that would have to be built, look at the enormous expenses, and so on.

I would like to point out that first of all, the initial expenses in this development effort are not very large. They might run into the order of a few million dollars a year, which India is certainly capable of spending on research and development of a high technology field. In the past, India has demonstrated that it is capable of spending that much and utilizing it fruitfully.

The money is not so much the problem. I think what is at the moment the problem is to find a solution for how one can concentrate the manpower of those 50 or so experienced plasma physicists in the field immediately related to fusion energy

development. Some of these people are in the country and others are abroad and undoubtedly they could be convinced to come back if such an effort were put forward.

It is a management problem, not just a technology or financial problem. It is a management problem that has to be resolved with some dispatch. It cannot be allowed to drag on for months and years, because under those circumstances the people who otherwise will be enthusiastic about such a program quickly find that they are using a lot of their talents and energies in bureaucratic exercises rather than the solution of the problems they were trained to solve.

So I think, and I believe Dr. Dean concurs with me on this, that financially as well as from the manpower standpoint, India is capable of engaging in the problem. The question is one of the national determination of a sovereign nation to develop this program.

The reason I stress this notion of the determination of a sovereign nation is because being able to participate in the international fusion program in the next 30 years on the level with other nations which are now

engaged in this work is going to be a very important element of exercising the sovereignty of the nation. This is going to be the most advanced technological field which will determine the course of development in the next century, and to have an independent capability of participating in this kind of development and to exercise that capability is a major contribution to the exercise of national sovereignty.

On the other hand, to have such a potential as India has with regard to scientific manpower and to fail to make a decision to pull together such a program would be a very serious lapse which would have important negative consequences in the time to come.

It has also been pointed out that, not just in the countries of North America or Western Europe, but also in India's history—from Prime Minister Jawaharlal Nehru to Prime Minister Indira Gandhi—technological and scientific independence, the development of indigenous capabilities at the highest level, are a very essential ingredient of national independence. With regard to fusion we can say today that developing a capability in this field is going to be of the utmost significance.

Question: Could you say something about the work you saw on fusion energy on your tour. What do you see as the strong and weak points of the work going on?

At the moment, experimental work in plasma physics in the country goes on at the Physical Research Laboratory in Ahmedabad. I think they have a small but excellent program. There is work going on at an experimental level at the Bhabha Atomic Research Center in Bombay and on a small but significant scale at the Saha Institute of Nuclear Physics in Calcutta. There is also a certain amount of work planned more for the purpose of graduate education at the Indian Institute of Technology, New Delhi.

There is no question that the groups at Ahmedabad and Calcutta, with whom Dr. Dean and I had the most

extensive discussions, are doing excellent work and that they are enthusiastic about the prospects for development of their work. But as I have said earlier, I think the effort is too diffused and dispersed. I would think that the first order of business is to somehow make a decision to pool some of these scientists and resources in one or two locations which themselves are backed up by sufficient infrastructure in terms of machine shops, engineering capabilities for the support of significant experimental work, and so forth.

I think the time in which a decision will be needed on the building of larger machines in India is about three to five years away. At this point, the appointment perhaps of a coordinator for the fusion program, a selection of individuals who for a certain period of time may be sent abroad—be that to the United States, Western Europe, the Soviet Union, or Japan—to get their hands dirty with functioning experiments in the fusion energy area will be important.

Manpower, I think, has never been a problem in India. I think the problem is in the area of management and administration and in the availability of experimental facilities and the costs involved in these facilities. But I believe that the initial cost involved here, let's say in the first three years or so of a scaled-up fusion effort, will not be large. When we look beyond that, of course, larger expenditures have to be taken into account and when the discussion of expenditures for the next five-year plan begins, there should already be some sense of the direction that this program will take.

Question: Everyone is talking about a big fusion effort by Japan. What exactly are the Japanese doing?

... India in the early 1960s had a very similar opportunity [to Japan] to become one of the leading nations in semiconductor applications. The scientific manpower existed in the form of Indian scientists who had done exceptional work in this field in the

United States as well as in other countries. Indeed, certain steps were taken in that direction but the total amount of expenditures that were at that time allocated by India were not sufficient to define critical mass either to get the program off the ground in India or to convince some of these leading scientists that their research would indeed be supported at an adequate level.

I think not having made this commitment in the 1960s in India is something that has hurt the country significantly, and if India is today number ten in the world with regard to production of semiconductor-related technology items and not number two or three, this is directly the outcome of not making the decisions that should have been made at that time.

There is another example with regard to making such a decision in which case India made the proper decisions at the right moment. In the late 1940s and early 1950s, it became clear that nuclear energy was going to be developed as a source for peaceful energy production. Many of India's leading scientists at that time under the leadership of Homi Bhabha made the decision that even though India had many problems to deal with, it was necessary to develop the manpower and the infrastructure so that some 25 years later when the technology would actually come on line, India would not have to import these technologies and patents but would itself be capable of producing nuclear reactors indigenously.

This program was successful, and to the extent it was successful there is a reasonable expectation that a significant share of the energy problem India faces can be relieved through the utilization of nuclear power on the basis of technologies produced in India.

With regard to fusion, we stand today roughly at the same point as Bhabha did in the early 1950s. We know that by the year 2000—a few years earlier or a few years later—these technologies will become available commercially.

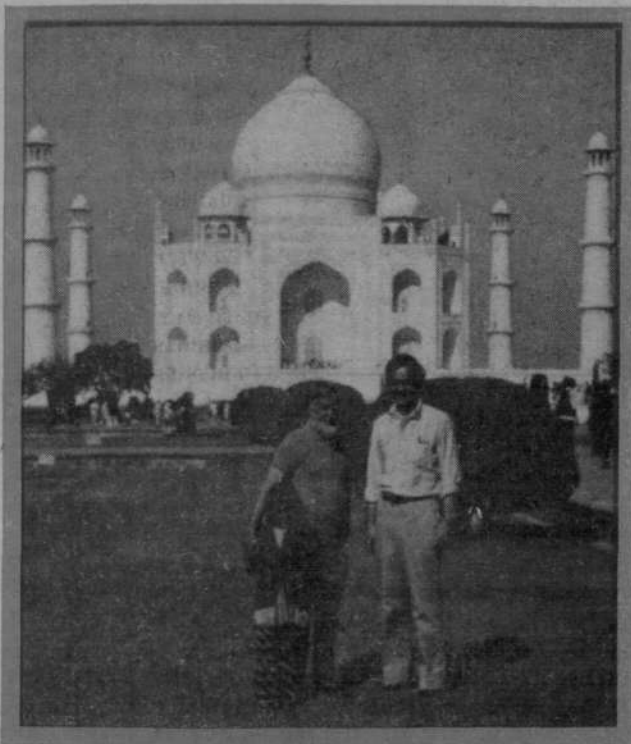


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Stephen Dean (left) and Uwe Parpart in front of the Taj Mahal.

In This Issue

SYSTEMS ANALYSIS VERSUS THE AMERICAN SYSTEM

"White collar genocide" is how economist Lyndon LaRouche describes the established international economic agencies that use "systems analysis" to plan the fate of the developing sector. As he explains in detail in the first of this two-part article, systems analysis precludes the introduction of new, advanced technologies, which is the only way a society can progress and grow.

In contrast is the American System economics that built this nation, based on the principle that "people are wealth." To use LaRouche's term, the measure of a society is its potential relative population density—the number of people an economy can support. By this measure, the *Global 2000*/zero-growth faction is leading the world backward with its policies of depopulation and deindustrialization.

INDIA'S VISION: BUILDING A FUSION PROGRAM

Contrary to the "small is beautiful" and "appropriate technology" prescriptions of systems analysis and limits to growth, India has chosen a high technology path to the 21st century. Fusion scientist Stephen Dean and FEF research director Uwe Parpart, who have toured India's scientific institutions, report on India's plans to be the first Third World nation with a fusion program.