

Critique of the Lagos Plan: Stop Club of Rome genocide in Africa

by Lyndon H. LaRouche, Jr.

Editors' note: *On April 28-29, 1980, the Organization of African Unity (OAU), meeting for an economic summit in Lagos Nigeria, issued a document titled "Lagos Plan of Action." It proposed the use of "soft technology" and "alternative energy sources" like biomass, while praising the "positive role" of the International Monetary Fund and World Bank in supposedly encouraging Third World development.*

Lyndon LaRouche and EIR prepared a book-length critical commentary on the Lagos Plan, titled Stop Club of Rome Genocide in Africa! The manuscript was circulated widely, but was never published in English (a Spanish translation did appear). In view of this document's extraordinary relevance to the current crisis in Africa, we publish here an excerpt from the Introduction, and the entirety of Chapters 3 and 4.

Development or neo-malthusian genocide

The rise of the so-called neo-malthusian dogma over the course of the past decade and a half is but the most clearly evil among our four principal varieties of powerful institutional obstacles to the economic development of the continent of Africa. Unless the power of those institutionalized policies is crushed, development is impossible.

Therefore, we propose that no development effort can be called either "realistic" or "practical" unless it includes a resolution for mobilizing forces adequate to eliminate those four institutionalized obstacles.

These four institutionalized obstacles to development are:

- 1) The influence of neo-malthusian doctrines allied to those of the Club of Rome.
- 2) Post-1965-68 policy trends of leading international monetary institutions.
- 3) Institutionalized monetary and trade policies, sometimes denounced as "neocolonialist," antedating 1965-67.
- 4) The hegemony of doctrines of political economy de-

rived from the colonialist doctrines of the eighteenth and nineteenth century officials of the British East India Company (for example, Adam Smith, John Stuart Mill).

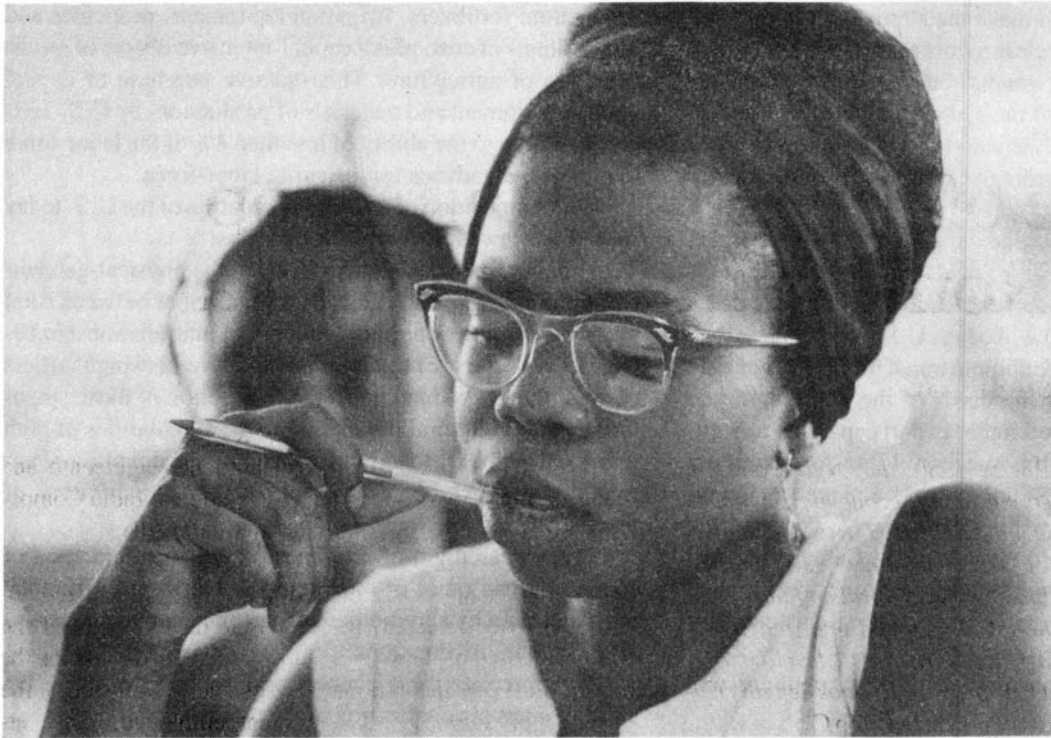
To the extent the first three of these institutionalized obstacles are not defeated, net economic development of the formerly colonial nations is impossible. To the extent the fourth of these institutionalized obstacles influences the methods of attempted development employed, those attempts must fail.

For such reasons, a development resolution becomes practical, realistic, on condition that it begins with a twofold elaboration of policy counter to these four obstacles. First, that policy must treat the body of ideas from which the four cited obstacles are spawned. Second, the policy must define the powerful networks of influence through whose influence such ideas are embodied in institutionalized obstacles of the first three types. This twofold approach must treat the matters not only in opposition to evil conceptions and influences; it must articulate counter-policies and propose counter-forces.

There are two aspects of the most recent centuries of European development which are of special relevance to such a practical and realistic approach. Twice during recent centuries, Europe suffered conditions broadly comparable to those confronting the formerly colonial regions today. In the first instance, we consider the emergence of the Golden Renaissance of the fifteenth century out of the New Dark Age of the fourteenth century. In the second instance, we focus on the central position of Jean-Baptiste Colbert and his famous protégé Gottfried Wilhelm Leibniz in leading the continent of Europe out of the ruinous conditions of the 1618-48 Thirty Years' War.

By focusing attention on those two periods, we define historically the two opposing policies to be contrasted today in the battle for economic development of Africa (in particular).

By adopting such an approach, we accomplish something more than merely defining a realistic and practical approach to institutionalized obstacles. Out of the lessons of the seventeenth and eighteenth centuries' *mercantilist* and *Kameralist*



A student at the Federal Advanced Teachers' College in Lagos, Nigeria. "We view it as indispensable to successful development of Africa to transform a growing population of students into a dedicated elite trained in the principles of development as well as in the professions of scientist, engineer, and technician in such specialties as physics, chemistry, biology, agronomy, medicine, civil engineering, and so forth."

approaches to the successful economic development of Europe we adduce a unified conception of *development*, a conception readily restated in forms immediately appropriate to the case of Africa.

On the positive side of the problem of development, we must move beyond mere lists of particular requirements for development, to a *unified conception of development*.

By examining the "Lagos Plan of Action" from the vantage point of the conception we develop in the following pages, it will be made clear why we see dangers in the method of elaboration of developmental goals employed for the "Lagos Plan of Action."

It should also be clear from the same pages that we view it as indispensable to successful development of Africa to transform a growing population of students into a dedicated elite trained in the principles of development as well as in the professions of scientist, engineer, and technician in such specialties as physics, chemistry, biology, agronomy, medicine, civil engineering, and so forth. . . .

The rural-urban transformation

The leading feature of successful development of the so-called developing regions is the accomplishment of a shift of ratios of households and labor-force from rural to urban occupations and modes of life. This is accomplished chiefly by the deployment of industrial technology (including improvement of transportation) to transform agriculture from

labor-intensive to capital-intensive modes of specialized production of food and fiber. The balanced development of new industrial workplaces, together with appropriate education, to absorb the portions of the population shifting from rural to urban life, is the crucial, included aspect of this process.

The most dangerous among the misguided policies recommended to developing nations include:

1) The "appropriate technologies" doctrine promulgated by the World Bank, and by the World Bank's propaganda-arm, the Willy Brandt "North-South Commission." The consequence of this proposal must be genocide through means including famine and epidemic, especially among the least developed nations.

2) The proposal developed by the Brookings Institution, and conduited through Henry Kissinger, Unctad, and other channels of subversion, to "solve the problems" of raw materials-exporting nations with cartels modeled on the image of OPEC. This is but the old colonialist policies in a protectionist disguise, leading to the same spread of genocide in developing nations as the "appropriate technologies" evil.

3) Continuations of the "import substitution" policies which the United States and Britain imposed upon Latin America during the postwar period. At best, such ill-advised policies create a better-paid middle-class within developing nations, at the price of increasing the socially dangerous discrepancy between the incomes of a relatively small middle class and the population generally. (Mexico is presently attempting to overcome precisely such disastrous consequences of the imposed "import substitution" policy.)

In due course, we shall make the alternatives to all three such dangerous proposals clear in this report. We begin with elaboration of the leading features of the rural-urban transformation. The significance of the elaboration of *hydrothermodynamics* (thermodynamics situated within the terms of physical geometry) in the preceding section will become clearer as we proceed.

It is most useful to examine the case of the development of the United States.

The first, 1790 Census of the United States indicated a rural population of over 90%. Today, U.S. farmers, less than 4% of the labor-force, have demonstrated the ability not only to produce abundance for the needs of the entire domestic population, but to generate a major export capability as well.

The means by which this successful transformation occurred was outlined as U.S. policy by U.S. Treasury Secretary Alexander Hamilton, in his 1791 *Report to the Congress on the Subject of Manufactures*. Henry C. Carey, President Abraham Lincoln's economic-policy adviser, reexamined the case put by Hamilton a half-century later, richly confirming Hamilton's analysis.

The key to the development of U.S. agriculture was threefold:

1) During the latter part of the 18th century, the literacy rate in the United States was in excess of 90%, more than double the approximately 40% literacy rate then existing in Britain. Contrary to the popularized but false propaganda of Turner and the Anglo-American "revisionist" historians, including Beard, Lippmann, Schlesinger, et al., the American farmer was not a "rough, illiterate frontiersman." He was sometimes called the "Latin farmer" because of the impressive percentage of amateur classical scholars among the farmers as a whole.

2) The development of roads, canals, and later railroads to facilitate marketing of agricultural products, and to promote specialization for market among farmers. This was emphasized to that purpose by Hamilton, and proved a key to the rapid improvement of farm incomes.

3) The development of industry with the understanding that this was uniquely the way in which to increase the productivity and income of agriculture. This was augmented during the 19th century through German influences promoting the use of fertilizers as well as agricultural tools and powered machinery produced by industry.

The typical U.S. farmer or rancher of today operates as an independent farmer on several hundred to several thousand hectares of land. He has a relatively high level of technological competence, relative to technicians employed in industry, and is an independent business executive in the full sense of that term, as well as a self-employed form of productive labor.

This production is not competently interpreted as primarily a connection between the farmer and land. U.S. agriculture is a massive consumer of industrial output for agricultural

production: fertilizers, irrigation equipment, pesticides and related items of cost, plus a capital-intensive degree of mechanization of agriculture. This massive purchase of capital goods (equipment and materials of production) by U.S. agriculture is key to the ability of less than 4% of the labor-force to produce abundance for the entire labor-force.

The composition of the rural population of the U.S. today should be viewed in the following terms:

1) It should be analyzed in terms of the physical-geometric structural features: a) the division of labor between rural and urban production; b) the functional interrelationship between the sectors; c) the internal structure (as singularities) of agricultural production; d) the connection of those singularities of agricultural production to the singularities of both industrial suppliers to agriculture and of consumption of agricultural product; and e) the thermodynamic parameters of these structural relationships.

2) As a paradigm-of-reference for the transformation of the rural-urban ratios of other nations, in the terms of reference indicated by a hydrothermodynamic approach to analysis of such transformations.

To appreciate these connections, we must examine the shifting internal composition of the urban labor-force associated with increasing ratios of urban/rural employment.

Development means not only an increase of the ratio of urban to rural labor-forces. This increase correlates necessarily with a tendency for an increase of the ratio of capital-goods to consumer-goods employment within the urban labor-force. In turn, as the ratio of capital-goods to consumer-goods production increases, there is a necessary expansion in the ratio of scientists and technicians. It is the latter who, in respect to goods production as such, generate the advances in technologies feeding capital-goods development.

It is the advances in technology (and productivity) associated with such interlinked shifts in composition of the labor-force which provide the wellsprings of advances in agricultural technology and productivity, and so forth and so on.

These transformations in labor-force composition and productivity are inseparably dependent upon advances in the quality of education and related cultural development of the labor-force.

These structural transformations of the labor-force's composition correlate with the thermodynamic (negentropic) function $F(W_f/W_s, \bar{W}_s)$.

Analysis of the economy

We now outline a schematic device for conceptualizing the hydrothermodynamic transformation of an economy. This provides us with the basis for an urgently needed replacement for the Gross Domestic Product procedures of National-Income Analysis employed by the UNO [United Nations Organization] and by most nations presently.

Since the fundamental issue of economic science is the development of the power of a population to produce the

material alterations of nature associated with a definite potential relative population-density, the term *productive labor* must be limited to that portion of the total activity of society which is directly consumed in effecting such *material* transformations.

Therefore, we restrict the use of the term *productive* to the production of *useful goods*. We include *transportation*, the conveyor-belt of the economy as a whole, within that designation of *productive*.

The term *useful* is applied to *useful goods* from the vantage point of the concept of *net work done*,¹ as we defined that conception in the preceding section of this report.

There must be a positive correlation between changes in man's practice in changing nature and increases in potential relative population-density. This provides analogs for the "increasing reducing power" of the whole economy's production of goods relative to changes in the state of nature.

Therefore, the exemplars of useful goods are the capital goods (materials, machinery, equipment, and so forth) of agricultural or industrial production of *goods*, and the amount of consumption of produced goods by households needed to provide standards of leisure and consumption consistent with the level of technology of present and immediate-future production in the most advanced industries and agriculture.

In addition to *productive* employment, a society requires certain forms of necessary activities which are *useful, but not productive*.

One example of such useful, nonproductive activities is the work of teachers. The education of the population is necessary for the development of the *potential* productive powers of labor. However, a society of teachers would not be productive at all *as teachers*. Furthermore, the essential benefit contributed by teachers is wasted for the economy except as the labor-force taught is productively employed.

Naturally, the activity of teachers is reflected in the productive output of goods. It is reflected in the *increase of productivity* of productive labor. Thus, by measuring the useful-goods output of productive labor, we have fully accounted, inclusively, for the indirect contribution of teachers to *current production*. To attempt to count the labor of teachers (for example, value-added component of teachers' income) as an amount in addition to the value of output of goods production, would be a folly of double-counting.

The same is true for the organizational contribution to production by the administrators of enterprises, for scientists, engineers, technicians, physicians, and so forth.

The subject of economy is the increase of the material basis for increases in potential relative population-density through advances in the technology of production of useful goods. It is productive labor which directly, and comprehensively subsumes all of that productive activity. Other forms of useful activity have the development of technology and of the powers of productive labor as their subject.

To confuse that distinction, as the practices of national-

income accounting do, generally, today, is to make a mess of everything.

Since the smallest unit of reproduction of a population is the household which produces and nurtures children, the starting point for competent national-income accounting is the *total households* of the nation.

We apportion these total households into two principal categories. In one category we include the households whose labor-force members are employed as productive operatives in agriculture or industry. In the second category, we include other households.

The objection might be raised, that one member of a household may be employed in a productive occupation, while another may be employed in a nonproductive occupation. It might be objected, in the same vein, that a person may change employment from a productive to nonproductive occupation, or the reverse.

From the vantage point of static accounting, this objection might appear to involve a significant difficulty. It is necessary to remind ourselves that the conception of *net work* focuses our attention on *changes in structure*, and the relationship of such changes in structure to values of our negentropic function.

It is required that we count the respective categories of households in a consistent manner, selecting the manner which is consistent with the object of analytical work. It is *changes in the structure of the labor-force, relative to households*, which is our primary datum. We must measure the households categorically according to the requirement of measuring changes in the composition of the labor-force.

We outline the methods of national income-accounting to be used, illustrating the points to be made by a schematic representation which displays the problem in the simplest possible form.

See, now, **Figure 1**. We describe this figure, and then present, in summary, the key distinctions between our usage of the symbology employed and the use of a similar symbology by Karl Marx.

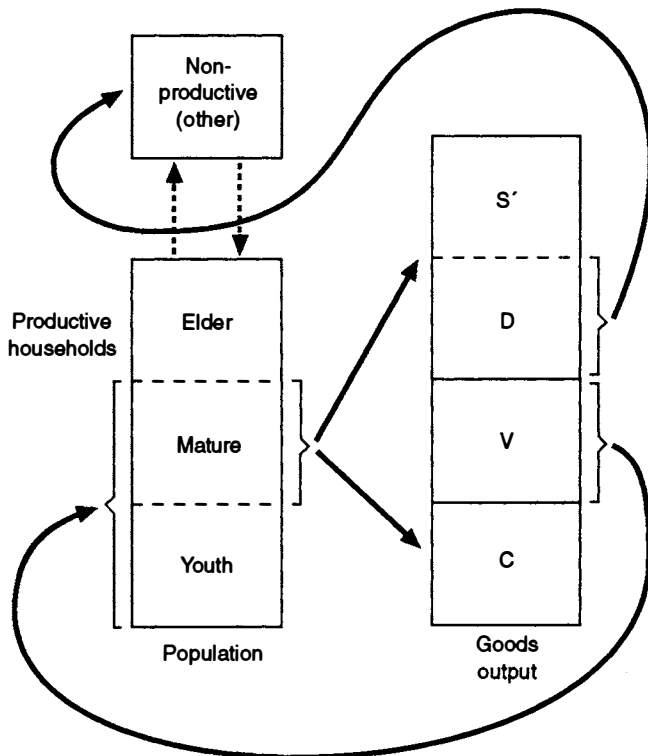
The diagrammatic scheme of Figure 1 depicts the flows of "negentropy," chiefly in the form of useful goods, in the reproductive cycle of a national economy. It represents that dynamic process in terms of imagery appropriate to a static form. We have used this imagery, over a period of a decade and a half of university-level instruction in economic science, and have found such a first-approximation scheme to be most satisfactory pedagogically.

The two left-hand bars apportion the total population of households of a national economy into the two general categories of *productive and nonproductive*. In this case, the upper of the two bars represents the nonproductive, and the lower the productive households.

We have focused, in this diagram, only on the internal features of the productive population of households.

For purposes of simplification at this point, we have di-

FIGURE 1
Total economy



vided the total population of productive households' persons into three age-categories: young, mature persons below the age of retirement from employment as regular productive labor, and persons above that *modal* age of retirement. It is the middle-range which yields productive labor, after deducting for persons engaged in rearing of children and other matters internal to the household itself. This provides a geometric determination of the productive labor-force available.

The bar to the right of the productive households' bar is the production-bar. This bar is analyzed in terms of its goods-output.

The principal categories of goods-output are a) capital goods (materials, equipment, machinery, and so forth) consumed by production itself; b) goods consumed by the households of the productive category; c) a social surplus of goods produced in excess of consumption-requirements for a and b.

The third category, *social surplus*, is subdivided into two subcategories. The first of these subcategories, labeled "d," is the consumer and capital-like goods consumed by the populations and activities of the nonproductive sector of households. The second of these subcategories is *net social surplus*, which we have designated as *S-prime* (S'). This is the margin of total output available for *net work* investments.

The dotted-line connection between the two population-

bars indicates the transmission of services from the nonproductive to productive sector. The heavy arrowed lines show the flow of goods through the system.

We now discuss the symbology used. After that, before turning to the question of methods of analysis, we shall interpolate summary remarks identifying the essential distinctions between our employment of this symbology and that of Karl Marx.

The symbology used for the productive relations depicted is:

- C Capital-goods consumption by production itself.
- V Goods consumed by households of productive labor.
- S Social surplus (total).
- d Nonproductive consumption.
- S' Net social surplus.
- $[S' = (S - d)]$

The key national-income accounting-ratios derived from this symbology are:

- $S/(C+V)$ Productivity.
- $C/(C+V)$ Capital-intensity.
- $S'/(C+V)$ Rate of profit.
- and, for additional reference:
- $d/(C+V)$ Expense-ratio.

It is the changes in these ratios effected over the course of successive epochs of the production-consumption cycle which are the primary objectives of economic analysis.

These ratios are the *social ratios* of the economy, which must be correlated with the negentropic function.

To this purpose, we achieve a useful first approximation of the desired form of analysis by defining "economic" space as follows.

The three independent parameters of this *economic space* of reference are: a) $S'/(C+V)$; b) $C/(C+V)$; and c) \bar{W}_s . This is not a fully adequate definition, for reasons we shall indicate below. However, it provides a method for effecting useful approximations by administrators and economists generally, and has pedagogical importance, as a stepping-stone toward the more adequate notions required.

By defining "economic space" in these terms of reference, the subspace formed by $S'/(C+V)$ and \bar{W}_s approximates the functional term W_f/W_s . The subspace formed by $C/(C+V)$ and \bar{W}_s defines the indicated energy flux density of capital-intensity, approximating the required elaborated (social) form of expression for \bar{W}_s . So, the "economic space" defined by these three approximates the cross-sectional values for a short interval of development of the function $F(W_f/W_s, \bar{W}_s)$.

By means of enriched treatment of the schema, to account for the interactive subcategories of productive employment (agriculture, forestry, fishing, mining, manufacture of capital goods, manufacture of consumer goods, energy production, etc.), and subdividing those subcategories in terms of types of industries, our analysis converges upon the degrees of successive refinement required.

For example, for use of more limited computer facilities, useful approximations for treatment of certain kinds of analytical tasks can be accomplished in treating each category of industry in an economy as contributing its output through a pipeline-like connection to the general common pipeline of total output.

That approximation breaks down if we explore the analytical problems more deeply. In practice, we must allocate among all the industries according to the indicated resulting improvement for the performance of the economy as a whole in terms of the function we have described.

The case of Karl Marx

Marx is situated between the British East India Company propagandists and the continental mercantilists-Kameralists in chiefly a twofold way.²

Marx is essentially what he defines himself to be in political economy. He is a continuation of the "rationalist" phase of the British East India Company propagandists, most emphatically Adam Smith and David Ricardo.

Without otherwise changing any of the axiomatic assumptions of the British school to which he adhered, Marx effected several relatively important improvements of British political economy within that limiting set of conditions. Central, of course, is Marx's application of the notion of *labor-power*.

Contrary to the lying Friedrich Engels, Marx was by no means the discoverer of "labor-power." The discovery was made, and in a richer and more rigorous form than Marx's writings ever suggest, by Leibniz during no later than the 1670s. Moreover, Leibniz's conception of the "productive powers of labor" was incorporated as the national policy of the United States during the first administration of President George Washington, as the central feature of Hamilton's *Report on the Subject of Manufactures*. This same conception was central to the work of economists associated with the Ecole Polytechnique, including Chaptal and Dupin. It was popularized throughout leading German circles before Marx's youth by the Leibnizian Kameralists and by leading figures such as Friedrich List.

On this point, Marx's libelous mistreatment of List and Carey (both at the prompting of Engels) is the most naked instance of willful intellectual dishonesty by Marx. Not only did he exhibit acquaintance with the writings of both List and Carey, but did so by publishing fraudulent attacks upon them while otherwise borrowing from the work of both.

Although Marx employed the conception of labor-power in a delphic, borrowed form, he was a dedicated anglophile in philosophy, science, and political economy; at least, anglophile relative to the principal differences between British and continental scientific thinkers. Correspondingly, he situated his limited use of the borrowed notion of "labor-power" within the axiomatic setting defined by the works of Smith and Ricardo.

Marx succeeded in his four-volume *Capital* in proving conclusively that the British model of political economy is inherently subject to malthusian, anti-technological-progress tendencies, and to periodic monetary-crisis breakdowns. Insofar as he correctly insisted upon technological progress as a matter of fundamental human-species interest, he relegated that hope to an anti-capitalist society in the well-known fashion.

This inner contradiction within Marx the political economist extends into matters outside political economy as Marx defined it. Correspondingly, today, as the Socialist International leads in promoting neo-malthusianism, members and co-thinkers of that Socialist International deplore what some of them describe as the "Platonic impulse" in Marx's work. They propose a "Marxism" stripped of all taint of such "Platonism."

The accusation of a "taint of Platonism" in Marx is valid. This shows in one of the earliest of the surviving literary works of Marx, an 1835 school essay written as an examination exercise under the direction of Johann Hugo Wyttenbach at Trier. It shows prominently in several locations, including Marx's contribution to the 1846 manuscript *The German Ideology*, and in the treatment of the subject of the interrelationship between "freedom" and "necessity" in Section VII of *Capital*, Vol. III.

Those qualifications noted, in all other respects, Marx's political economy is thoroughly and predominantly a variation within the bounds of the British East India Company school.

This observation applies to Marx's usage of the symbolologies for *C*, *V*, *S*, and "*d*" (which he defines differently than we do, and terms "capitalists' consumption"). Although the British political economists of the "rationalist" phase pretend to be the originators of political economy, they came into this field relatively later, long after Plethon had introduced formal political economy into western Europe during the early 15th century, and after the seminal work of the mercantilists and Kameralists, including Jean Bodin, Serra, Becher, Leibniz, and Alexander Hamilton had been well established and widely circulated. Hence, the origin of the categories for *C*, *V*, *S*, and *d* in British "rationalist" political economists is British delphic plagiarism.

The British borrowed extensively from such sources. After borrowing, the British not only pretended to have invented such conceptions themselves. The British used the adopted authority of having made such discoveries, to attribute to those conceptions a meaning entirely different than those from which they borrowed.

This is the classical *delphic* method. That is the term used to describe this method of fraud in memory of the Cult of Apollo at Delphi. Sometimes professed as a method by Jesuit spokesmen, the "delphic method" was otherwise known in ancient Greece as the method of sophistry. Through the activities of the school of rhetoric of Isocrates at Athens, the terms



A science laboratory in Kenya. "Our included concern for the development of Africa must be to shift rapidly the average composition of skill levels in the labor-force as a whole. This is best accomplished by development over two successive generations of proportionately large infusions of young, relatively well-educated Africans into the labor-force."

sophist and rhetorician came to have the same connotations.

The opening of the chest of private working-papers of Isaac Newton, by John M. Keynes and others after him, contributed powerful circumstantial corroboration of the otherwise well-documented evidence that Isaac Newton, like his accomplice [Robert] Boyle, was a swindling plagiarist of this delphic variety. Newton and Boyle plagiarized liberally from Hooke, as well as from [Christian] Huyghens and Leibniz. In Hooke's case, Newton and Boyle took over whole chunks of Hooke's written work with scarcely any philosophical alteration. In the case of philosophical opponents, such as Huyghens and Leibniz, the delphic method was used. The bare form of a conception was plagiarized, and then the discovery of the conception so plagiarized was attributed to a philosophical method directly opposite to that through which the plagiarized discovery had actually been effected. The chest of Newton's papers indicated that Newton had been fully occupied in the attempt to practice primitive black magic all during the period he pretended to be occupied with scientific investigations.

The economic categories which Marx adopted from the hands of his British political-economist predecessors were original neither to Marx nor those British predecessors. They were transmitted to Marx as delphic distortions of the scientific conceptions earlier developed by the mercantilists and Kameralists of the 16th through 18th centuries.

Although there are points of agreement in definition of empirical data between our own and Marx's description of some parts of these categories, that is the only point of agreement. The attempt to interpret these terms from a Marxist vantage point must inherently lead to disaster. As for the argument that the case of Soviet development seems to indicate otherwise, the fact of the matter is that Soviet development is chiefly V.I. Lenin's effort to adopt American methods and German technology for ordering of the nationalist (non-capitalist) economic development of that nation.

Illustration: population policy

We shall now develop a series of examples, to illustrate the kinds of conceptual approaches to developmental policies this method implies. These examples will include, but not be limited to, refutations of the three dangerous policy-proposals cited at the outset of this section of our report: "appropriate technologies," "raw materials cartelization," and "import substitution."

We begin now with a treatment of exemplary features of population policy.

The advancement of technology in the OECD nations has raised the modal school-leaving age of employable labor to between 17 and 25 years—with only a small ratio of exceptions for this (such as physicians). We would argue, and strenuously, that the quality of education provided is poor, and has become increasingly worse over the course of the past two decades of "educational reforms." We ourselves would insist that in most instances students fail to learn adequately in universities what they should have mastered in properly reformed secondary schools. Nonetheless, once such criticisms have been duly noted, the fact remains: advances in technology do raise the school-leaving age for new members of a qualified labor-force.

In the case of the United States, it is useful to compare the educational requirements of the industrial labor-force at the beginning of the century with requirements of the immediate postwar period. At the beginning of the century, basic pre-skills requirements for members of the main body of the industrial labor-force were satisfied by approximately a grammar-school level of education. By the postwar period, for aerospace and related levels of industrial technology, the functional equivalent (in combined education and experience) of one or two years of technical education above the secondary-school level was required.

The portion of the population of households represented by persons at a pre-labor-force age-level is a definable percentage of the entire population of those households. The

increase of this percentage increases the social cost to adult labor-force members of households, in providing the maintenance and education of the young over an extended period.

In addition, the advances in technology which correlate with increases of the school-leaving age are associated with actual or imputed increases in \bar{W}_s . This increase is expressed as an increased cost per individual member of society.

These considerations make it increasingly intolerable to tolerate high death rates. It becomes necessary to increase the average span of the productive lifetimes of adult members of the labor force. Life-expectancies typical for poorer sections of the populations of developing nations, and for most of Africa, are intolerably low.

Part of the increase in value of \bar{W}_s is a reflection of the increased nutritional quality, hygiene, and health-care requirements associated with increases in mean longevity. The largest increments of cost associated with such improvements are for improved nutrition and sanitation.

Health care is a high-technology, predominantly labor-intensive service. The average age of specialist physicians completing residencies defines the limited number of years of practice of the trained specialist. For delivery of health care, there must be an increasing ratio of total physicians per specialist physician, and increasing ratios of biological scientists, technicians per active physician, as well as required ratios of nurses, paramedical employees, and non-medical logistical support for hospitals, clinics, and other institutions of medical practice. The costs of maintaining adequate training facilities and programs for producing such physicians and other specialists of health-care work is a very considerable part of the total cost of health-care services.

In general, the principal frontier of medicine is conquest of illnesses which are, directly or otherwise, characteristically diseases of aging.

For example, if rates for cancer are properly constructed, the rate of incidence of cancer in the United States has been declining. Cancer is predominantly a disease of aging. Therefore, as longevity increases in a population, as it has in the United States, more persons live to the age at which contraction of cancer is probable. So, the incidence of cancer in populations must be measured not per member of the population, but for the population of each age-interval. By such standards, the incidence of cancer has declined, and the death rate from cancer has declined more significantly.

From the standpoint of economics, the physician treating one patient is implicitly treating the entire population. By combatting disease or injury in the person to which this occurs, the medical profession is mastering the disease or injury, by fighting it from case to case. The knowledge gained by fighting a disease such as cancer, often at a high cost per individual treated, leads toward development of methods and procedures by which the disease is ultimately mastered, and at a relatively low cost per member of the total population threatened by such disease.

From a broader view of this same aspect of medical practice, the combat against diseases associated with aging is, taken in totality, an integral part of the process of comprehending and treating those processes of aging of tissues which are direct or implicit causes for the termination of life or impairment of capabilities at age levels of, for purposes of reference, 85 to 90 years.

If we could master the problems of aging more adequately, this would raise the age level for full physical productive competence. The power to accomplish this would be of no

The fact remains, the development of the economy of Africa demands a substantial increase in the mean longevity of the African population. Without increased longevity, we cannot support the levels of education and leisure required by modern technology. Directly contrary to the Club of Rome and its accomplices, a relatively high birth rate is a precondition for rapid rates of economic development.

trivial economic importance for nations such as the United States today. It would also be of great moral importance in several ways. No moral person can accept as tolerable reduced quality or capacity in the aging, or condemnation of a retired person to contemplation either of an early death or a decade or so of an imposed sense of social uselessness, under the kinds of social policies presently prevailing in a number of nations including the United States.

Some of those cited considerations may appear to be luxuries beyond realistic concerns for the present state of most of the African continent. The fact remains, the development of the economy of Africa demands a substantial increase in the mean longevity of the African population. Without increased longevity, we cannot support the levels of education and leisure required by modern technology.

Directly contrary to the Club of Rome and its accomplices, a relatively high birth rate is a precondition for rapid rates of economic development.

Our included concern for the development of Africa must be to shift rapidly the average composition of skill levels in the labor-force as a whole. This is best accomplished by development over two successive generations of proportionately large infusions of young, relatively well-educated Afri-



A geometry class in Mozambique. "Not only is the infusion of educated youth the key to increasing in a major way the mean productivity of the labor-force of African nations. It has been demonstrated repeatedly that advancement of the cultural levels of matured generations is best accomplished through the effects on those generations of education of the children and youth."

cans into the labor-force.

This assumes that we provide the nutrition, sanitation, and educational programs needed to accomplish that, and that we provide the productive workplaces needed to absorb such increments to the labor-force according to those acquired skill levels.

Not only is such an infusion of educated youth the key to increasing in a major way the mean productivity of the labor-forces of African nations. It has been demonstrated repeatedly that advancement of the cultural levels of matured generations is best accomplished through the effects on those generations of education of the children and youth.

This point implies, and properly so, that the development of Africa must be directed to what the nations of Africa are to become in such target-years as 2000 and 2020. Everything should be focused on attempting to achieve an approximation of economic break-even of income and costs of development now, with development directed to preparing for the infusion of young, educated members of the labor-force added during and between the signal years of A.D. 2000 and 2020. The conception needed is one of *development of the productive powers of an entire population over a development-period spanning two generations*. "Forty Years of the Child" would be one useful thematic name for what must be accomplished.

Longevity and *education* should be prominent themes of key improvements in social policy over the span of this indicated period.

This, it should be obvious enough, is implicit in the appli-

cation of the notion of increasing the potential relative population-density to the structural features of the social process before us.

Illustration: 'appropriate technologies'

The doctrine of "appropriate technologies" associated with proposals of the World Bank and Brandt "North-South Commission" are clearly proposals for genocide.

In the case of numerous backers of that policy, as of the Carter administration's "Global 2000" dogma, the intent to cause genocide is fully conscious, and a more fully conscious commitment to genocide than was proven at Nuremberg respecting Nazi wartime policies in occupied zones of Europe. The deaths which those strata intend to effect by such methods of famine, epidemic, and homicidal social chaos (regional wars, etc.) range in projections from hundreds of millions to literal billions—over the course of the coming two decades.

There should be no pretending that the ultimate authors of the Club of Rome and allied population-policies are not among the most evil creatures ever to attain positions of great influence in the policies of nations. By the standards of Nuremberg, many of those should be tried and hanged now—before the mass murder is actually accomplished.

There are others who support such wicked policies of genocide out of what might be described as "moral indifference." They are aware that *the accelerated deaths* of billions is the willful intent of "appropriate technologies" and related policies. Yet, the best estimate we can offer from the extensive interviews with such persons over a period of about eight years to date, is that they reconcile themselves to supporting such genocidal policies, by refusing to face the reality that those to be murdered are not population-statistics, but actually individual human beings. This sort of person says of the genocidal implications: "Unpleasant, but perhaps unavoidable."

There are others who hysterically refuse to face the genocidal implications of these policies. They refuse to make conscious, or to permit others to cause them to become conscious, that reducing the caloric daily intake to less than 1,200 or even less than 1,000 calories per person creates the circumstances under which the slightest trauma triggers famine, epidemic, and homicidal forms of social chaos.

Most of black Africa heads the list of populations to be wiped out by genocidal means over the coming two decades.

In the effort to be clever, in a manner typical of the British leading strata, the forces behind this genocide prefer to dupe peoples of former colonial regions to adopt the policies which create the preconditions for famine and epidemic. The adoption of a "soft" approach by the Brandt "North-South Commission" is typical of, and leading among such British-style tricks. The function of the trick is obvious enough: to avoid the political reactions, within the metropolitan populations themselves, which would be triggered by stalwart African

denunciation of such tricks as outright genocide. In fact, the policymakers supporting genocide within governmental agencies of the United States and other nations, have been privately explicit on this point. They fear, most of all, the eruption of revulsion against such evil policies from among the still-moral, but poorly informed majority of the electorates of the metropolitan nations.

The intensification of labor-intensive agriculture, the principal feature (in fact) of the “appropriate technologies” proposal, means the rapid devolution of the fertility of the land more intensively exploited by these means. This is coupled with the fact that present average levels of productivity in the least-developed nations are already at the verge of conditions for spreading famine and epidemic.

If British varieties of political-economic superstitions had not corrupted the world’s economists so widely, the genocidal implications of the Brandt Commission’s proposals would have been recognized immediately by all statesmen—and the ropes of Nuremberg would have been hung out in anticipation of the results of proceedings against the wicked perpetrators of such monstrous proposals. The type of analytical problem posed by this issue of policy is among the most basic topics of a properly conceived introductory course in economic science.

That analytical problem ought to be regarded as a classical illustration of the interconnection between the thermodynamic and hydrodynamic facets of economic processes. We focus attention on the hydrodynamic facet first.

The first rule-of-thumb measure of the degree of economic development of a state is the ratio of urban to rural productive occupations. This is conditional, of course, on the assumption that a high proportion of the potential labor-force is employed, and on the further assumption that nonproductive forces of employment are predominantly of a necessary and useful form. (Worse than an excess of such parasites as pimps, prostitutes, and croupiers, is the sufferance of such evil professions as sociology or the Tavistock variety of brainwashing behavioral psychologist. Such latter, together with kindred species of anthropologists, have proven to be among the most poisonous influences developing nations have imported from metropolitan countries.)

This rule of thumb is properly refined by considering the correlation of the urban-rural ratio with the ratios for capital-goods to consumer-goods employment within the urban sector. This is refined further by shifting from a static to dynamic view of those same and related social ratios. It is the rate of increase of urban relative to rural productive employment, combined with the rate of increase of productive employment of capital-goods over consumer-goods sub-sectors, on which attention must be focused.

It is not only a historical fact, but a necessary condition of economic development, that as any sector becomes relatively small, significant progressive shifts in employment emphasize the relatively more populous sub-sectors of the

division of labor.

In respect to agriculture itself, the validity of the ratios depends upon the production of an adequate and improving nutrition for the population as a whole.

(For the moment, we leave out of consideration the special case of an industrialized nation which purchases its food chiefly as imports through export of corresponding values of industrial goods.)

By these indicated standards, the conspicuous nation with the worst policies today is the People’s Republic of China. In terms of rough measures of social ratios, China is one-twentieth as developed as the United States. Worse, the persistence of high ratios of marginal grades of rural employment has been aggravated by policies such as the “Great Leap Forward” and “Cultural Revolution.” The consequence of such efforts to maintain the social basis for continuation of the ancient mandarin order of rule by secret societies, is the adoption of policies of genocide as operational policy of the government of that wretched nation.

It is documented, for example, that the genocide perpetrated in Kampuchea by the regime of Pol Pot was conducted under direction of Peking advisers, according to policies for genocidal depopulation of Southeast Asia elaborated by the Peking regime. According to U.S. diplomatic-intelligence and corroborating sources, systematic mass murder on a massive scale is currently an operational internal policy of the Peking regime. This policy is corroborated inclusively by official Peking channels.

The People’s Republic of China is economically backward not only in social ratios of development. The degree of this backwardness is a consequence of an intent to keep that nation in such rural backwardness, on behalf of maintaining the characteristic social base for mandarin ideology in that nation. The irrationalism and effective de-urbanization conducted as policy-intent, under such rubrics as the “Cultural Revolution,” are exemplary of this connection, as is the reflection of bloody intramural fights within the ranks of secret societies (in existence since the Han dynasty) in the so-called Gang of Four trial recently.

The promotion of infanticide as official policy of the Peking regime today is viewed, and properly so, as variously a resurrection and perpetuation of the recurring infanticide endemic to mandarin society over preceding centuries. On the one side, the Peking regime’s ideologically motivated determination to keep the labor-intensive rural population overwhelmingly predominant, presumably to curb the rationalist, “New China” influences of urban culture, produces conditions under which the nation is unable to sustain its population—because of its low potential relative population-density. This defines the economic preconditions for the current practice of systematic mass-scale murder in China. The mass murder so conducted coincides with recurring episodes of depopulation endemic to the mandarin order—the same mandarin order whose continued influence, through peasant-

oriented secret-society agent Mao Zedong et al., created the recurrence of these conditions.

These past China conditions did not have to come into being again. If the urban-industrial development had been encouraged, this would not have occurred. However, the mandarin ("Old China") factions rightly view industrial-urban development as strengthening the social basis for "New China" philosophical world-outlooks. So, Peking has vacillated between its perceived as unavoidable needs to have modern technology at its disposal, and its concern to limit and contain the development of a social base expressing the characteristic anti-mandarin rationality of urban-industrial development. The outcome of the successful containment of the "New China" forces by the "Old China" forces has been the overtaking of China's potential relative population-density by the requirements of its predominantly labor-intensive rural population.

If we compare the limited, and relatively backward industrial base of China with its labor-intensive rural base, we find illustrated more or less exactly the logic of the Brandt Commission's proposals.

Although the industrial base of China is numerically large in terms of labor-force, by modern standards it is a relatively small percentage of the total population. The imposition of appropriate-technologies dogmas upon the developing nations generally, under conditions of metropolitan nations' becoming "formerly industrialized" powers such as Great Britain today, creates a situation between North and South analogous to the situation between the urban and the labor-intensive-rural sectors of China.

The bare hydrodynamics of the developmental process emphasizes the shifting of the social composition of the labor-force to higher states of organization: shifts from rural to urban productive occupations; shifts within urban productive employment from consumer-goods to capital-goods production; and emergence of increasing ratios of scientists, engineers, etc., in correlation with an increase of the proportional capital-goods component of urban production.

It is in the process of transformation from relatively lower to relatively higher states of organization of the social division of labor, that thermodynamics manifests itself. In social terms, the increase of capital-intensity associated with negentropic shifts in structure is represented by $C/(C+V)$, and the work-correlative of this increase in \bar{W}_x . The flow of produced goods to effect the increase in capital-intensity of production is reflected in the social ratio $S'/(C+V)$, which correlates with W_p/W_x .

Reduced to barest terms, the possibility of shifting the ratios depends upon the average productivity of the economy (labor-force) as a whole. The possibility of a shift from rural to urban occupations depends upon increasing agricultural productivity per hectare and per capita, to the effect that the total production of nutrition and fiber increases, while the percentage of the labor-force required to produce this increas-

ing amount and quality shrinks.

This latter means irrigation, soil treatment, fertilization, disease control, and mechanization.

It is a dangerous illusion to imagine that any increase in agricultural output could be *sustained* by labor-intensive modes.

The case of Brazil is paradigmatic.

To contain the economic development of Brazil, Brazil's international bankers imposed upon that nation the burning of forests (as a substitute for import and development of fossil and nuclear fuels), and the added program of labor-intensive forms of Amazon agricultural development. Tens of thousands of square miles of Amazon rain forest were stripped annually under these programs.

The attempt to produce repeated crops in deforested rain-forest soil means the transformation of the soil into untillable laterite or similar effects. The lessons of slash-and-burn methods in African rain-forest regions reflect the fact that no sustained tilling of such soil over successive years can be accomplished by labor-intensive methods. The destruction of ancient civilizations in Kampuchea, through transformation of rain-forest areas into laterite by such practices, ought to be classical.

This is an illustration of the notion of the relative population-density associated with a level of development of practice of technology. The existing limitations of land cultivation in Africa by what some wish to term "traditional" methods are expressed by the limits of population implicit in the potentially sustainable exploitation of available areas by such methods. To attempt to force an increase in production without advanced technologies of production, means to produce effects like those in the cited Brazil or ancient Kampuchea case.

The effects of an "appropriate technologies" policy can be catastrophic in other kinds of side effects.

Stable weather systems are positioned through interaction of global atmospheric systems with columns of moisture from vapor emission of plants. The stripping of vast areas of rain forest in Brazil reduced significantly the rate of vapor emission, from the high rates of forest trees, to the lower rates of crops, brush, and grasses. In a similar fashion, the deforestation of large regions of India raised the mean temperature. The result of "appropriate technologies" practices in the Brazil rain forest region, was to cause the shift of the Amazon High into the Atlantic, with catastrophic, chain-reaction consequences for the global weather system.

In Africa, a relatively short period of intensified overgrazing and related practices in the Sahel region, produced a shift in weather and rainfall patterns, causing the desertification of a region which, if developed with aid of modern technology, could be the cereal-producing region for hungry Africa.

The development of the biosphere reflects the same laws of the universe we encounter in different form in the develop-

ment of society. The positive evolutionary development of the biosphere has a long-term functional characteristic of the form $F(W_f/W_s, \bar{W}_s)$. If we degrade the biosphere, the net work which can be extracted from it for human use is reduced. To extract more useful work from the biosphere, we must raise its negentropic level.

To raise the level of the biosphere means two things. It means a more efficient consumption of sunlight, by increasing the conversion of sunlight into biomass. We accomplish this with aid of "artificial energy" added to the production of biomass. This takes the form of irrigation, of replenishment of trace-elements in soil, by other measures of soil treatment, by addition of "energy" in the form of fertilizers, and also by use of "energy" in the form of mechanization to reduce the social cost of measures needed to care for the flourishing of biomass.

In biomass evolution, as in social development, the notion of net work done is inseparable from the notion of transformations of the physical geometry of biological processes. For example, in the animal cell, it is well-known that the ratio of potassium to sodium ions is crucial for determining "energy functions" of the cell, and for resisting aging of tissues. An excessive consumption of sodium salts is a killer, and a deficiency of potassium is also a killer. The biochemical processes are a structuring of "energy-flows." More accurately, what we interpret as energy-flows are in reality matters of *virtual work* and *net work done* in terms of the progression from relatively lower to relatively higher qualities of physical-geometric organization. It is by adding the proper *singularities* (degrees of freedom) to the biological processes of agriculture, that we increase the potential relative population-density of an average square mile of land in terms of nutritional potentials.

The labor-intensive cultivation of land on extended scales, among the proposals included in the "appropriate technologies" dogma of the Brandt Commission, means a stripping of the soil of mineral and other essential qualities, together with a lowering of the levels of biomass in newly cultivated areas. The best estimate of the results, based on studies of various large-scale areas for which such extension of labor-intensive agriculture has been proposed, is that an ecological collapse of such projects must occur in a relatively short time—a few seasons. This knowledge is widespread among agronomists and related categories of biological-science specialists—so that we are obliged to report that any Brandt Commission defender who denies such facts is either an incompetent or a liar.

Illustration: raw materials cartels

It was argued by the Club of Rome, with aid of a willfully fraudulent *Limits to Growth* report, that the world's "finite essential raw materials" were soon to be exhausted. Refutation of the fraud perpetrated by two neo-malthusian hoaxsters from the Massachusetts Institute of Technology, Meadows

and Forrester, leads one to a correct understanding of the genocidal implications for developing nations of the proposal to create raw materials cartels modeled upon OPEC.

There is no *absolute* shortage of raw materials. A cubic mile of the average crust of the earth's surface contains a major portion of all of the raw materials required by mankind as a whole for one year. Each year, through using up of produced things, we turn back a mass of raw materials to earth in the form of waste.

In principle, the human species is presently at the level of new technologies through which we are capable of efficiently extracting the scarcest varieties of raw materials. Such a method is named *isotope separation*. In principle, by merely fostering the continued development of the full range of nuclear technologies and related matters of plasma physics, during the course of the next century, mankind will be enabled to actually process a "cubic mile of earth" *economically*.

The apparent shortages of raw materials, apparently existent or apparently threatened over the decades ahead, are simply matters of *cost*.

The limitations on exploiting raw materials defined by cost are made efficient for society in the following general manner.

If we increase the cost of exploiting raw materials, this increases costs associated with C , thus reducing S' . At a certain point, such increases in C cause S' to become negative in value. Thus, we then have $-[S'/(C+V)]$, and negative values for the characteristic function $F(W_f/W_s, \bar{W}_s)$.

This means a devolution of society (entropy), and a lowering of the potential relative population-density. As this potential falls below the level of existing relative population-density, degenerative processes not only reduce the population (famine, epidemic, and so forth), but impel the population toward some parody of primitive savagery.

This has occurred, in fact, numerous times in the existence of mankind.

During the reign of Charlemagne's contemporary, Caliph Harun al-Rashid, the region known today as Iraq sustained a population in excess of 30 million, compared with approximately 10 million today. This collapse of population levels was caused chiefly by a process of devolution set into motion with the rise of Asharism over the course of the 10th and 11th centuries A.D. This was a phenomenon of book burning and general reversal of technological progress, analogous to what has occurred under Khomeini in Iran, under Pol Pot in Kampuchea, and is emerging as a trend in Nicaragua under Tomás Borge at this time. The Mongols, steered in the Middle East by the Venetian oligarchy's intelligence service, merely completed the destruction of a culture already plunged deeply into self-imposed technological and moral decay.

This is comparable to the combined effects of Genoese usury and the Khomeini-like cultisms which plunged 14th-century Europe into a New Dark Age. Although the Black

Death reduced by one-third the population existing at the beginning of its onslaught during that century, this was merely the concluding phase of epidemic of a century-long process of halving the size of the population which began with the defeat of the Hohenstaufen in A.D. 1268. France, for example, did not reach early 13th-century levels of population again until the 18th century.

This example should be stressed, since the political conditions of Europe during the 14th-century New Dark Age were adopted as a model by John Ruskin's Pre-Raphaelite Brotherhood during the 19th century. The systematic depopulation of black Africa was first proposed by Ruskin's famous Cecil Rhodes, and has been the continuous policy-perspective of that faction of the British oligarchy, including H.G. Wells, Bertrand Russell, the London Tavistock Institute, and the world federalists, down to the present date. The neo-malthusian world-federalist faction behind such associations as the Club of Rome, World Wildlife Fund, Aspen Institute, and the international "environmentalist" movement generally, includes that British faction of Ruskin's political heirs as a leading component. The Brandt Commission is essentially a mere propaganda-arm of those forces.

The Western Hemisphere's so-called pre-Columbian period is one of the clearest demonstrations of such catastrophes.

It is clear from economic analysis of the ruins of ancient Mayan cities and related evidence, that a profound catastrophe collapsed the level of civilization in key parts of the Western Hemisphere during the course of the first millennium B.C. Although there were periods of reconsolidation of society subsequent to the first-millennium B.C. collapse, the general trend of culture in the Western Hemisphere was downward over the two millennia between the onset of the collapse and Columbus's arrival.

Among the indigenous populations of North America, there was a higher level of culture (and population) some centuries prior to the 16th century, than was encountered in America by Europeans of the 16th, 17th, and 18th centuries. The cultures encountered were in no sense *primitive* cultures, but were rather the results of a degeneration of peoples into savagery, from a preceding, higher level of culture.

Africa is a largely unwritten archaeological and philological record of such traumatic devolutions. There are probably few, if any, cultures classed as *primitive* by Europeans during the period from the 15th century onward which were in fact *primitive* in the strict sense of that term.

In the lesser aspect of such factual evidence, this shows that most efforts at civilization have collapsed, and with those collapses has come a spiral of depopulation and descent toward savagery. That fact is a subject for extended scientific inquiry in its own right. The point to be stressed here in that connection is the lesson that such collapses of entire civilizations, including the present global civilization, are entirely within the reach of possibility.

The reasons for such collapses in known cases are consistently of two principal kinds.

In cases such as the cited example of the ancient Kampuchean culture, the looting of the rain-forest area by labor-intensive methods turned the soil into laterite, and the civilization collapsed accordingly. The fixing of the level of technology, as typified in an evil form of such policies by the Brandt Commission's "appropriate technologies" policy, must always lead toward a genocidal collapse of the economy.

The other cause for known cases of such collapse is typified by the ruinous effects of Asharism upon the civilization of the Arab Renaissance, and by analogous cases such as Khomeinism in Iran, Pol Pot in Kampuchea, and the role of cultism in destroying Europe during the latter 13th and 14th centuries. Today, the "flagellants" destroying European culture from within are the "environmentalists" and the associated spread of the irrationalist rock-drug counterculture, the so-called alternative culture.

Contrary to those who wishfully avow thermonuclear war or an induced global biological catastrophe to be "unthinkable," and therefore improbable to a point of virtual certainty, mankind has repeatedly demonstrated his capacity to destroy himself, to effect the self-destruction of entire civilizations. The fact that society today tolerates the Club of Rome and allied forces, and that leading nations consent to policies—such as "International Monetary Fund conditionalities"—which accomplish the Club of Rome's genocidal purposes, is adequate evidence that only a major effort *directed against these forces* will prevent civilization—and perhaps even the possibility of future human existence on earth—from destroying itself during the immediate period ahead of us.

As early as the late 1960s, leading policymaking influences behind the neo-malthusian effort of that period defined the curtailing of freshwater development and of energy supplies as the most efficient preconditions for effecting genocide on a global scale. For that reason, President Carter curtailed water projects inside the United States. For that reason, the development of nuclear energy was sabotaged, to ensure global dependency on fossil-fuel supplies, whose production and/or distribution was under the marketing control of the same complex of London-centered financial forces controlling the London-based "Seven Sisters" of world petroleum marketing.

These forces rigged the 1973-74 petroleum crisis, and were directing hands behind the 1979 increase in OPEC and other petroleum prices. These price increases, combined with London and Bank for International Settlements-coordinated monetary policies, effected a collapse of world trade and production levels of both industry and agriculture. In consequence of these devolutionary effects, there is a growing glut in world petroleum supplies, even at sharply reduced levels of OPEC production.

The most savage effects of the rise in OPEC prices were

suffered by developing nations. Those developing nations specializing in non-petroleum raw-materials exports suffered lawful declines in their earnings. The consumption of energy is chiefly determined by the use of energy by industry and high-technology agriculture, plus household and commercial consumption, which is itself greatly affected by declines in general levels of combined agricultural and industrial production. As combined interest-rate rises and energy-price increases collapsed levels of production, consumption of non-petroleum raw materials collapsed proportionately.

If raw materials-exporting developing nations had attempted to duplicate OPEC cartels for other commodities, as Henry Kissinger and C. Fred Bergsten proposed, through Unctad and other channels during 1975 and 1976, or as the "Common Fund" was proposed from the same sources and through the same channels later, the effects of OPEC would have been compounded, causing a deeper collapse in developing nations' earnings from cartelized raw-materials exports than has been experienced during the past eight years to date.

The increase effected by cartelized pricing would have merely added to C under conditions $S'/(C+V)$ was already near zero globally, and no *net* investment in new technologies was occurring.

There is a difference between the foolish extremes practiced by OPEC and establishment of equitable prices. We review the matter of equitable, *or parity* prices, and then proceed to the conclusion of our argument on this matter.

The world food shortage cannot be mastered except by establishment of worldwide *parity* prices for agricultural products, prices comparable to 100% of parity price for U.S. agricultural products. Against this elementary economic fact, it is argued that such prices would put food prices above the purchasing power of large sections of the world's population. That latter argument is fallacious, as we shall show summarily. After illustrating the principle for agriculture, we shall extend the application of the same principle to raw materials.

A parity price for an agricultural commodity is not a "subsidized price," not an artificially high price. A parity price is based on two elements: *direct cost* and *capital cost*. The direct costs of agriculture are determined as the average costs incurred by competitively productive farmers. To this is added a gross profit increment, a percentage of the direct costs added to those costs. This gross profit increase covers the farmer's personal income plus an average level of new equity for investment in improvement of agriculture. This rate of accumulated equity is a competitive return on investment, as determined by comparison with nonagricultural products.

If the price paid to farmers falls below that parity price, the result is, first, a lack of equity-investment in development of agriculture, and, at lower price levels, as $S'/(C+V)$ turns negative, a process of collapse of agricultural production.

What has occurred in U.S. agriculture, up to the introduction of "Volcker measures" during October 1979, has been a process through which farmers mortgaged out their farms, to secure replacement operation-capital for the capital lost from selling product below cost. During most years over the past three decades, since the Korean War, the U.S. farmers have lost money on agricultural production. The accumulated result of borrowing of replacement operating-capital has been a loss of farmers' equity to creditors. The combined effect of 1979-rises in petroleum prices and Volcker's tight-money policies has been a collapse of the farmers' ability to secure borrowed operating-capital. Farmers are now going out of production at a rate of about 2,000 farms per week! Under present trends, the United States will become a food-deficit nation by some time during 1982-83.

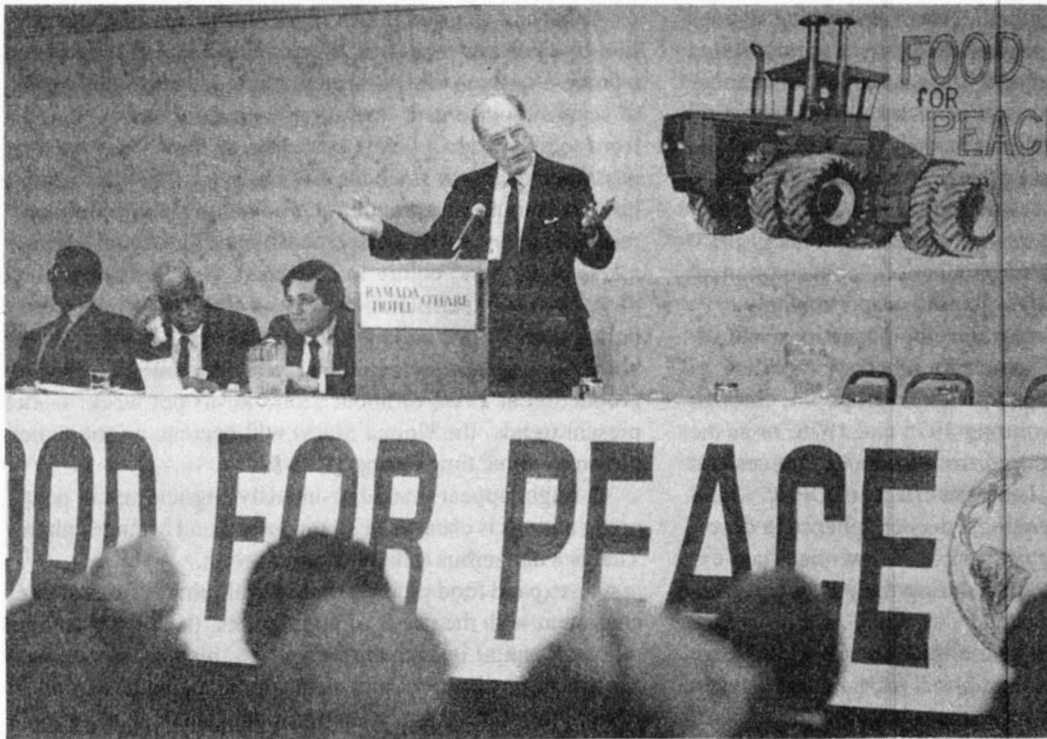
It might appear that labor-intensive agriculture in developing nations is cheaper in direct costs than U.S. agriculture. That is a dangerous fallacy of assumption.

To expand food production in developing nations at rates consistent with the needs of populations, there must be high ratios of capital investment (irrigation, disease control, soil treatment, fertilization, and mechanization). In large parts of Africa, the lack of adequate transportation is an exemplary obstacle to developing specialized market-agriculture in a rational, economical way. The farmers generally cannot support such transport services on present levels of earnings. Therefore, the amount of investment per hectare in Africa must be much larger per unit of present direct cost than in an OECD nation's agriculture. If we compute the rate of required investment for African agricultural land on this basis, then the combined direct and capital costs per unit produced in Africa are comparable to combined direct and capital costs for the United States.

Either the African farmer must receive a parity price, or he must receive productive capital investments in enhanced technologies which add to the same effect as a parity price. If the former, then the developing nations must include a food-purchase subsidy for lower-income ranges of the population as a capital cost added to other developmental costs. If the latter course is adopted, subsidizing technology supplied for improvement of agriculture, the capital cost occurs in this form. The true capital cost is the same, whichever method is used.

The dumping of food on the world market by the British Commonwealth and the United States (predominantly) has thus caused an aggravation of the world food shortage, by creating market conditions under which development of the technology of agriculture in developing nations is undercut. Therefore, the adoption of world parity prices for foodstuffs, combined with a supporting program of subsidies of food-purchase prices over the span of a coming generation, is the only sort of policy which fosters the overcoming of the world's food shortage.

The same principle of parity prices should be adopted for



Lyndon LaRouche speaks at a conference of the Food for Peace group in Chicago, December 1988. "To expand food production in developing nations at rates consistent with the needs of populations, there must be high ratios of capital investment (irrigation, disease control, soil treatment, fertilization, and mechanization)."

products of mining. These prices *should not exceed* a true competitive combined direct and capital cost for such products of mining globally. At that parity price, no true injury is done to industrial production levels globally. Below that price, mining is depleted just as agriculture is depleted by less-than-parity prices paid to farmers. Above that price, the market for mined products is contracted.

Furthermore, the maintaining of adequate capital costs for both agriculture and mining has the effect of reducing the parity cost per unit produced—through increasing productivity by means of technologically progressive, capital-intensive improvements.

There is a proper, calculable price, between the lunatic extremes of "free market" and "monopolistic" pricing. This true price, or equilibrium-price, is the proper *protected price*, to be protected chiefly by treaty agreements among nations to this effect.

Illustration: 'import substitution'

To understand the fallacies of "import substitution" policies, one should concentrate on the earlier discussions of the social ratios. First, we identify the policy itself.

The argument is made, that developing nations should decrease their dependency upon imported consumer goods by importing some consumer-goods manufacturing industries. It is often argued that such imported industries will have the advantage of relatively cheaper labor costs than in industrialized nations, and might even develop as export industries for that same reason of reduced labor costs.

In the main, the result is economic disaster.

Positively, a certain increase in the employed working class is effected, and a relatively more substantial increase of the commercial classes.

When these gains are compared with the situation of the population generally, the warning signs of potential disaster begin to appear. There is very little improvement of the well-being of the farmers, and the effort to keep working-class labor cheap means pressure against farm prices. A side effect of the expansion of commercial classes is an increase of employment in low-paid, unskilled labor-intensive services.

The increased employment in labor-intensive services and incomes of commercial classes are generally increases in the magnitude of d , a potentially inflationary effect. (Since d tends to rise more rapidly under such programs than C or V , $d/(C+V)$ tends to rise more rapidly than $S/(C+V)$.)

A clearer view of the matter is developed by considering the general requirements for development of rural and urban elements of the division of labor.

In order to develop agriculture in a developing nation, we must develop a modern urban superstructure as the instrument through which the transformation of the rural areas occurs. This requires the supply of capital goods of agriculture from urban centers to rural areas. *The emphasis on the capital-goods sector must therefore be higher than in presently, industrialized nations*, in such forms as high-quality steel production and related fabrication, in the development of the petrochemical industry (fertilizers, etc.), and in the development of high-technology energy supplies and transportation.

If we examine the social composition of the labor-force as a whole, we note that the true social cost of producing nutrition and fiber is extremely high, relative to industrialized nations. Therefore, massive introduction of nonagricultural consumer goods into the limited per capita market defined by relatively high social costs of agricultural products must be cost-inflationary. This cost inflation promoted by "import substitution" holds farm prices below price levels required to foster agricultural development, and keeps the farmers generally in relative illiteracy and poverty. The cost inflation depletes the margins of capital funds otherwise available in the form of consumer-goods purchases. In addition, a costly social infrastructure is required to support the requirements of combined imports substitution and commercial development, a cost which tends to outrun the growth of the tax base needed to support such an infrastructure.

The efforts of the state to correct such an imbalance take the apparent form of "economic repression" against that portion of the urban population's standard of living represented by combined services and manufactured consumer goods. Failing to make the correction sets the impoverished strata of rural and urban poor against both the state and the higher-income strata of the urban population. The ingredients of political-social destabilization are thus set into place.

The developing nation must discourage the marketing of "luxury" consumer goods, focusing upon nutrition, housing, education, sanitation, and health services. To accomplish this politically, the state must foster in the general population consciousness of the realities of agricultural and capital-goods development as the determinants of a sustainable household income level. *The emphasis on heavy industry must be made an adopted policy in the consciousness of the majority of the population.*

There are two particular illusions concerning economic history which must be eliminated from the minds of policymakers and political parties. The first of these interconnected illusions is the myth which proposes that present developing nations can repeat what the victims of this illusion falsely imagine to have been the history of self-development of the economies of presently industrialized nations. The second illusion, fostered by British liars and others, argues that the development of heavy industry occurred as an organic outgrowth of "free trading" consumer-goods industries.

The significances of the two cited myths is fully discovered by examining the truth counter to each. To approach that truth, a preliminary characterization of each of the myths proves helpful.

To compete on the world market, a nation must achieve a productivity equivalent to that prevailing in that category of world trade. Therefore, its urban goods-producing sector must be at least as advanced in social composition of capital-to-consumer-goods production-ratios as the most industrialized nations. Since the social ratio of capital goods for agricultural development must be higher than for presently in-

dustrialized nations, the ratio of capital to consumer goods employment must be significantly higher in developing nations for this reason, as also for the reason already given earlier.

We must think of an *initially relatively small (relative to population), but advanced urban manufacturing sector* engaged in rapid transformation of the agricultural sector. As this industrial sector expands, the ratio of capital to consumer goods production must be maintained at relatively high values.

We also think of this policy in correct terms, if we focus on the matter of bringing the overall per capita productivity of the developing nation up to presently industrialized nation standards. This requires a rapid transmission of advanced technologies to the economy, a transmission which is mediated chiefly through the capital-goods sector.

The emphasis must be on heavy (capital goods) industry from the start.

How does a developing nation construct a utilized capital-goods sector on the base of an underdeveloped consumer-goods market? The actual history of industrialization of the presently industrialized nations points the way to the answer.

Let us take as a reference-point Leibniz's successful development of the steam engine, in collaboration with Huyghens and Papin. (Papin was the first to power a vessel by means of a working steam engine at the beginning of the 18th century. The British lured Papin to England and suppressed his invention. It was the emergence of the Ecole Polytechnique which forced the development of the steam engine—via Carnot's collaborator, [Robert] Fulton, et al.—almost a century later!)

Leibniz's work centered, as we have noted, on the principle of heat-powered machines. For his immediate uses, Leibniz emphasized the development of the burning of coal as the heat source to be used. The development of the steam engine was the direct result of this policy.

To secure the coal for the newly revolutionized industries to be created, coal-mining must first enjoy technological transformation. One of the most critical bottlenecks was the pumping of water from the mines (and the related problem of ventilating the mines). Therefore, the initial practical emphasis had to be placed on developing the steam engine as the unique solution available for pumping water from mines.

These conceptions, and related conceptions of the mercantilists and Kameralists generally, were the basis for the industrial revolutions of the 18th and 19th centuries. In each case, the development of the industrial revolution was accomplished through military and other capital expenditures *by the state*. Canals, railroads, improved cannon, the top-down construction of Germany's metal-working and chemical industries under Kameralist influences, are to be compared with the launching of the industrial revolution in France by Carnot's forces. It was the same in the United States.

The development of the private-sector capital-goods in-



A Schiller Institute demonstration in Washington, D.C., April 1985.

dustry occurs chiefly through state-funded infrastructural (and military) undertakings. These projects are the initial market for the products of investment in capital-goods production. The smaller capital-goods industries develop, in turn, as vendors to the keystone capital-goods industries. The development of agriculture occurs through the transport of market-oriented rural production to the industrial centers of capital-goods development.

It is out of this evolving relationship between agricultural development and capital-goods development that the proper development of consumer-goods industries occurs.

Once started, after the initial phase, the consumer-goods industries grow relatively in respect of percentiles of employed persons. After this intermediate phase, the proper growth of the ratio of capital-goods to consumer-goods employment reasserts itself in a properly developing economy.

Illustration: logistics of food aid

During the summer and fall of 1980, this reporter and his associates mobilized forces in an (unfortunately unsuccessful) effort to provide adequate food relief for famine-stricken

regions of Africa. In addition to demanding such aid for Africa, specialists associated with our effort worked on the problem of the logistics of food delivery. The problem is well-known to African statesmen, but it is nonetheless worth summarizing the matter afresh in order to situate an important practical point of development policy.

If food could be delivered on time by ships, there are usually inadequate port facilities for handling the food. Once the food were docked, there are not transport facilities to deliver it efficiently to the locations where it is needed. If we employed air transport, we face the problem of transportation facilities for distributing the food from the landing-field sites.

Were I President of the United States, how would I properly handle the delivery of food to relieve famine in those parts of Africa suffering such difficulties? This leads us to the key point to be made here.

I would use the U.S. military's logistical capabilities, supported by civilian means. The leading edge of my effort would be the U.S. Army Corps of Engineers. We would employ wartime varieties of emergency methods to construct ports, roads, and rail systems, and air fields. By constructing the infrastructure required to distribute the food, we would have built a valuable part of the infrastructure which the nation needs. At first, the transportation network would facilitate the delivery of supplies into the interior. This same infrastructure would then be the means for conveying elements of agricultural technology to rural regions. The same network would become the means for shipment of developed market-products from farms in those regions to urban centers.

As part of the effort, I would propose to the nations being aided, that we cooperate to develop that nation's own combination of a corps of engineers and complementary civilian capabilities, to expand and maintain the infrastructure developed.

Where there exist well-defined project-requirements for water-management, transportation, ports, major energy installations, these should be set into motion for early completion in parallel. The requirements of such projects create the market for development of local industries to support these projects. It is wise to selectively promote those kinds of industries for support of such projects which are priority acquisitions for the continuing structure of the national economy after the completion of the specific projects which stimulate their initial development.

This emphasis upon a military approach to initial development of crucial elements of infrastructure should be properly understood.

France's Louis XIV was no echo of Louis XI. Through folly, Louis XIV was manipulated into rejecting the counsel of Jean-Baptiste Colbert, and to embark on ruinous forms of military ventures. Hence, in consequence of the ruining of France in that period, the development of modern military science was set back from the beginnings it had enjoyed

under the inspiration of the collaborators Leonardo da Vinci and Niccolò Machiavelli at the close of the 15th century and beginning of the 16th. Military science was revived under the leadership of Lazare Carnot, and Carnot's reforms imitated both by Germany's Scharnhorst and the West Point of Commandant [Sylvanus] Thayer during the presidencies of [James] Monroe and John Quincy Adams. These U.S. military traditions were revived out of bloody fields of battle during World War II, and have recently ebbed from public view with the passing of traditionalist U.S. military commanders typified by Gen. Douglas MacArthur.

The relevant revolution in military science was initiated, as we have noted, by Lazare Carnot, who developed the modern infantry around the revolution in the geometry of warfare effected with his forced development of mobile field artillery. These changes centered around the principle of logistics. An effective military force is essentially *a logistical capability in arms*.

Civilian examples of the same principles are the U.S. wartime Manhattan Project, which developed nuclear weapons, and the launching of NASA by President Eisenhower. In sum, the intensified, coordinated application of concerted logistical capabilities to an undertaking is the quickest and lowest-cost approach to accomplishing a task.

The importance of this approach does not flow from its putative military origins. Rather, in order to develop a capability for winning wars, it was prudent to deploy the most advanced capabilities of modern technology in an intense, coordinated manner to concerted effect. Military ventures have often promoted technological progress because the winning of wars requires the concentrated deployment of the most advanced technologies.

The development of regions of Africa should be defined in terms of military campaign-style projects of developing infrastructure, and deploying large-scale agricultural-development efforts aided by heavy engineering, as well as putting into place key elements of the nations' energy-production needs and fostering the development of selected key capital goods-producing industries.

The effect we must create is analogous on some points to the temporary employment of labor from developing nations in France or the Federal Republic of Germany. We must bring modern technology proximate to the population generally, so that the population may assimilate that technology where it presently lives, without suffering the concomitants of being a guest-worker in another nation.

There must be other elements, including essential cultural features, for this program. Nonetheless, the notion of the "crash development project" is the bare skeleton on which to suspend the other essential elements.

Notes

1. The author defined the concept of *net work* in the preceding chapter:

"If, as we have indicated, technological progress is the essential precondition for successfully perpetuating human existence at a certain level of average development of the individual, then the fundamental causal relations in society are those centered upon the proper measurement of technological progress: *net increases* in the potential relative population-density.

"From that standpoint, all of the work of society which merely maintains the society at the same level of potential relative population-density is describable as *virtual work*, and does not represent any *net work* by that society. *Net work* is represented by those forms and degrees of technological progress which increase the potential relative population-density."

2. In his most recent book, *The Science of Christian Economy* (Washington, D.C.: Schiller Institute, 1992), LaRouche elaborates his thinking on Marx by a comparison of the "common axiomatics of the economic doctrines of Adam Smith, Karl Marx, and the Emperor Diocletian. . . .

"Since the practice of statecraft must be concerned with the *durable survival* of the society and its included most essential social institutions, there can be no competent statecraft whose practice fails to address efficiently the requirements of a science of Physical Economy. Diocletian's decrees and the physiocrats Adam Smith and Karl Marx demand, on common included ground, that political-economy evade those conditions which are indispensable for the *durable survival* of a society.

"We have indicated, that a transfinite, positive ordering of increase of an entire society's potential population-density is the general precondition for durable survival."

A Leibnizian approach to city design

The "machine" for the effective development of a nation is beautiful cities bounded by fertile fields of modern agriculture. Such cities are the centers of culture and technology for all of the people, including most emphatically the families of the farmers which share the city at the end of a day's or week's work.

This notion has been the central conception for the development of civilization since earlier than the city-state republics of Ionian Greece. This was the policy of Alexander the Great. It was the genius of the Arab Renaissance. It was the guiding conception of the great Platonic cathedral-builders of France. It was the leading conception of Italy's Golden Renaissance. It was the conception revived, with important new specifications, by Gottfried Wilhelm Leibniz during the latter part of the 17th century.

The name which Leibniz gave to a city performing such functions was an "Academy."

We do not propose for African nations the image of the city of Europe or North America today. Nor are we proposing some costly luxury to be added to the list of urgent requirements of hungry people's nations. The concept of the city, properly elaborated and understood, is key to the notion of, and the successful implementation of development otherwise competently defined. The mere fact that this particular conception is poorly known today is not a fault of the conception, but is the fault of the decay in quality of education and moral outlook among the world-hegemonic institutions of the metropolitan nations.

The impediment to discovering the importance of this conception is symptomized most efficiently by those notions of development which portray advancement of the developing nations as a matter of sharing-out of some of the wealth presently concentrated in the metropolitan nations. As a poor man might clothe himself by purchase of garments which a wealthier man has discarded, so mean and arrogant professors and others of the metropolitan nations propose that developing nations must be satisfied to beg for shares at the back doors of the wealthier nations. So, the World Bank was developed as a poor nation's back door of the richer nations' International Monetary Fund (IMF).

In order to discredit that mean and arrogant misconception of development, as "redistribution of wealth" to the poor, let us now concentrate our attention on the alternative to such mean prejudices, before continuing with outline of the principles of the "new city" as the most critical "machine" for economic development.

Two meanings of 'colony'

In former times, before the Hapsburgs and the British East India Company made the term "colony" a name for mass murder, rape, and enslavement, that same word (and its synonyms) had a directly opposite meaning. This older meaning is treated in Plato's writings.

Under conditions where an old nation has become degenerate in engrained habits of outlook and practice, it may be the case that the most efficient approach to saving that decadent old nation is the development of a new nation which selectively embodies the best technological and cultural fruits of the old. So, the decadence of 17th and 18th century Europe was viewed by the Commonwealth Party colonists of North America.

As we noted earlier in this report, during the period of the American Revolution, the population of English-speaking North America had a literacy rate in excess of 90%, in contrast to approximately 40% in Britain. Moreover, the Americans were twice as productive as the British population, and had average incomes twice those of the British.

Contrary to liars such as the pseudo-historian Turner, et al., this relative prosperity of the Americans was not a consequence of natural resources available. U.S. Treasury Secretary Alexander Hamilton is explicit on this matter in his 1791 *Report on the Subject of Manufactures*. There is no permanently intrinsic fertility of agricultural land, for example. The wilderness is a stubborn and dangerous adversary of humanity. Man must conquer and tame that wilderness, and develop the land's fertility through improvements which are the products of man's labor. This evidence of early American history is totally clear and conclusive on this point, entirely supporting Hamilton against both the French Physiocrats and British East India Company agents such as Adam Smith and David Ricardo. Wealth is not determined as the so-called bounty of nature, such as "raw materials." Wealth

is determined entirely, exclusively by the application of the progressive development of the productive powers of labor.

The superiority of the average American over the average British during that century and afterward, was chiefly the fact that the English and other colonists of North America were morally and intellectually superior to the average countryman they left behind in Europe. Contrary to commonplace academic lies, the English colonists did not fly to North America to escape religious persecution in Britain. The colonization project was outlined as policy during the 16th century by Dudley and others. The purpose was to found on American shores a strong republic, free of the decadence of Europe. The development of this republic was to be used as a weapon for tipping the balance of forces against the forces of moral decay and decadence in Europe. A selection of the best parishes of England and other nations was carefully recruited to establish the new colonies.

Just as the republicans of Europe had founded those settlements, so it was the allied forces of the Anglo-American Commonwealth Party (Benjamin Franklin and Joseph Priestley, for example), together with their traditional Colbertist and Leibnizian allies on the continent, which assembled a strategic combination of allied American and European forces, which brought Britain to her knees before the forces supporting the existence of the newly established American republic.

In turn, the American Revolution became the rallying point for a fresh onslaught of European republicans in their own nations. The Ecole Polytechnique of Monge and Carnot is the political exemplification of this reciprocal connection between the development of the American republic and the effort to establish a republican order in Europe.

Today, European civilization, deeply enmired in moral decadence and associated decay, must be renewed. The key to the renewing of the United States and Europe is the development of at least a large number of the so-called developing nations. We must select the best cultural and technological fruits of European progress, and must deliver these fruits to the development of nations in the developing sector. We must build the new nations, not as approximations of the decadence established in the old, but *better than the old*.

The leading industries and universities of the developing nations must become superior to those of present-day Europe and North America. The new cities of the developing nations must be better than those existing today in Europe or North America. The best science practiced in leading institutions of the developing nations must rank among the most advanced science on earth.

The African will find it difficult, perhaps, to accept the present-day practicability of such a policy, until that African places himself in the shoes of a person, such as this reporter, who looks at Africa from the vantage-point of an enlightened true perception of the vital interests of the United States, or a nation of continental Europe. (We have been unable to

discover an influential person with enlightened perception of self-interest in Britain.)

Here I sit, for the moment, in the Federal Republic of (West) Germany, a political figure associated with a collectively influential (and deeply frustrated) circle of the United States. We, of these nations, have the existing or immediately developable technologies sufficient to solve all of our own principal material problems. Yet, because our nations are permeated with decadence and Fabian forms of moral decay, not only are we unable presently to deploy developed technology, but the industrial economy, the agriculture of our nations, and the moral qualities of our citizenries are being systematically destroyed.

What, in such circumstances, is the true interest of my own nation? I reflect: There are these developing nations, many being destroyed by famine, which urgently require the very same technology our own nations are too decadently foolish to deploy at home for themselves. Let us therefore give this best technology we have to those developing nations. Let us select from among our most capable scientists and technologists forces to assist the developing nations in using such technology, and to train citizens of those nations to master and develop further this same technology.

If we of the United States, for example, can but influence our own nation sufficiently merely to cause that flow of technology to occur, this commitment will provide the margin of change needed to reverse the process of decay in our own nation. Meanwhile, the success of this undertaking in developing nations will accomplish a renewal of the vitality of the human race which will benefit the United States (in particular) as the 18th century's American Revolution inspired old Europe.

How shall we finance such exports of technology? By the cheapest-cost long-term credit. If a nation is too poor even to use such credit, then let us employ outright grants over the span of a generation—until that nation is sufficiently developed to afford the credit. If we think of the benefits to world trade resulting over the course of two generations, this will turn out to be the most profitable thing we have ever done.

How exporting nations are repaid

Where possible, the means for financing development of developing nations should be low-cost long-term credits, with grants used for those cases in which the nations are too poor to permit use of loans.

This is to the double advantage of the developing nations. First, since the economic activities (infrastructural projects) of the state are the indispensable prime means for developing such nations, the use of credit for the financing of these long-term state investments provides the state political independence as a sovereign state in its principal borrowing-activities. Second, this enables the sovereign state to shape the flows of credit for private investments within that nation, free



A Schiller Institute demonstration in Washington, D.C. on Jan. 15, 1985. Ten thousand people rallied on Martin Luther King Day to demand food for Africa and the Strategic Defense Initiative for the United States. "If we of the United States, for example, can but influence our own nation sufficiently merely to cause that flow of technology to occur, this commitment will provide the margin of change needed to reverse the process of decay in our own nation."

of the caprices of foreign investments by multinationals.

Since the source of this credit is long-term, if low-cost loans, industrialized nations can provide this credit without being charged by large sections of their own citizens with giving away those citizens' tax-contributions to foreign nations.

The fact that the borrowing nations will repay such long-term loans is not the source of the advantage to the capital-exporting nations. The function of such long-term loans is twofold. Most immediately, such loan mechanisms are the only politically acceptable means for transfer of credit, both in terms of the sentiments of the tax-paying populations of the credit-issuing nations, and the sovereignty of the borrowing nation. Second, such debt, guaranteed by states, functions usefully as a medium of credit within the capital-exporting nation.

The economic gain to the capital-exporting nations is located in the effects of increased high-technology export activity, in fostering more rapid turnover of agricultural and industrial capital stocks in both the exporting industries and industries which are vendors to those exporting industries.

An excellent, recent illustration of the principle involved is the case of the Federal Republic of Germany during the period 1975 to 1979.

During that period the rate of productivity in the Federal Republic exceeded the effects of increased petroleum prices. The chief reason was the flow of high-technology exports fostered by the policies of the government of Chancellor Helmut Schmidt. The turnover of capital stocks promoted

by those exports was the principal “factor” promoting the increase of productivity of the Federal Republic’s economy.

This is, again, the principle correctly emphasized by Alexander Hamilton in *Manufactures*. The sole source of wealth of nations is the *development of the productive powers of labor*.

By exporting high-technology goods, the United States (forexample) increases the turnover of capital stocks, permitting replacement of old capital stocks by technologically more advanced capital stocks. This causes an increase in U.S. national productivity, which increases the wealth of the United States (and similar nations).

The source of ability of the developing, importing nation to pay for such purchased imports is the increased productivity of labor in the importing nation, resulting from productive employment of those imports as high-technology capital stocks.

It should be clear that the same benefit to the importing nation would not occur if the imports were either “luxury” consumer goods, or import of capital stocks for production of “luxury” consumer goods. A developing nation should import consumer goods and consumer-goods productive capacities *only to the degree* that the consumption of those goods maintains or increases in some essential way the productive powers of labor. Only those imports which increase the productive powers of goods-producing labor (directly or indirectly) will lead to sufficient increase in output of wealth to justify incurring loans for such imports.

It should also be clear that both the exporting and importing nations can afford to increase the traffic in high-technology capital stocks as rapidly as the importing nation can put such capital stocks to productive use.

Although a profit on a sale is necessary to commerce, to maintain progressive investment in capital stocks by the seller, the true source of economic gain is not that profit as such, but rather the increases in wealth secured through advances in productivity of the seller, through technologically progressive turnover of capital stocks.

On condition that such policies predominate in practice, national banking institutions of capital-exporting nations can issue relatively unlimited amounts of credit for high-technology exports, and at nominal interest rates. The limit to creation of such credit is defined by the exporting nation’s capacity to produce exports of high-technology goods, and, of course, by importing nations’ purchase of goods produced by such portions of the exporting nation’s national capacity.

Therefore, if the building of a new city in some African nation does in fact contribute to that nation’s growth of productivity in a significant way, it is in the interest of the capital-exporting nation to aid in making that new city possible. Therefore, the notion of creating new cities now is a fully practicable proposal.

This narrows the practical question to that of the nature of the benefits provided by such a city.

The African new city: cost savings

The designing and building of even a single new city designed to house 250,000 persons is a costly investment. Implicitly, we are indicating the early development of a string of new cities throughout the region of an African “common market,” each city with the *capacity* to sustain a population of from 100,000 to more than 2,000,000 persons. This is, indeed, a most costly investment!

Is it therefore too costly an investment to be considered for Africa at this time? On the contrary, *the savings of costs made possible with such cities are savings which relatively poor nations, such as African nations, cannot afford to defer*.

Let us review some of the kinds of savings of cost a modern city provides, and then indicate the reasons a new city is a far less costly investment than efforts to repair an old city.

The most obvious cost-saving provided by a modern city is the advantages provided by the density per square mile of inhabitants. The general facts are well known to everyone who has been obliged to administer or analyze governmental budgets. Nonetheless, it serves a useful purpose to illustrate the nature of the facts here.

How many meters of pipeline must be installed per household for transport of water, sewage, gas, or centrally distributed heat? Consider not only the installation costs, but also the maintenance costs per meter. How many cubic meters of street construction are required to be built and maintained per household? Apply per household costs of construction and operation to public transportation.

Consider also those categories of function whose quality increases with population-density: health services, education, for example. For the same cost per household, we can provide far better services in densely populated centers than in relatively dispersed areas.

In respect to other functions, which are required by only some portion of the population during any interval of time, as well as functions which are necessary to only some percentage of the whole population, many of these cannot be provided economically in any area but a densely populated one. If only less than 5% of a population requires a certain type of function, this can perhaps be provided efficiently within a densely populated area, but not in a relatively dispersed population area.

A further refinement of the same notion is obtained by considering the variety of functions with which a group of households are associated during a day or week. Members of these households have different kinds of employment, and it is desirable to have efficient arrangements for mobility of employment with the labor-force. Other members of the same households are in educational programs. The relationship among these various institutions and households requires optimization of the time required for members of households to have daily or weekly access to the places of such institutions.

These and related considerations can be unified into a single conception: the physical geometry of movement of people and useful things within a functionally interconnected whole.

Even from elementary standards of accounting practice, the only way in which to provide a necessary quality of life at an acceptable cost is to organize the indicated varieties of interrelationships into the form of a city.

Unfortunately, existing cities are unacceptable in terms of both function and effective cost of function. In some cases, an existing city is located with such unique appropriateness that we must rebuild such centers to the effect of correcting flaws in function and operating costs. It would be less costly to build a new city than to repair an old one. In some cases, it is not practicable to replace an old city; in some cases we must accept the higher costs of repairing it. In Africa, new cities are properly the dominant theme of a development effort.

In summary of this immediate point: cities are the least costly instrument for development, and the development of new cities is less costly than rebuilding old ones to make them useful.

Now, let us outline the concept of a new city by means of approximation. First, let us consider the matter broadly, as a matter of architectural policy. After that portion of our discussion, we shall focus on the crucial conception: the notion of the new city as a Leibnizian Academy.

Broad notions of new-city planning

In this next present portion of our discussion of the city, the specification we cite is hypothetical, excepting one of these. That exception is this: *The core of the new city must be an educational complex.* On all other points, our purpose here is to outline a sufficient number of the principal considerations to be included in city design so that the general conception of the design-problem is communicated.

The very center of the city—at least the *functional center* of the city—must be a complex of *pedagogical museums, libraries, and cultural centers* associated with the activities of those museums and libraries. All urban life should be organized around this complex of museums, associated parks, and teaching and research institutions. Naturally, this should include the leading medical services-research center of the entire region of the city and its surroundings.

Let us now contemplate the following hypothetical specifications for our new cities. The hypothetical criteria used for purposes of illustrating the concept here are the result of informed insight into certain of the leading problems of city-design, but are otherwise arbitrary assumptions for purposes of illustration. The purpose of this interpolated exercise is to outline the scope and implications of the policymaking involved.

Let us assume that we have defined two categories of urban centers. The first is a city in the proper sense of the

term's conventional usage: a population center including residential, industrial, commercial, and educational centers. The second is an industrial city, linked in each case to the labor-force of one or more nearby cities of the first category. The link is provided chiefly by a combination of high-density, high-speed passenger rapid-transit services and freight service.

For cities of the first category, let us assume that we have prescribed that each city will be designed to expand its number of inhabitants to a predetermined maximum population, that the allowed city-designs provide for maximum populations of only the following scales: 100,000; 200,000; 300,000; 500,000; 800,000; 1,300,000; 2,100,000.

Let us also presume that we have prescribed that there will be no urban extension into the countryside beyond the prescribed limits of a new city's design. Each will be an urban "island" which is surrounded by (chiefly) modern agricultural fields and forests, and connected to only the most proximate other cities by rail and major highways. So, industrial cities will be set off by intermediating rural area from the relevant regular cities.

Let us assume that we have varied the designs of cities somewhat to take into account the fact that one may be situated on a seacoast, with a harbor; another may be on a navigable inland waterway; another may be landbound.

If it became desirable to have an urban concentration whose population exceeded 2,100,000 inhabitants in capacity, we would place another or two of the specified varieties of new cities proximate to one another, linking them by a dense-traffic, high-speed mass-transit system, as a means of integrating the populations' functioning.

It is not hypothetical to propose that most of our new cities would be situated at either a seacoast, a navigable inland waterway, or an artificial waterway (such as a canal). For the present, and the foreseeable future, the advantages of cost of water-borne bulk and other heavy freight are so considerable that this cost-factor must be observed in all possible cases. This is not merely a matter of the freight traffic in and out of a functioning city. The building of a city is itself a massive problem of logistics. Otherwise, access to large supplies of water for commercial as well as population use is a major economic consideration. Therefore, in building an inland city in a site removed from major "natural" water courses, the construction of canals to that city to provide an additional mode of transportation of freight, as well as a conduiting of water supplies to the city and its surrounding agriculture (perhaps), is desirable.

Furthermore, one of our tasks is the transfer of excess run-off of fresh water from high rainfall areas into arid and semi-arid areas.

It is also not hypothetical to specify the notion sometimes named the "starport" design.

This design has three categorical features:

First, ocean-going, river, rail, truck, and air transport

of freight must be efficiently interfaced to facilitate rapid movement of goods economically from one mode to the other. Although it may not be customary to shift freight from water-borne bulk transport to premium-grade air-freight transport, the industries and other entities receiving and shipping freight are dealing with most freight classifications simultaneously. The consolidation and division of shipments and receipts of the freight transport in and out of a firm or group of enterprises in the same area is a crucial conception of freight management.

Second, to achieve economy in movement of freight, designs of and procedures for handling standardized containers are essential to rapid and efficient handling of freight generally.

Third, the movement and the warehousing of freight are properly treated as a single operation. Freight of less quantity than the capacity of a transport facility (train, bus, car, truck, and so forth) must be consolidated to make economical use of transport capacity without undue delay in turnover.

In the movement of freight (including warehousing) there are a number of premium economic considerations often overlooked.

First, every day freight is between the original shipper and ultimate receiver, that freight is part of *goods-in-process inventory* for the economy. As the ratio of this inventory to an economy's total production rises, the value of that inventory is a capital-factor for the economy.

Assuming that there are 250 regular industrial working-days in a year, each day the whole output of an economy or its equivalent is in transport, is an added amount of capital carried by the economy, in the order of approximately 1/250th of total national output. An average of five days avoidable delay in transport time is therefore 2% of national output carried as a factor of inventory cost, ten days 4%.

We compensate for the varied value of output by moving freight which has the highest value per pound by the most rapid more costly means of transport, and also use the most rapid mode of transport for even relatively low-value items whose late delivery would create a costly bottleneck in production. For bulk freight which has the lowest value per pound, we prefer water-borne transport. For some high-value freight, we use water-borne transport when the costs of alternative transport for that are so high that it is cheaper to carry the extra inventory cost than to pay the alternate increase in freight cost.

In all cases, the rapid transport of freight, including rapid transition at low cost from one mode of transport to another, is a major element of cost-variation for a national economy.

This also applies to inner-city distribution of freight from warehouses in the city. The movement of goods to stores, including daily deliveries of perishables such as foodstuffs, is an important aspect of this problem. (We shall come to that point in this immediate subtopic of discussion.)

Second, smaller communities and small enterprises with-

in cities depend for economic survival on regular deliveries of freight to and from their locations, even when the amount of freight transported is small. This problem was mastered within the U.S. economy during the postwar period by a system of regulated freight transport. Regulated freight charges permitted the integration of trucking operations with sophisticated warehousing operations. Freight was consolidated for delivery to numerous receivers along a route of delivery for an assigned truck, under conditions in which each shipment processed was a small part of the total load of the truck. This efficiency was enhanced by the use of computers.

Under the Carter administration, at the instigation of Sen. Edward Kennedy, "trucking deregulation" was initiated, with the U.S. trucking industry collapsing in both economic and delivery performance as a result. A comparison of 1976 delivery performances in the United States and the Federal Republic of Germany, with the miserable performance of transportation in Britain, shows not only the monstrous effects of the kind of deregulation introduced to Britain years earlier, but shows the importance to the entire economy of the quality of integrated warehouse-transport operations which regulation provided the United States.

Third, as we noted in the conclusion of the preceding section of this report, the single most crippling problem for the economy of most of Africa is the lack of adequate logistics. We must develop adequate logistics at optimal cost and capital outlay. The proposed approach to new-city development, combined with application of the "starport" conception and emphasis on widespread adoption of unitized container methods, is essential on this account alone.

We must concentrate urban activities in a few well-planned centers, and use those centers as distribution points for adjoining rural regions. By linking the relatively few new cities by means of a limited number of efficient transportation grids, using the "starport" conception as a guide to our approach, we can achieve the optimal improvement of logistics with the relatively least investment and over the relatively shortest span of time.

The optimal approach to establishing the new city is to construct a universal *substrate* first. For purposes of imagery, one might think of this as a vaulted honeycomb of tunnels and special other areas beneath the surface of the city.

This substrate will provide ways for installing utilities, for subsurface transfer of freight to locations within the city (preferably in electrically powered vehicles), for removal of waste from the city, for subsurface rapid public transit of people, for options such as subsurface independent passenger vehicle transport, for storage of vehicles. Such a honeycomb should be modular in general design, to permit economical changes of even a relatively radical alteration of technology of transport modes and services during the next century.

The quality we can afford to provide, both for the substrate and structures above the substrate, is largely a matter

of the useful life of the structures and relative costs of maintenance of those structures over their useful life.

The initial investment outlay is reduced by expanding the new city to its full capacity only as that expansion is required, and by governmental retention of title to the land area of the complete city and projected as well as constructed inter-city connecting passageways.

It is urgent to prevent speculation in the value of the land area itself, otherwise acquisition-costs for sites will eat away major parts of the funds dedicated to the finished construction. Africa must prevent itself from becoming the victim of the lunatic real-estate speculation which is the chief driving-force behind the present financial bubble and monetary inflation of the industrialized nations.

The required quality can be provided if we adhere to a policy of placing priority in household consumption on quality nutrition, housing, medical, and hygienic services, and education (including the cultural life of the population as a whole).

We divide the design of the new city into zones. In addition to the central educational region around the pedagogical museums, we set aside residential, industrial, and commercial areas. (The municipal center should abut the central educational area.) Initially, we wish to keep the scale of the commercial zone small.

The case of the medical services requirement illustrates the probable approach to be taken to certain other matters.

It is desirable to integrate a number of functions into residential areas. Schools for younger children, centers for preschool-age children, food stores, and certain forms of medical-service centers, to serve as service-points for routine health services care, and as conduits into the major medical services of the city.

The general problem of design to be resolved is the approach to relatively high-rise construction.

We must desire the provision of apartment-residences in multi-storied buildings with elevators to provide the advantages of economy and population-density. That is basic economy. The problem is to articulate such construction to the effect of providing light, greenery, and a sense of spaciousness at all levels of elevation. We are persuaded that this challenge can be solved economically by architects and associated scientists and engineers. We are also certain that the principles of Platonic ratios employed by the Gothic cathedral-builders, and successfully mastered by great Golden Renaissance painters and other artists, can be and must be applied to the problems of combining function and psychological effect.

It is a lesson of living in and studying cities that a good city is one with a large portion of trees, grass, and other flora pleasing to people, and that this effect can be achieved (admittedly at some cost) at higher elevations of a city's structures. It is also a practical fact that an increased density of such trees and other flora—especially trees and shrubs—

functions to moderate the climate of the city.

It is not necessary, of course, that all of the desired features be completed at once. Just as the construction of the city can converge on its intended design-limits as warranted, the completion of details of the design can be progressive—on condition that those design-features are adequately anticipated.

The essential thing which the citizen of such a city must experience over the course of the city's gradual completion is a sense of ongoing progress, of perfection. The city must be to the citizen a growing organism, a place which is fulfilling its design from year to year and becoming better as this occurs.

With such images of the city in view, many of the schools of the city, as well as elements in the city's health services, should be integrated into the structures of the residential zone. Those kinds of distribution facilities which the population requires for daily purchases, such as food stores, should also be integrated into the residential zone's structures. We should include centers which can perform multiple community functions.

All of these extensions of the service-functions of the city must radiate (in effect) from the feature of the city which defines it as an Academy, the center developed around the pedagogical museums.

To develop such new cities, we begin with the logistical network of both the nations and the common market they form. We plan the cities and that logistical network as one design-conception. The building of the logistical system is the skeleton which we construct first. The cities develop as prelocated nodes attached to that skeleton. The cities are constructed through the logistical system and service that system. The cities, as nodes, service the surrounding rural areas. So, the nation and the development of the nation are integrated as an ongoing process of perfection.

Over 2,300 years ago, at a time in which productive technology was far less developed than it is today, the relatively small military force led by Alexander the Great launched the greatest increase in the number of and connections among cities ever projected before that time, and created in a few years more strategically located cities than have ever been established since in so concentrated a time span.

With the assistance of the industrialized nations, such an undertaking can be accomplished in Africa. It is to the urgent advantage of the industrialized nations to provide that degree of assistance. The project is realistic. It would be unrealistic not to undertake it, considering the prolonged suffering and general risk to humanity should we fail to do so.

The economics of city design

In the light of the discussions in sections §2 and §3 of this report, we can determine facts concerning the development of the nation's population which enable us to predetermine the number, populations, and proper proportions of the

urban-rural population and of the composition of the cities 20, 30, 40 years hence.

We can project the birth rate, and can project with fair accuracy shifts in the death rates for the present and succeeding generations. Of the households of persons under the age of 70 years living 40 years hence, we know generally what percentage of the whole will be engaged in rural occupations, and what percentage in urban occupations.

The industrialized nations must export technology to developing nations, because, at present levels of advancement of capital-intensity in their own sector, the developing sector is the region in which the people to be employed are to be found. On condition that the productive powers of labor in Africa are adequately developed, the industrialized nations need Africa's progress only less than does Africa itself.

Let us assume that the projected rural population for Africa for the year 2021 is 30% of the whole population under 70 years of age. We would tend to assume, therefore, that an additional 45% of the total population labor-force so indicated would be employed in urban goods production, with not more than 15% of that total employed in consumer-goods production other than housing and infrastructure. Perhaps 15% of the total labor-force would be engaged in professional occupations including medicine, scientific research, engineering, teaching, leaving 10% for administrative, commercial, and nonprofessional service categories. These figures are not exact, of course, but they accurately indicate the general relationship among the indicated categories assuming a 30% rural component for the labor-force.

The average incomes of these African workers would be below U.S.-Europe-Japan standards chiefly by the factor of the excess ratio of rural to urban occupations by comparison with the presently industrialized nations of today's categories. It would be sensible policy to establish parity of household consumption with European households in the indicated priority categories of nutrition, housing, hygiene and health, and education and culture. Thus, incomes would fall below European standards only in the remaining categories of consumption.

That adjustment of income-parity by giving priority to

indicated categories is made tolerable by a policy of holding down the expense-ratio for the whole economy in administrative, commercial, and nonprofessional service categories. The inhibiting of the growth of the commercial and nonprofessional service categories corresponds to relative limitation on the lower-priority categories of household consumption.

In urban industrial and related categories, the African worker of 2021 should be approximately as productive as the European worker, and his industries of approximately the same order of effective technology and capital-intensity. He will produce as much, at least approximately, as the European worker, but will suffer a relatively lower income as a result of the lower productivity of African agriculture. (Since he must pay more for food, in terms of effective social cost of the production of food, he compensates for the higher cost of food by buying less of lower-priority categories of household consumption.)

We also know that under conditions of a shift of world policy toward technological development of the developing economies, the general rate of increase of industrial productivity should be in the order of 5% per year or greater. We also know that the energy consumption of industrial production will rise at a greater rate than gains in productivity. We can therefore estimate reasonably (at worst) what the production, productivity, and energy requirements for the advanced sector of today should be for the year 2021.

Similarly, we can project capital-intensity requirements.

These estimates provide us a guide for the standards to be applied to *competitive* industry in Africa (and elsewhere). Assuming that Africa obtains the credit for, as well as maintaining a policy of developing competitive industries, we can project the parameters for Africa's urban population. (What the prices are, we do not care; we need consider only the functions defined in terms of $S'/(C+V)$, $C/(C+V)$, and \bar{W}_s .)

These estimates enable us to project a budgeted set of data for the African urban population for the year 2021. Counting the cities and other urban centers in which this population is located then, we are able to project the proportions of the new cities for that year.

We know the ratio of workplaces in industry to total population, the estimated number of households (living units) into which that population is divided, the amount of energy production the city will require, and so forth.

Now, let us rethink the ground we have covered. Let us assume that the desirable figures for 2021 are not reached. Or, alternatively, let us assume that we do better in development of agriculture than is projected. What happens, in either case, is that we simply adjust the time-scale for rate of completed development of the cities. Such adjustments are feasible provided that the rate of development and proportions of that development are kept within conceptually definable limits.

If the rate of development is too low, then, perhaps, population will exceed potential relative population-densi-

ty—as the Club of Rome desires should occur very soon. If it is permitted that the commercial and nonprofessional service categories expand beyond the ranges we have implied in statements of budgetary goals of 2021, we shall suffer badly from such disproportions.

This brings us once again to the voiced objection of the African who argues, “This depends upon the speculation that the presently industrialized nations will recognize it to be in their own vital interests to provide such magnitudes of flow of technology to Africa.” We have examined that point earlier. We pointed out that the export of technology to such purposes increases the wealth of the exporting nations by increasing the turnover of capital stocks of the exporting sectors of the exporting nations.

Now, we examine that same point from a different vantage point.

If the African critic now agrees that it is advantageous to those exporting nations to support the sale of technology under proposed arrangements, the same African might still argue, “If I concede to you that it is advantageous for the exporting nations to adopt that policy, is this policy the only alternative available to them? Could they not increase their capital-stocks turnover, with the same benefits of increased productivity, some other way—and decide that they do not need Africa’s markets for their technology?”

The answer is—with a certain qualification—that the United States (for example) needs to export such technology to Africa. The need may not be as acute as it is for the life-or-death situation of Africa today, but it is a very strong need nonetheless. The proof is elementary.

The present level of technology is always expressed in terms of the social ratio $C/(C+V)$. This ratio is conditional, of course, on the potential rate of productivity $[S/(C+V)$, not $S'/(C+V)$ for this case], and is associated with a specific value of \bar{W}_s .

This means, however, that the rate at which technology can be sold is limited by the *number of industrial (or agricultural) operatives* which can be employed in use of such capital stocks. C is always a *social magnitude* which corresponds to a rate of production (and, consumption) of capital stocks of a certain correlated technology.

To restate the same point in cruder terms: the amount of profit an industrialist can earn is limited by the number of industrial operatives available for him to employ producing with capital stocks in which the industrialist invests.

To use another crude but relevant illustration. Suppose the United States were to buy high-technology capital stocks from U.S. industries, but to dump the purchased capital stocks into the Atlantic Ocean, rather than exporting them for use in Africa. Would the turnover of capital stocks in the industries producing for export not be the same as if those stocks had been exported to Africa?

This leads us down a slippery path, but leads us to an important conclusion nonetheless. We seem to be arguing

against *grants* for African development, as will be apparent immediately, but we shall show immediately after that that our fears on this account were an illusion.

The export of technology to developing nations, under the terms we outlined earlier, is covered by debts contracted (albeit at nominal borrowing costs) by the importing nations. (Except for exports under grants, of course.) The value of this debt is not that it is a debt. The value of this debt is that it corresponds to wealth-creating assets in Africa, *assets which are increasing in value through useful production*. That is the first difference between exports of technology on credit and dumping machinery into the Atlantic Ocean.

The next degree of distinction to be made is between debts contracted (for example) by African nations for import of useful technology and refinancing debts contracted to the International Monetary Fund, World Bank, or a cabal from the Basel, Switzerland Bank for International Settlements. The debt being refinanced, in the latter case, is the refinancing of a worthless debt—a debt which the debtor lacked the means to pay in the first place. The refinancing increases the debtor’s debt without improving the debtor’s ability to pay the debt the debtor was unable to pay in the first place. (This practice is sometimes represented as the practical wisdom of a prudent leading banker!)

In the case of the debt contracted for technology, the technology, if properly selected and employed, increases the debtor’s production of wealth by an amount greater than the debt service incurred. Provided the rate of interest on long-term credit is sufficiently low, all but the so-called least-developed nations would profit from such an arrangement.

In the latter case, the government or bank which issues the loan has not made a profit (on a low-interest loan). However, the seller has made a competitive profit on the technology sold. This adds to the tax base of the exporting nation on account of that profit, and also increases the tax base, directly and indirectly, through added productive employment in that nation. The government itself benefits from what seems an unprofitable sale in that way. Furthermore, as we noted, the turnover of capital stock is increased in the exporting nation, which results in increase of the wealth of the exporting nation in that way.

Therefore, as we noted earlier, the export of technology on low-interest, long-term credit is extremely advantageous to the credit-issuing nation, provided that the importing, borrowing nation’s economy actually benefits from that import through increased productivity. It is an elementary principle of sound banking, that if a loan is truly to the net advantage of the borrower, it is also to the net advantage of the banker.

This reality is reflected in the value of the debts of the developing (importing) nation as an instrument of credit within the financial markets of the exporting nation. As long as the exporting country creates the credit to support that loan through a combination of tax revenues and participating

lending of savings for the balance of the loan, there is no problem with the expansion of credit for export in this way.

What, then, of the alternate case, in which the technology is exported as a grant. In that case, this grant is a charge against the tax revenues of the credit-issuing nation. Two things immediately offset this burden on the exporting nation's taxpayers. First, this portion of taxation directly stimulates the economy, increasing the profits of the exporting firms and their vendors, and increases the tax base in the same manner as for exports shipped on credit. Furthermore, provided that the technology contributed to the developing nation is adequate in scale and effectively used, that developing nation receiving grants today becomes the next generation's customer for purchasing on credit terms. In both cases, whether on credit or through grants, the exporting nation is developing prosperous customers of tomorrow. Meanwhile, through the accelerated turnover of capital stocks, the exporting nation is increasing its productivity, and thus its national and per capita wealth.

Now, dividing the total C which the exporting nation must export to realize these benefits, by the $C/(C+V)$ characteristic of contemporary technology, we deduce the number of productive operatives who must be employed to put that amount of C into work. Without converting that C into capital stocks of actual production, there is no sound basis for producing it.

Thus, to the extent that the rate of progress of technology is limited, as we shall show now, the modern industrial nation's economy's greatest problem is *a shortage of people!* Without employable productive labor, to transform the wealth represented by capital stocks into still-greater wealth, the profits of the exporting nations would tend to collapse. To have that added productive labor, that productive labor must be created by households of a corresponding larger population. Of course, the people contributed to the labor-force by those households must also be developed to competence in the levels of technology the invested capital stocks represent.

The only alternative (to the same effect) to expanding the industrial labor-force of the world in scale is to increase the rate of development of technology such that all of the newly produced capital stocks could be invested in increasing the capital-intensity of existing production. In other words, the rate of increase of capital-intensity [of $C/(C+V)$] defines the limits of an industrial economy's reinvestment in intensification of its own existing scale of production per capita.

The industrialized nations as a whole must export technology to developing nations, because, at present levels of advancement of capital-intensity in their own sector, the developing sector is the region in which the people to be employed are to be found. The importation of guest-workers by the Federal Republic of Germany is an expression of this.

Therefore, on condition that the productive powers of labor in Africa are adequately developed, the industrialized na-

tions need Africa's progress only less than does Africa itself.

Yet, the African critic has another objection: "If what you say is true, then why do the industrial nations maintain a contrary policy? Are you suggesting that their industrialists and politicians are too stupid to recognize facts as plain as you represent your argument to be?"

In a manner of speaking, we are obliged to admit that the industrialists and politicians of the industrialized sector have been behaving stupidly. I emphasize, "in a manner of speaking." It is not exactly *stupidity*—although we must confess we have met a few parliamentarians in the United States and elsewhere who have proven themselves both sincerely and genuinely stupid. The correct name for what may appear to be stupidity is *ideology*. This brings us back to the topic of section §1 of this report, the pernicious influence of British ideology, most emphatically British irrationalist political economy.

There are few industrialists with whom we are acquainted who would not concede at least the nonmonetary aspects of the summary argument we have given in this immediate section of the report. Clearly, no executive is qualified even in the most rudimentary fashion to direct an industrial corporation unless he concurs with the principles we have outlined, *insofar as they bear upon production itself*. It is in the realm of *monetary* policy that otherwise accomplished and intelligent industrialists often are transformed into wild-eyed, irrational ideologues.

This reporter sometimes thinks of certain industrialists that U.S. labor could be twice as productive as it is today, and could even pay industrialists for the privilege of performing that work, and those industrialists would still insist that the cause of inflation was the failure of employed labor to pay their employers enough for that privilege of working. That is the extreme case, but such wild-eyed ideological nonsense erupts sometimes even from executives who otherwise operate their firms quite successfully. Such is the influence of ideology.

In many cases, there is strong reason to believe that the industrialist who spouts Prof. Milton Friedman's evil sort of nonsense about monetary policy is merely regurgitating foolishness he believes he is expected to be overheard stating, rather than wrong ideas he has concocted through the kinds of mental processes he would employ to direct an industrial enterprise.

Our African critic notes these remarks, but adds: "What you have said is very interesting, but does not really respond to my question. Presume that your economic analysis of the matter is correct and that the politicians and other influentials may have been behaving stupidly. The practical point of my earlier question was: Is there any basis for believing that the present policies to date will be changed over the course of the foreseeable near future? What is your response to that practical point?"

Permit this reporter to give the bleaker prospect first.

There is absolutely no assurance that this stupidity will end in such quarters. The present stupidity, or even worse, might very well prevail over the coming period. As was emphasized earlier in this report, there is no evidence in history to the effect that mankind as a whole has an intrinsic gift of correcting his errors in time to survive. There is no evidence from history which indicates that we might not be presently living out the last few years of human existence on earth. The overwhelming preponderance of evidence adducible from the course of the past decade and a half implies that the human race is virtually finished.

Perhaps, in fact, Africa is already doomed. Perhaps it is too late. Unless IMF "conditionalities" are ended, unless the forces allied with the Club of Rome are crushed, unless the pandemic of irrationality pouring out of Khomeini's Iran and the international rock-drug counterculture is crushed, and unless the forces allied with the Bank for International Settlements are defeated, Africa is already doomed to die of famine, epidemic, and raging, murderous banditry of one sort and degree or another. Either we succeed in moving the world toward the kind of policy recommended in this report, and soon, or Africa's case is utterly hopeless.

If there is any vindictive gratification to the dying populations of such a doomed Africa in the fact, the fact is that the policy which dooms Africa will lead soon enough to the similar doom of those nations which have tolerated the genocidal murder of Africa.

Only after we have faced the fact that the presently hegemonic policies do point toward the self-extinction of our species, are we equipped then morally to undertake what must be done. We must shed from our minds all illusions which console us falsely that, as in some children's story or a Hollywood movie, the "hero" will survive in the end. Only a perception of the fact that mankind might not survive its present folly could clear the mind of childish illusions, and enable us to focus our minds clearly on the means by which such doom of our species might be averted. It is only by way of such clear-headedness that we might succeed in finding a pathway out of this impending doom.

The practical question is therefore better posed in this fashion.

The practical question is whether the reality of looming disaster to civilization will penetrate the perceptions of influential statesmen and others soon enough, and powerfully enough to motivate them to reject the ideologies leading us toward such doom. There are indications that the reality of the situation is being sensed increasingly in some leading circles.

Since 1977, the key force which has prevented humanity from sliding into doom has been the close cooperation between France's Giscard d'Estaing and Chancellor Schmidt. The perceptions and responses of that alliance have been inadequate at many junctures but, on balance, that alliance has been the keystone for every effort which has hindered



A Schiller Institute demonstration in Washington, D.C. in November 1984. "The African critic has another objection: 'If what you say is true, then why do the industrial nations maintain a contrary policy? Are you suggesting that their industrialists and politicians are too stupid to recognize facts as plain as you represent your argument to be?'"

major disaster so far. The replacement of President Carter by President Reagan increases the possibility of positive developments, on condition that this is not offset by some disaster to the Giscard-Schmidt combination. In addition to these relatively positive features of the recent situation, there is a scattering of other useful developments.

The lack of an adequate perception of the danger in relatively positive leading circles is reinforced by the lack of a well-supported clear and adequate alternative set of proposals, to serve as replacement for the ideologies and associated policies which have been steering the world's affairs increasingly over the recent decade and a half.

In sum of these arguments, the proper response is that wishful dreaming, wishful hope that one might stumble pragmatically to survival through one worthless compromise after another, is a danger second only to the evil which wishful dreamers prefer not to see. Only well-founded hope, expressed as *unity around policies which could succeed, if adopted*, is a practical policy under such circumstances as those of the present.

The shock-effect of intensified disaster, the combination of a rapidly deepening global economic crisis and other lunacies erupting now, might awaken a sufficient number of influential forces to a sense of reality. If that occurs, and there is evidence to support the notion that this might possibly be occurring now, and if genuinely alternative policies have been placed on the table as seriously intended options, the

direction of policy would change radically.

In that case, and only that case, would the industrialized nations reflect the perception proposed in the preceding argument for such technology-transfer as a statement of the self-interests of the industrialized nations.

Therefore, the only practicable course of action is to place this alternative option on the table, as is done here.

Before turning to the topic of the Academy itself, we summarize the outline of the economic policy proposed.

The sole source of wealth is development of the productive powers of labor. The realization of the development of human labor depends upon capital stocks consistent with that developed potential skill. Under present trends in technological progress, the industrialized nations generally cannot maintain their economies without massive increases in exports of technology. Therefore, those technology-exporting nations must seek out those portions of the labor-force of developing nations which can be upgraded more or less immediately to productive employment using the more advanced technologies embodied in the capital stocks to be exported from the industrialized nations.

To sustain this market for technology, the limited portion of the developing sector nations' labor-force now able to assimilate advanced technologies must be expanded. This requires directed methods for promoting the development of the potentials of populations on a large scale. Therefore, if the export of capital stocks to developing nations is to succeed, there must be an accompanying twofold investment in the infrastructure of the developing nations. There must not only be a development of infrastructure to support the industries initially developed. There must be a massive development of the infrastructure needed for development of the population of developing nations more generally.

Under that policy, the very population of the developing sector which the Club of Rome proposes to murder is the greatest asset of not only the developing nations themselves, but of the industrialized nations desiring to export technology to those nations.

Every infant born in any part of the world has the potential for development of his or her mental powers to the level sufficient for adult competence in use of modern technology. That child can achieve at least an approximation for practice of the highest level of productive powers of labor in the world generally today. It is that potential development which is the only source of wealth, and only that development is a credit-worthy asset in the eyes of a truly prudent lender.

Yet, our justified enthusiasm for the potential of that infant, that child, is based on the knowledge that there exist practicable approaches which can develop such potentials even in the children of an illiterate, oppressed population. That enthusiasm is justified only to the extent that we build into the process of development the machinery which can catalyze a realization of that child's potential.

What occurs at the point that economic development had

absorbed most of the available population of the world? By that time, we must have increased the rate of development of technology such that we no longer depend upon expansion of the economy in scale. The long-term objective of the process of transforming the developing sector is to use the rapid turnover of capital stocks associated with development to increase the institutionalized rate of technological progress to the level we shall require once the two generations or so of transition to the new world economic order have been completed.

The Academy

The driving-force for the development of society is science in the sense we have defined *science* earlier. It is the mastery of the lawful composition of the universe, as we prove such mastery through technological advances correlated with increases in the potential relative population-density of society. The problem of organization of society is the problem of integrating the whole development and practice of the society around the highest levels of progress in scientific knowledge defined in that way.

It should be adequately clear at this point that neither Leibniz nor we intended the rule of nations by a "technocracy." A better name for science might be *statecraft*, a unity of method of outlook of the development of morality and scientific practice. It is otherwise what the term *politics* ought to come to mean.

The most efficient connection between the developed knowledge of the scientist and the mind of the child of a poor farmer or unskilled or semiskilled laborer is a device called a *pedagogical museum*.

A pedagogical museum is roughly described as a collection of historically ranked exhibits of the crucial features of development of a branch of technology. By branch of technology, we might mean productive techniques, we might mean the development of projective composition of paintings during the Golden Renaissance, or exhibits which demonstrate sensually the development and principles of the well-tempered system of musical composition.

For purposes of illustration, let us focus our attention now on a particular one of several alternative task-orientations of a particular variety of historically ranked exhibit. Let us think of an exhibit designed to reach the mind of the child of a poor farmer or unskilled laborer, a child of perhaps between 10 and 14 years of age.

The exhibit might represent the development of the steam engine. It might trace the development of man's knowledge of the electromagnetic plasma, beginning with a repetition of William Gilbert's 16th-century discovery of a magnetic plasma in the flame of a candle. The exhibit has the function of imparting to a child who spends perhaps an hour going, step by step, through the successive levels of historical development of that technology, a conception of the field of technology, and also a conception of that knowledge as some-

thing which has been developed through successive crucial discoveries.

The functions of the pedagogical museum for such children are to impart broader general knowledge to a large portion of the children visiting the exhibit, and to aid a child attracted by that subject in gaining further knowledge of the same subject. Furthermore, a parent who accompanies the child through such an experience shares the child's experience of gaining knowledge in that way. This strengthens the parent's knowledge.

Such pedagogical exhibits, developed by the most gifted pedagogues and technologists, supply schools with proven methods for efficiently communicating the same subject to students. The improved teaching of technology with aid of experimental exhibits is radiated from the museum into the school system generally.

The maintenance and servicing of such a pedagogical museum is properly the function of centers of higher education and research. So, in these and related ways, the pedagogical museum serves as a catalytic connecting link between the general population and the most advanced knowledge of that technology.

The pedagogical exhibits in agronomical subjects are of direct importance for improving the knowledge of farmers, and of strengthening the farmers' interest in and acceptance of technological innovations. The same staff which manages such an agronomical program in a pedagogical museum would also naturally be responsible for demonstration and experimental work performed in rural areas adjacent to the city.

Just as the pedagogical museum pertains to agriculture's needs, it pertains to the industries of the region.

In the same way, the pedagogical-museum staff responsible for exhibits concerning the development of the concepts of composition of paintings and music are properly responsible both for educational programs in those fields, and for coordinating musical, and other related cultural activities in the theaters and so forth situated in the same general educational zone of the city.

Around this, the development of the educational zone as a university follows.

In turn, in the same general manner illustrated by these samplings, the educational zone penetrates deeply into every aspect of the life of the city and surrounding rural area.

The educational zone developed around the kernel of the pedagogical museums is not merely a teaching machine. It is a research activity. The production performed in the industry and agriculture of the surrounding region, added to experimental workshops, becomes the laboratory of practice for much of what is studied and taught. To give vitality and direction to this process, the educational zone of a new city must be engaged in some aspect of scientific research which is of world importance.

Herein lies a vital principle of development.

The development of "developing nations" demands es-

cape from a national self-image of assimilating *only* technologies previously developed by other nations. A modern nation has achieved true sovereignty in spirit only if it achieves excellence in some important aspect of advancement of human knowledge generally. A people which can point to several institutions of its own nation, and can identify several important contributions to human knowledge associated with such institutions, is a people which knows that its children are capable of equaling in importance to humanity the children of any other nation.

Otherwise, as we have indicated earlier, true knowledge is not a collection of "facts" and "formulas." Each scientific revolution, we noted, supersedes whole masses of supposed "facts" and adored "formulas" of the previous period of scientific achievement. What endures in value once an old science has been overturned by one or two subsequent scientific revolutions, are not the "facts" and "formulas" associated with that old development of science. What survives are *the principles of successful discovery* by which successive scientific revolutions were accomplished.

To teach science is to teach the principles of discovery. To teach discovery, one must experience and know discovery as one's own experience of achievement. What is important in a truly great scientific institution is not *what* it discovers, but that it *does* discover. It is that latter which imparts vitality to an institution.

In the same sense, we make a mistake if we imagine that the development of the productive powers of labor to a certain degree is a matter of the specific facts and habits of practice which the workman has learned. There could be no more certain cause for costly failures in an industrial plant than a labor-force whose abilities are limited to what facts and habits of practice they have learned. The first variation from the conditions of production consistent with such limited facts and habits, and such workmen would stubbornly fail to perform successfully.

The secret of production is the disposition and capacity of the ordinary workman to innovate successfully. The workman innovates on the basis of a certain level of experience, training, and developed skills—that is true. However, he innovates from that starting point of reference. He does not innovate to change the product in defiance of quality specifications. He innovates to overcome those variations of the conditions of production which prevent him from achieving the prescribed quality of result merely by standard, learned methods and procedures. He innovates to bring the result into agreement with the prescribed quality. Without that disposition and competence for innovative problem solving by the workman, a firm cannot hope to compete successfully.

The essence of the development of the productive powers of labor is the development of a disposition and capacity *to discover*, and to recognize what is and what is not a valid discovery. As mankind progresses from a relatively lower to relatively higher level of productive powers, the essential

feature of the change is *an increase in rigorous powers of discovery*.

The great obstacle to be overcome is exemplified by the hypothetical case of the farmer who refuses to improve his methods of production, arguing that he adheres to the methods used by "my father and his father before him." Unfortunately, such obstacles are not merely hypothetical. This is the problem we must overcome. We must break through such walls of stubborn adherence to habits just because they are habits, and impart to the individual a sense of discovery, of progress.

The stratum on which that effort is focused with the greatest relative degree of success is the children and youth. If the children and youth assimilate the notion of progress, of discovery, that will aid greatly in moving their parents to acceptance or at least toleration of changes. The emphasis must remain on the fact that two generations of youth must be educated before the baggage of generations of illiteracy and oppression can be made a mere memory of the past.

The new city, developed around the organizing influence of its educational zone, is the machine for effectively transmitting development to both urban populations and into the surrounding countryside.

The role of the elite

The term "elite" too often signifies a privileged caste, a caste which gratifies its personal greed at the expense of society more generally. The alternate significance of "elite" is a dedicated body of servants of society, a stratum of persons who have been developed in knowledge and moral outlook to approximate the qualities Dante Alighieri describes in the "Paradise" canticle of his *Commedia*. It is of that latter variety of "elite" we speak now.

The continuing essential problem of organizing society into forms fit for human habitation is centered in a predicament examined most closely—in extant literature—by Plato and Dante. The human population exists in a condition of assortment of its members among three categorically distinct varieties of moral world-outlook. From the lowest to highest of these three ranks, Plato's Socrates borrows from a Phoenician myth to label the three respectively *bronze*, *silver*, and *golden* souls. These are, respectively, the essential moral outlooks Dante treats successively in the "Inferno," "Purgatory," and "Paradise" canticles of his *Commedia*. If for no other reasons, the treatment of this problem by Plato and Dante would prove them the two greatest known masters of statecraft in literature today.

The lowest moral level of humanity, the *bronze* souls, the inmates of the "Inferno," is characterized by those persons who have rejected the moral implications of individual mortality. They flee into hedonism, governing their conduct by the persuasion expressed by Thomas Hobbes, that society is a state of "war of each against all," each seeking momentary gratification of what he perceives at that moment to be

his "inner psychological needs." Since the hedonists reject any rationality above the dictates of pleasure and pain, as do Bentham, John Stuart Mill, and the modern existentialist and structuralist ideologues, they are *willfully irrational*.

This willful irrationality is what is termed "human nature" by the British. It is their, British nature, but it is not human in a *moral* sense of human.

The highest level of humanity, the *golden souls*, the inhabitants of "Paradise," are those who have accepted fully the implications of the moral reflections on mortality. These persons do not locate their self-interest in their mortal passions; they locate their fundamental self-interest in the development and implementation of their powers to bequeath a benefit to the span and duration of posterity. They defend a self-interest of their individual persons only as that person's development and capacity to act for posterity's benefit is the mortal instrument of their higher self-interest. They act in the realm of the living mortals, but their identity is located in the span of the generations of others like themselves in dedication, who have preceded them and who—if humanity does not destroy itself—will come after them to continue that work.

In between these two conditions, and sharing a contradictory portion of the qualities of each extreme condition, one finds the majority of the moral citizens of a civilized nation. On the one side, their hedonistic side, they are motivated from moment to moment chiefly by pursuit of desire for what Dante describes as "earthly paradise." Their day to day goals are their passions, their desire for status, and so forth. Yet, unlike the irrational, immoral British, these citizens are constrained by conscience to wish to do nothing contrary to reason, nothing contrary to the well-being of their posterity.

The associated flaw of these residents of "Purgatory" is that they are what Friedrich Schiller described as "little people." Their knowledge is focused upon their immediate family, neighbors, and friends, upon their success in employment. Fixed principally on such little matters, their minds are made too small to encompass important matters of policy. What they do not see or feel in their immediate environment, they do not know, and they are generally incapable of thinking further ahead in time than a relatively short distance beyond the tips of their noses.

They are intent to be rational and moral, but their minds are too shrunken in scope of interest to assimilate any but the smallest facts. Hence, they are ignorant of morality in a rational form. They know morality chiefly as precepts which they have assimilated into their consciences, precepts which are the shadow of morality, but not its substance.

Concerning strange and distant affairs, they are predominantly ignorant, incapable of assimilating as beyond the little matters which concern them in day-to-day practice. Therefore, concerning things they do not know, which appear strange to them, or which occur in distant places, their opinions are echoes of the most recent gossip they have learned from a person they consider a friend or whom they consider

to represent importance, authority.

A society based predominantly on citizens who correspond to that state of Purgatory may survive and progress, on condition that the "important personages" to which the little people look upward for authoritarian gossip on distant and strange matters are themselves properly informed, or those persons esteemed to be important are members of the elite stratum of residents of "Paradise," are *golden souls*.

As Plato emphasized, the possibility of establishing and maintaining a successful democratic republic required that the republic be guided by the influence of a dedicated elite of *philosophers*, by the *golden souls* of Socrates' Phoenician myths. The moral forces of society must predominate over the immoral hedonists, which requires that the *silver souls* be guided on strange and distant matters of policy by the influence of the relatively tiny elite of *golden souls*.

Such a golden soul is both a *patriot* and a *world-citizen*.

A golden soul must be an unswerving *patriot*, since the only effective instrument for self-government of mankind is the sovereign nation-state. He must defend his own nation-state's sovereignty and true self-interests at all costs. There his principal duty to humanity is concentrated, and the principle of the sovereign nation-state must be defended in each national republic's instance on behalf of the defense of this principle for the sake of all humanity.

A golden soul is also a *world citizen*. It is among the generations of *golden souls past and future, as well as present, that the golden soul finds his or her own primary, higher personal identity*. From this vantage-point, the development of all peoples, all individuals, is his or her responsibility. Each sovereign nation-state is, in that respect, his or her responsibility, just as the development of new sovereign republics where none exists is his or her duty.

There is no conflict between these two commitments.

The *idea of a conflict* is a product of the pernicious influence of British irrationalism. To British philosophy, as to the vile Milton Friedman, a nation is merely a collection of individuals, which ought to tolerate the burden of no higher common moral purpose than the "free market" in hedonistic pursuit of heteronomic pleasure and pain. Just as British philosophy defines a nation as a Hobbesian "war of each against all," so that same wicked philosophy defines nations as hedonistic egoisms, "each" implicitly "in war against all." Hence, for wicked philosophers, such as those, the interest of the state is whatever capricious whim has episodically seized the impulses of this or that ruling circle of a nation, and patriotism in such a nation is dutiful service on behalf of that whim.

With the true republic, matters are defined differently.

All nations are properly under natural law. If republics are wise, they construct their constitutions in such a fashion as to create powerful hindrances against the imposition upon the state of some wicked episodic whim of a ruling circle or a misguided electoral majority. A state ordered according to

natural law has no conflict of fundamental self-interest with any other republic ordered according to natural law.

A true republic, as President Charles de Gaulle defined a proper republic of France, constitutes itself not as a collection of individuals, but as a nation ruled by a perception of and commitment to some special contribution to humanity as a whole. Through such a state, the individual citizen's efforts are provided efficient expression as a contribution to the moral purpose of his or her nation. Otherwise, the function of the republic is as we summarily described it earlier.

The development of Africa, like the successful establishment of the federal constitutional republic of the United States during the last quarter of the 18th century, requires two special forces working on its behalf. It requires a commitment by an international network of persons at least approximately *golden souls* who are dedicated to the successful outcome of the undertaking. It requires, in Africa itself, a force akin to Benjamin Franklin's fellow-conspirators inside the American colonies and young republic. This latter must be a developed republican elite, akin to and part of the international network which aids its enterprises.

The development of such an elite for Africa requires an ongoing process of development of promising youth, youth detected to be potential candidates for the future generation of Africa's *golden souls*. These must be educated according to the same principles we have indicated for the work of the Academy form of the proposed new cities of Africa. By developing in them the outlook and other qualities they must in due course impart to others, we produce the elite needed for the successful development of the new cities.

At present, Africa suffers from the fact that too many of those young persons going abroad for education prefer to remain abroad. Three measures are needed to shift such a trend.

1) Rather than permitting continued emphasis on the notion that the best education is to be found abroad, we must develop several of the best educational institutions in the world in Africa itself. The process of development of several new cities is the optimal circumstance for situating several of the needed qualities of universities in the educational zone of areas in the process of being developed as new cities.

2) There must be a concerted effort to recruit members of a future elite from among Africans resident abroad as students or young working professionals.

3) A unifying conception of the exciting development of Africa, a sense of the privilege of performing a part in this development, must be developed and promulgated as a means of rallying talented persons, that it will be a more worthwhile and joyful thing to build new nations in Africa than to pursue the dubious "earthly paradises" offered in jaded, morally decaying pleasure-pens of Europe and North America.

These three points are, of course, an underlying theme of this present report.