

*Substantive
concepts*

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Probleme der normativen Ökonomik und der wirtschaftspolitischen Beratung

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**Social Costs and Social Benefits —
A Contribution to Normative Economics**

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Social costs and social benefits are phenomena which transcend the traditional scope of economic theory. For this reason they have remained at the periphery of economic analysis. Indeed, they raise issues which can only be disturbing to those who are convinced of the fundamental efficiency of the economic process in a system of business enterprise. For the neglect of social costs and social benefits by the price mechanism sets the stage for considerable social inefficiencies in the allocation process which go far beyond the limitations usually conceded by neo-classical economics. The theory of social costs and social benefits raises some of the most fundamental and critical issues not only with regard to the substantive rationality of the price system but also with respect to the use of formal concepts and formal optima, the importance of quantification in monetary terms and the relevance of pure economics for the formulation of economic policies, and economic planning in general. In fact, the theory of social costs and social benefits lends support to those who have long argued in favor of an integrated institutional approach for the study of economic phenomena.

The present paper is concerned with a number of questions which deal with such issues as the proper classification and definition of social costs and social benefits as well as their quantitative measurement. In addition, we shall discuss some of the normative implications of social costs and social benefits for the formulation of economic policies and economic planning.

Problems of Definition and Classification

Definitions and classifications are never of secondary importance. They are basic and usually of far-reaching significance in their ultimate theoretical and practical implications. Concepts are tools which permit us to organize social facts into a general pattern. They guide our observations and experiences and help us to establish some preliminary order. At first our original notions reflect the uncertainty and indefiniteness which surrounds the beginning of all scientific thought. It may be said that such indefiniteness is unavoidable in new concepts and may

even account for their fruitfulness as a tool of analysis. As the concepts are used and developed in the study of concrete social phenomena they gain in precision. Clearly defined concepts are prerequisite tools for the intellectual perception of reality and the formulation of satisfactory hypotheses.

The concepts of social costs and social benefits are not freely invented fictitious notions that have no counterpart in reality. On the contrary, they have their origin in observable social phenomena. As a matter of fact, they refer to a variety of disutilities and "external" economies with identifiable common characteristics. While these concepts are based upon a critical examination of empirical phenomena they are not simply descriptions of such phenomena and experiences. They are carefully formulated "images" or representation of reality created for the purpose of theoretical interpretation. They abstract by simplifying or "condensing" common characteristics of phenomena grouped as a class and render more precise what otherwise would remain ambiguous and obscure.

It might be argued that if the concepts of social costs and social benefits refer to a variety of social diseconomies and (external) economies which arise under different circumstances they lack a sufficiently clear meaning or definition. Such, however, is not the case. Indeed, the fact that social costs and social benefits arise under different conditions does not mean that the concepts are necessarily imprecise or vague. The precision of an analytical concept depends upon the clarity with which it is possible to define the common characteristics of the empirical instance to which the concept refers. If uniqueness of empirical conditions and quantification were to be made the prerequisites of all scientific concepts we would have to abandon any attempt at generalization in the social sciences. Or, more specifically, we would have to develop separate concepts for each kind of social disutility and social benefit depending upon the specific situation in which they may arise. This would be equivalent to a concentration on particular events or the end of theory in social inquiry. It would involve a return to a radical and naive empiricism which lacks generic terms and concepts and which develops different verbal expressions for each particular process. No doubt, it will be difficult and sometimes impossible to attribute an unequivocal quantitative value or importance to the disutilities and economies under consideration but this is a problem of quantification which must be distinguished from the need for clarity in the formulation of concepts.

Specifically what are social costs and social benefits? What are their common characteristics? Do we possess as yet a satisfactory classification of social and private costs and of social and private benefits? Is such a

classification possible? Social costs can be defined as harmful effects and damages sustained by the economy as a result of private productive activities. Social costs may take the form of a variety of "diseconomies", increased risks and uncertainties which may extend far into the future. What makes these diseconomies social costs is the fact that they are borne by third persons or by society. In this sense they are indeed "external". Of course, the term external is relative. What is "external" depends upon the degree of consolidation of industry. Furthermore, if production becomes centralized the unit of investigation is the entire economy; in this case the term "external" loses its meaning altogether for all costs would be internal. However, even under these circumstances we may speak of social costs in the sense of wasteful outlays, avoidable inefficiencies, and harmful effects on public health and public wealth.

These considerations also throw light on another aspect of social costs: The general interdependence of all parts of the economy make it likely that, with any given level of vertical and horizontal integration, social costs caused by a particular firm may adversely affect not only third persons but other entrepreneurs and may even adversely affect the firm originally responsible for their occurrence. For instance, the social costs of air pollution are borne by everybody, including the entrepreneurs who originally contributed to it. They as well as other firms will see their private costs increased by the negative effects which air pollution may have on the health of their workers and the value of their property. In this way part of the "social" costs are absorbed into private costs. In still other cases the social costs may assume the form of unnecessarily higher private costs of production. This happens, for example, when the competitive race to exploit an oil pool leads to a technically inefficient spacing and multiplication of oil wells. In this case, the social diseconomies take the form of unnecessary capital input which, together with the subsequent loss of natural gas and reservoir pressure, constitute an increase of production costs. Similarly, in the case of soil depletion and erosion the attempts by farmers to minimize current costs has the effect of increasing future costs of cultivation. In all these instances at least part of the social costs take the form of higher private costs. However, do these examples affect the usefulness of the distinction between private and social costs? If private enterprise internalized the total or a major share of the social costs caused by its productive activities the distinction would be less than fully satisfactory although even then it would not entirely lose its significance. We would be faced with a kind of joint costs, that is social costs which due to economic and technical interdependencies of the productive process, are at least in part reflected in higher private costs of production. Actually, however, we

are confronted with a different situation. For example, that part of the social costs which are caused by air and water pollution and borne by the firm whose productive activities contributed to the pollution of the atmosphere (or river) is rather small — if compared with the total of the social losses sustained by the community. Admittedly, the proportion of "internalized" social costs may be higher in the case of duplication of capital costs and the losses of reservoir pressure in the oil industry and the depletion and erosion of the soil in agriculture. But even in these cases the original distinction does not lose its usefulness if we consider that the increased private costs are avoidable and are actually passed on to the community in the form of higher prices. They are damages or diseconomies sustained by the economy in general, which under different institutional conditions could be avoided. For, obviously, if these costs were inevitable under any kind of institutional arrangement they would not really present a special theoretical problem. We are thus led to the conclusion that in order to reveal their origin the study of social costs must always be an institutional analysis. Such an analysis raises inevitably the question of institutional reform and economic policy which may eliminate or minimize the social diseconomies under discussion.

Turning to the problem of social benefits we are faced with similar issues of definition and classification. For the term social benefits refers to all those utilities and "returns" which tend to accrue to society either as a result of institutional arrangements or due to private productive activities. Like social costs these broader social benefits belong to those omitted aspects of reality which classical political economy did not succeed in incorporating into its theoretical framework. It is true that Adam Smith developed a theory of social benefits in connection with his doctrine of public institutions and public works which, "though . . . in the highest degree advantageous to a great society, are, however, of such a nature, that the profit could never repay the expense to any individual or small number of individuals and which it, therefore, cannot be expected that any individual or small number of individuals should erect or maintain"¹. Lord Lauderdale and Friedrich List pointed to essentially the same kind of social benefits in their critical doctrine of "public wealth" and "productive forces". Later Henry Sidgwick called attention to useful services which were "incapable of being appropriated by those who produce them or who would otherwise be willing to produce them"². J. B. Clark developed a theory of non-competitive economics based upon the principle of "inappropriable utilities"

¹ Adam Smith, *An Inquiry into the Nature and Causes of The Wealth of Nations*. (New York, Modern Library, 1937), p. 681.

² Henry Sidgwick, *The Principles of Political Economy*, Book III (London, Macmillan and Co., Ltd., 1901), p. 412.

which "flee from him who creates them and diffuse themselves among the members of the community"³. Even Marshall's "external economies" may be considered as social benefits which accrue to every firm and for which no remuneration can either be charged or need to be paid'. These earlier discussions of social returns remained isolated attempts which moreover were never systematically developed'.

Social benefits differ from private utilities and private returns by virtue of the fact that they cannot be divided or withheld. Once produced, everybody benefits and nobody can be excluded. In short, social benefits accrue to all members of society. This inability to divide or to "monopolize" even a share of social benefits reflects not only the existence of basic economic and technological interdependencies within the economy but is also due to the fact that some of the most important safety and security needs as well as cultural requirements are collective in character. That is to say they concern all members of society and their gratification automatically benefits every individual. Whenever we are confronted with social needs or public interests or purposes we enter the field of social benefits and the legitimate sphere of government, which is "to do for the people what needs to be done, but which they cannot by individual effort, do at all, or do so well, for themselves"⁴.

Without taking account of these indivisible social needs and social benefits it is impossible to arrive at an understanding of the scope of the public economy and public investments and of the formulation of economic policies whether in economically advanced countries or in the underdeveloped world. While we cannot here go into a detailed discussion of the concept of social benefits it is possible to raise the

³ J. B. Clark, *The Philosophy of Wealth, Economic Principles Newly Formulated* (Boston, Ginn and Company 1885), p. 215.

⁴ However, it is at least doubtful whether Marshall's narrower concept of external economies which after all was developed only to refer to the favorable effects external to the firm but internal to the industry can be and should be made to denote also the much wider ramifications of social benefits which accrue to all members of society. Neither the theory of external economies nor modern welfare economics seems to be able to cope adequately with these broader socio-economic benefits.

⁵ Only recently has the concept of external economies given rise to a body of literature which questions the validity of market criteria for the planning of investments in underdeveloped countries. See: H. Leibenstein, *Economic Backwardness and Economic Growth*, (New York, John Wiley, 1957); J. E. Meade, *External Economies and Diseconomies*, *Economic Journal*, March 1952, pp. 54-67; and Tibor Scitovsky, *Two Concepts of External Economies*, *Journal of Political Economy*, April, Vol. LXII 1954 pp. 143-151.

⁶ *Fragment on Government*, July 1, 1854 (?), *The Collected Works of Abraham Lincoln*, R. P. Basler, (ed.), vol. II, (New Brunswick, N. J. Rutgers University Press, 1953, p. 221).

question of whether we can ever hope to distinguish them from private benefits or individual utilities. Does the fact that social benefits accrue to all members of society (or that external economies in the form of lower costs and cost advantages can ultimately be internalized in the cost and price structure of private firms including perhaps the firm which originally contributed to the external economies) militate against the distinction between private and social benefits? No doubt, it may be difficult to disentangle social and private benefits. But "in practice" the whole process of dynamic socio-economic development may be said to consist in nothing else but a continuous incorporation of social or external benefits into private costs and private benefits. As a matter of fact all benefits and utilities may be said to be experienced only by private individuals. It is their needs and requirements that are satisfied. Surely this commonsense realization does not make the distinction between private and social benefits useless or unsatisfactory. The fact that in reality everything can be shown to be interrelated cannot be held against the distinction as long as the latter points to significant and practically relevant characteristics by which phenomena can be classified and separated from one another. Social benefits are indivisible and hence elude him who produces them; they accrue automatically to everybody. Their systematic production calls for social action by specialized public agencies which are concerned with the formulation of social goals and public purposes. In short, since they will not be produced by private firms their creation presupposes a collective decision. We are thus led to the inevitable question of the objectivity with which social benefits (and social costs) can be defined.

The Objective Character of Social Costs and Social Benefits

Is it possible to identify and define social costs and social benefits objectively? Can these extra-market phenomena be defined only in terms of a given set of ultimate ethical postulates and ultimate values which are beyond the scope of any scientific treatment? Are we inevitably faced with a plurality of possible points of view and an infinite number of possible standards of value when we attempt to identify and define the social costs and social benefits which the market system tends to ignore or neglect? Or more specifically, do we abandon the realm of the objective, that is, of scientific validation and refutation when we concern ourselves with social costs and social returns? Do we enter the realm of purely subjective and ideologically tinged judgments? Do we open the door to what Max Weber called the "ethics of conviction" with its unconditional and uncritical devotion to an absolute idea and fixed aim which leads man to do what he believes to be right without asking what the consequences are? Or do we stay firmly in the realm

of the "ethics of responsibility", in Max Weber's terminology⁷ — with its implicit demand for an objective evaluation of the situation as it really is and the insistence that our judgments remain subject to empirical validation and refutation? In short do we keep the door open for the possibility of disproving our evaluations? It is in this fundamental and pragmatic sense of susceptibility to revision in the light of experience and the empirical test that we shall use the term "objectivity" in the following discussion.

As a first step it is important to recognize the purely formal objectivity of market values. It is true that market values are numerical and quantitative. As such, they can be added and compared in terms of operations which are simple and easily understood. But their numerical character which enables us to compare and measure them unambiguously in the formal sense of all mathematical operations conceals their substantively more or less arbitrary character. Both Max Weber and Veblen⁸ (and of course many others since) recognized this clearly by referring to advertising and the effects of sales publicity on consumers' wants and commodity prices. Moreover, Max Weber, and again many others before him and since, have been explicit in showing that money prices are the outcome of market power, conflicts of interests and compromises. For this reason, market values, although expressed in numerical terms "without a wholly subjective valuation"⁹ are substantively speaking far from being unambiguous and objective. Indeed, in a world of oligopolistic price-fixing they are as devoid of "objective" validity as many of the subjective value judgments which Weber considered to be in principle beyond the scope of scientific validation.

What do we mean by "formal" and "substantive" and what is the bearing of these terms on the objectivity of the definition of social costs and social benefits? Following Max Weber we shall use the term "formal" with reference to quantitative calculations or accounting in numerical terms. The prototype but not the only kind of such calculation

⁷ Max Weber, *Politik als Beruf* in: *Gesammelte Politische Schriften*, Munich, 1921 p. 441 ff. On the potential conflict between the two "ethics" see F. H. Blum, *Max Weber: The Man of Politics and the Man Dedicated to Objectivity and Rationality*, *Ethics*, LXX, No. 1. (October 1959) pp. 6-9.

⁸ Whereas Max Weber speaks of the fact that to "a large degree the consumers' wants are 'awakened' and 'directed' by the entrepreneur", Veblen speaks of "the fabrication of customers" through the production of systematized illusions by experts and experimenters in applied psychology (and creative psychiatry, who play on various infirmities such as human credulity in general and the fear of losing prestige and the anxiety engendered by mortal disease in particular. T. Veblen, *Absentee Ownership and Business Enterprise in Recent Times — the Case of America*, (New York, The Viking Press, 1923) pp. 307-310. The reference to Max Weber is to *The Theory of Social and Economic Organization* (T. Parson, ed.), (New York, Oxford University Press, 1947) p. 193.

⁹ *Ibid.* p. 203.

is "capital accounting" (Kapitalrechnung) which establishes the numerical profitability of an investment. Substantive rationality on the other hand measures the extent in which a given group of persons is or could be adequately provided with goods by means of an economically oriented course of social action¹⁰. The identification of social benefits and social costs is not so much a problem of formal calculation as it is a matter of ascertaining actual human and social requirements or actual damages and harmful effects. When we try to determine the social benefits or social costs we are not concerned with a numerical profitability or a marginal importance attributed by an individual or a group of individuals to particular utilities or disutilities. Instead, we are aiming at an identification of substantive social needs and actual social damages and inefficiencies. Such identification calls for careful empirical research.

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What has been described as the starving of the public sector in modern affluent societies is not removed from objective analysis and the scientific test. For example, the recognition of the need for additional educational and housing facilities is not simply a matter of changing ultimate values based upon ambiguous ethical postulates. Such recognition is rather the outcome of a better understanding of growth correlations and the tendency toward social imbalance promoted by the traditional reliance on formal calculations in the allocation of resources. Similarly, the progressive congestion of traffic arteries to and within our expanding metropolitan areas as well as the heavy expenses incurred for urban renewal and redevelopment are the outcome of a regional polarization which is characteristic of urban growth in the absence of zoning and regional planning.

Under such conditions, industrialization, migration and natural increases of population combine to bring about the irrational overconcentration of the modern city¹¹. That is to say the progressive deterioration of transportation systems, the continued shortages of adequate housing, education and hospital facilities even in the richest country of the world is the outcome of a refusal or an inability to draw up in time an inventory of substantive needs and foreseeable trends and to project these trends into the future with a view to determining the respective requirements as a basis of public planning and investment decisions. There is nothing mysterious about these growth correlations. They are

¹⁰ Ibid. p. 185. The important distinction between "formal" and "substantive" has been further developed by E. Egnér, *Der Haushalt, Eine Darstellung seiner Volkswirtschaftlichen Gestalt*, (Berlin, Duncker und Humblot, 1952) and K. Polanyi, *The Economy as Instituted Process*, in K. Polanyi et. al. (eds.) *Trade and Market in the Early Empires* (The Free Press, Glencoe, Ill., 1957) pp. 243—270.

¹¹ Lewis Mumford, *The City in History* (New York, Harcourt, Brace and World, 1961).

the outcome of technical and economic interdependencies (complementarities) between an expanding population, the corresponding needs for housing, education, medical care and transportation. What is required is a projection into the future of the role which private automobiles, railroads, buses, and trucks are going to play in meeting expanding transportation needs. Furthermore what is called for is a concentration of the authority to make decisions in the hands of a single agency rather than a number of departments and authorities each operating under different rules and controls¹².

Growth correlations and technical interdependencies are also useful for the determination of social benefits and social requirements. The following illustrations may give a concrete idea of what we have in mind.

Underdeveloped economies are marked by regional imbalance and the lack of adequate overhead capital. Among the means to overcome this type of imbalance are regional development schemes which may serve a variety of purposes such as the production of electric power, the storage and discharge of water in accordance with requirements of flood control, the development of inland water transportation- in short the promotion and attainment of the transformation of the economy of the region. That is to say a multipurpose water utilization scheme produces joint products at joint costs. The economic success or failure of such a scheme depends upon the coordination of the various parts, which is to a large extent a technical problem. The ramifications of these technical interdependencies are so wide that it is possible to present here only a limited picture. The determination of the site for a dam and reservoir for example is a matter of physical comparisons in terms of technical criteria requiring detailed surveys of the catchment areas (as to its annual run-off, the availability of fertile land and its suitability for farming in terms of its drainage conditions, and the number of people affected by the inundation behind the dam). The construction of the dam usually calls for the erection of new facilities for workers connected with the project. The production of electricity calls for provision of a grid system to distribute power over a considerable area. The storage of water for irrigation purposes makes no sense without the construction of distributaries, canals and irrigation ditches (and, in some instances pumping stations) through which the water can reach the fields. More than this these distributaries must be constructed and maintained in such a fashion as to minimize seepage. Provision must be made for malaria control as the increased supply of water may easily increase the incidence of the disease. Moreover irrigation farming calls for greater use of fertilizers in order to be physically effective and economically efficient. In order to prevent premature sedimentation of the reservoir proper erosion control schemes (e.g. anti erosion benches throughout the catchment area) will be needed. If the water is made available free of charge, it may be wasted by the cultivator, with disastrous consequences in terms of water logging and the seepage of soil destructive salts to the surface and the promotion of water-

¹² This is the case for example in New York City where eleven agencies are concerned with transportation responsibilities. See letter by Dr. Lyle Fitch, Former City Administrator, April 16, 1961, *The New York Times*, April 17, 1961.

carried diseases. If on the other hand water rates are too high, they may act as a disincentive for a farm population used to "gamble in rain". The result would be unused capacity of an expensive capital good just as delays or lack of coordination of the various technical phases of the water utilization scheme would imply underutilization of the stored water. These technical and economic interdependencies call for a physical coordination which in turn determines the objectives of social action. If these interdependencies are permitted to serve as a guide to action utilization of capacity will be guaranteed, which in this case means not only high benefits at low costs but a speedier readjustment and transformation process for the entire regional economy¹³. In short, a regional development scheme is a physical and economic unit and must be treated by social science as a unit of investigation and planning; it calls for consideration of all physical and economic aspects simultaneously. If it is so treated and planned it is bound to attain its overall level of efficiency (substantively speaking) in the shortest possible time. The principle of substantive rationality calls therefore for a solution of the socio-technical coordination problem since otherwise valuable capital investments would stand idle and could not make the contribution to the development process which they are capable of making.

Another basis for the determination of substantive needs is the elaboration of social minima. Admittedly opinions may differ when it comes to the establishment of such social minima. And yet in practice the area of agreement may be much greater than we usually assume. Here again empirical research can provide us with the necessary data for the identification of and a basis for the evaluation of substantive needs and benefits. Once more an example from the underdeveloped world may serve to illustrate our point. In India about 2 million people die every year of cholera, typhoid, dysentery and other water-carried diseases and one seventh of the country's total population suffers ailments caused by an unprotected water supply. Public health experts estimate that 75 % of the diseases would disappear if a protected water supply and sanitary facilities were provided¹⁴. While the mere identification of the situation does not eliminate the need to choose — for similar deficiencies may exist in other fields such as education, hospital care and other parts of the public sector — it cannot be denied that the exploration of social needs objectifies them.

Similarly the identification of social costs is not a matter of subjective-ideological commitment to this or that program of social reform but a matter of empirical research. In fact, whether a particular loss or damage is a social cost depends at any given time on the state of our knowledge. As long as the causal relationship between specific productive activities and specific disutilities is not understood we do not know

¹³ For a discussion of cases in which the neglect of the technical and economic coordination problem has led to serious underutilization of the reservoir see René Dumont, *Types of Rural Economy — Studies in World Agriculture* (New York, Praeger, 1957) p. 199.

¹⁴ See *The Economic Weekly*, (Bombay) May 21, 1960 p. 758.

whether or not we are confronted with a case of actual social costs. For instance there may be diseases whose occupational origin has not yet been recognized by our present medical knowledge. Only further advances in medical research will enable us to establish these causal links¹⁵. This possibility is not confined to the impairment of the human factor but applies also to other categories of social costs. We may speak of hidden or concealed social costs which are recognized as scientific research identifies the relationship between a particular negative effect and specific productive processes or their products¹⁶. Indeed an advancing industrial technology is bound to expose its labor force to new materials, new processes and new products and thus is likely to widen the range of actual social costs. In short the identification of social costs and social benefits derives its objectivity from an orientation toward a substantive rationality which reflects the extent to which a given group of persons is or could be adequately provided with goods and services, or protected against unnecessary losses.

In contrast to Max Weber we suggest that the substantive definition of social costs and social benefits is possible in terms of objective requirements which do not depend upon an infinite number of possible subjective standards (or an "infinite plurality of possible points of view")¹⁷ but can be determined with a considerable degree of scientific method and objectivity. That is to say, the identification of social costs and social benefits calls for scientifically determined social minima and an awareness of economic and technical growth correlations which link private wants and public needs on the one hand and which trace the physical interdependencies between private productive activities and external diseconomies on the other. No doubt such a substantive orientation to economic life and economic action commits the economist

¹⁵ A case in point is the increasing suspicion that respiratory diseases including cancer of the lungs may be causally related not only to smoking but also to exposure to a polluted atmosphere — a suspicion which 10 years ago still seemed to be so questionable that I refrained from mentioning it in my analysis of the social losses of air pollution. Another illustration is provided by industrial noise. Current researches in the United States have shown that short-term exposure to industrial noise of high intensity can produce a hearing loss that may be transitory in nature but if the exposure is sufficiently prolonged and severe, some of the loss becomes permanent. In other words a temporary short-term exposure repeated over a certain time may make a specific noise situation into a long-term hazard. See studies reported by H. J. Magnusson, Chief, U.S. Public Health Service, *Scope Weekly*, Sept. 2, 1959, p. 3.

¹⁶ The widespread and increasing use of toxic chemicals and pesticides (such as insecticides) in modern agriculture and the various preservatives, anti-oxidants, mold inhibitors, coatings, color additives and bleaches, substitutes, etc. in the food processing industries and various drugs have long been suspected of causing human diseases although these relationships are not yet fully understood.

¹⁷ M. Weber, *The Theory of Social and Economic Organization*, op. cit., p. 185.

to a new and broader perspective of the relationships between the economic and the noneconomic. What seems to be a perfectly reasonable distinction from the perspective of a purely formal orientation turns out to be misleading and untenable as soon as we deal with concrete situations in a substantive way. When we inquire into the actual state of want satisfaction all levels of social existence must be viewed as intrinsically and reciprocally interrelated. The political, the socio-cultural and the economic represent a unitary whole. Changes in one level affect all other levels of this interrelated structure. Indeed the conceptual distinction between the economic and non-economic turns out to be a fictitious separation which may be useful for some scientific purposes but which is likely to serve some non-scientific purposes if the fictitious character is forgotten and becomes the basis for the normative conclusion that only private wants are "truly" economic, that social needs and requirements are meta-economic, and that the latter are beyond the scope of science.

Moreover, the substantive definition of economic action questions the validity of the tacit identification of an "indefinite plurality of possible points of view" or "an infinite number of standards of value" (Max Weber) with a notion of a plurality of ends. In formal economics it may be legitimate to assume a plurality of competing ends although even then it would seem to be problematical to identify the plurality of ends with the notion of "alternative uses"¹⁵. In practice, however, and for all purposes of substantive analysis the plurality of ends frequently disappear but the number of alternative ends are considerably reduced. needs and social costs. To be sure, the necessity of choice does not disappear but then number of alternative ends are considerably reduced. What is more, once we subject social needs to a deliberate analysis in the light of the concrete historical situation including the available means, we increase the chances of harmonizing conflicts and establishing priorities by the constructive use of intelligence. This constructive use of intelligence differs radically from the purely "manipulative" use of reason which guides the procedures of business accounting and is the prototype of formal rationality. In fact, the "formal" comparison of numerical expenses and receipts in accordance with the canons of accountancy has only one aim: the maximization of net pecuniary gain. In contrast, the constructive use of intelligence is concerned with the realization of genuine opportunities and the exploration of new possibilities¹⁶. This requires the projection of repercussions of action or

¹⁵ R. W. Souter, *The Nature and Significance of Economic Science in Recent Discussions*, *Quarterly Journal of Economics*, XLVII (May 1933), p. 380.

¹⁶ John Dewey, *Human Nature And Conduct*, (New York, The Modern Library, 1930), p. 234.

non-action under different circumstances. What will be the effects if we permit the social process to drift? What are the over-all repercussions if social minima of public health were not enforced? What social losses are likely to arise? What are the consequences of maintaining or not maintaining certain growth correlations between different sectors of the economy? We have tried to answer some of these questions in our analysis of social costs²⁰. Here we can indicate only briefly the possibility of defining minimum standards in various fields. Thus, in the field of air and water pollution it is possible to work out minimum standards of public health in the form of maximum permissible levels of concentration of pollutants. Social costs and social objectives can be defined in terms of existing deficiencies by comparing the actual state of pollution with maximum permissible concentration of pollutants. Similarly, it is possible to work out safe social minima or maximum rates of depletion of renewable resources (e.g., wildlife and fisheries as well as water and soil) by the definition of a *critical zone*²¹ beyond which any increase of depletion would give rise to an irreversible process of destruction of the resource. Minimum standards of requirements can be defined also in such fields as public health, medical care, education, housing, civilian defense, transportation and recreation. Even the problem of unemployment including technological unemployment can be approached in terms of a minimum rate of growth required to absorb an increasing labor supply and the number of workers permanently displaced by machinery and automation.

With the elaboration of social minima it becomes possible, at least in principle, to demonstrate objectively the presence of social costs and social benefits. By projecting the consequences of private decisions and public action (or nonaction) in a given field the analysis of social costs and social benefits prepare the ground for the elaboration of social objectives, social priorities and social choices. We shall discuss below some of the problems which we have to face in determining social priorities. It is true, the determination of social minima may not eliminate altogether the subjective ideological elements inherent in the attempt to quantify social costs and social benefits. However, such standards objectify these extra-market phenomena. As a result it is easier to reach compromises or even a consensus of opinion. For example, we no longer question the validity of our minimum standards of public health and no serious person will deny their objectivity.

²⁰ K. William Kapp, *The Social Costs of Business Enterprise*, (Bombay, The Asia Publishing House, 1962).

²¹ S. V. Ciriacy-Wantrup, *Resource Conservation Economics and Policies*, (Berkeley, University of California Press, 1952) pp. 39., 256—9.

Quantification and Evaluation

The question of the quantification of social costs and social benefits is sometime raised in the implicit belief that if a concept resists quantification and measurement in monetary terms it is necessarily vague, ambiguous and outside the scope of economic science. To demonstrate that such quantification is difficult or impossible is then considered to be equivalent to having said practically the last word on the subject-matter: namely to have ruled it out of existence as far as scientific inquiry is concerned. In economics this attitude is reinforced by an implicit identification of economic calculation with business calculation and of quantification with measurement in monetary terms.

No one will deny that quantification and measurement make for precision. Conclusions formulated in terms of quantitative concepts can be tested more easily than qualitative statements. Economics has adapted itself to the ideal of measurement and quantification. Everything connected with the conduct of business transactions, such as the production of goods and services, time, consumption and even good will, tends to be expressed in numerical terms and has been subjected to quantification in terms of money and prices. Indeed, money provides a common standard in terms of which all the typical operations of measurement can be carried out and repeated: addition, subtraction, multiplication. The application of statistics has lent further support to the belief that economics has been more successful than other social disciplines in the use of the quantitative method. Furthermore, many of our concepts seem to have assumed a quantitative connotation which supports the impression that the problem of quantification and measurement has found a solution in economics.

However, this widely accepted view tends to exaggerate the extent and actual success of quantification and measurement in economic analysis. Our concepts may be quantitative in form but the substantive measurability of the quantities under discussion is in no way established. We may speak of marginal productivity and opportunity costs but we tend to forget that these seemingly quantitative and precise terms refer to fictitious concepts. Indeed, how is one to calculate marginal costs under conditions of joint costs and multiple product production when overhead costs are large and fixed capital highly specialized and non-salable? And how can elasticity and marginal returns in concrete market conditions with varying degrees of oligopoly and countervailing power be quantified and measured? It is one thing to use a quantitative term with reference to a theoretical category which has no counterpart in reality; it is altogether different to quantify and measure an actual social phenomenon. Any substantive quantification and measurement in a concrete situation encounters the greatest practical

difficulties. Thus, what are believed to be clear-cut quantitative definitions and tools of analysis turn out, upon closer examination, to be pseudo-quantitative in content. Hence, actual quantification and measurement are not quite as successful in economic analysis as is commonly believed.

Before turning to the basic issues raised by attempts to quantify social costs it is important to stress that there are several ways to express at least some of the social costs of business enterprise in quantitative and even monetary terms. Thus, the loss of wages and output due to occupational diseases and industrial accidents and the costs of medical and hospital care due to partial and permanent disablement can be calculated and compared with actual compensation payments available under Workmen's Compensation or Social Security Acts. Evidence of soil erosion and soil depletion can be measured in terms of reduced soil fertility and the commercial value of crops not produced. The commercial losses caused by soil erosion and floods can be ascertained with a reasonable degree of precision. We can even calculate the capital value of resources lost once we agree on the rate at which to discount a stream of income derived in the past which would have been available in the future had the competitive exploitation of given resources not led to their premature depletion: It is possible to indicate the extent of (technically) unnecessary wells in the competitive exploitation of an oil field and similar duplication in capital in mining and transportation; we can estimate the resulting higher costs of recovery and loss of unrecoverable underground resources; we can ascertain the social costs involved in the high bankruptcy rate of small retail trade and we can calculate the costs of sales promotion as a percentage of national income²². An attempt has even been made to calculate the social costs of migration due to technological change²³.

Another indirect approach to measure social costs, at least partially, would be to estimate the outlays required in order to remedy the damages caused by various private productive activities. For example, it is quite possible to arrive at quantitative estimates of the extra costs of cleaning buildings exposed to polluted air. Another method of quantifying social costs would be to calculate the costs of preventing their occurrence. For example the costs involved in the installation of proper filters or waste treatment equipment might be used to measure at least

²² This is not to say that much reliable quantitative information is available on these elements of social costs or that any systematic effort has ever been made to collect statistical data concerning them. There is no time series indicating the extent and evolution of social costs.

²³ J. G. Maddox, *The Private and Social Costs of the Movement of People out of Agriculture*, *American Economic Review*, 1960 vol. L, (May, 1960) p. 392-402.

some of the social costs of air and water pollution. This is a highly significant measure in so far as it would indicate the extent of the additional outlays which business enterprise would have to incur in order to eliminate the social costs.

Just as social costs can be quantified in terms of the additional private costs involved in their prevention, so the social benefits of "public institutions and public works" can be given a quantitative expression (and even monetary expression) in terms of the public outlays required for their production. Such a quantification presupposes an estimation of the possible range of social and individual consequences if no steps were taken to secure these benefits. For instance, what individual and social losses are likely to arise as a result of inadequate facilities for education, transportation, research, public health or, for that matter, of the failure to insist on the installation of adequate water and smoke pollution abatement equipment. If it can be shown, for example, that an investment of \$ 100,000 required for the installation of smoke filtration and pollution abatement equipment would have the effect of eliminating social losses to the extent of \$ 200,000 we will have quantified social costs as well as social benefits.

The foregoing discussion points to genuine possibilities of quantifying social costs and social benefits if a serious intellectual effort were made to this end. However, it must be admitted that some real difficulties stand in the way of the quantification and measurement of social costs and benefits in monetary terms. First, there is the problem of joint causation. Air and water pollution are caused not only by private industries. Private consumers and public utilities are important contributing factors. Unemployment due to technological processes cannot be easily separated quantitatively from the unemployment caused by other factors. In the last analysis the general interdependence of all elements of the economy represents a serious obstacle to the precise measurement of the social costs of business enterprise.

A second and even more serious difficulty becomes evident if we consider the social costs resulting from the competitive exploitation and depletion of renewable and non-renewable resources. For clearly the magnitude of these social losses depends upon the value which these resources will have in the future. The discounted future value of these resources may be said to provide some measure of the present magnitude of the losses represented by their depletion. However neither the discount rate nor their future value nor indeed the number of generations to be considered are objectively given. The future value cannot be ascertained since it depends largely upon the importance which the present generation attributes to the interests and values of its descendants. However, the fact that the social costs of depletion

cannot be determined with a desirable degree of precision must not be taken to prove that no social costs arise from the depletion of resources. It would be hazardous to assume that the future will take care of itself and that technical progress and research will automatically provide us with alternative resources of energy as we deplete our present ones. On the other hand, it is problematical to subordinate the interest of the present generation to those of future generations, particularly if we consider that the future may depend upon a new and different technology and resource pattern. Somewhere between complete disregard, and complete subordination of the present to the future lies the answer to a rational resource policy.

Finally we have to consider the heterogeneity of social benefits such as education, public health and defense which are essentially incommensurable except in as far as they require scarce resources for their gratification. Interesting as it might be to supplement our national output and income accounting system of national bookkeeping in terms of social benefits and social costs, the establishment of such a system of accounting would raise certainly more questions than can be answered here. What is needed is the promotion of empirical research designed to establish more precise measurements of the various categories of social losses and social benefits in monetary as well as in terms of general social estimates of their importance with a view to formulating the protective legislation that may be called for.

However, in the light of our distinction between formal and substantive rationality it would be unwarranted to confine the quantification of social costs and social benefits only to measurements in monetary terms or market values. As a matter of fact as long as we look upon business accounting as the model of social evaluation and use the latter as a general yardstick of all quantification and measurement we effectively block any intellectual and practical progress in this field. As we have pointed out, business calculations deal with quantities such as receipts and expenses and net gain in monetary terms. Formal economic analysis which views all transactions in this light merely follows the pattern of business calculations. There is nothing wrong with this procedure as long as it is clearly understood that business decisions aim at a fixed objective which requires no further deliberation. Maximization of net profits (a numerical quantity) represents a single objective which neither admits nor requires any further reflection or thought as to the kind and quality of purpose involved. However, as we have shown, such profit and loss calculations differ radically from the constructive use of intelligence and deliberation²⁴ about actual ends or actual

²⁴ The distinction follows closely Dewey's distinction between deliberation and calculation. See *Human Nature and Conduct*, op. cit. pp. 199-222.

damages and harmful effects. In the case of social benefits and social costs we are confronted with qualitatively different and heterogeneous benefits (or ends) and diseconomies which, even if they could be expressed fully in terms of market prices, would still call for deliberation before it would be possible to arrive at a valuation. Even if possible, a simple business calculation would not be enough. The question is not how "profitable" it would be to prevent the pollution of the natural environment but what importance we attach to having clean air and clean water. In evaluating any of these objectives it is a prerequisite to know the consequences of polluted air and water on public health and other values. While it is doubtless helpful to inquire into the costs of pollution abatement, no refinement of our tools can finally help us to quantify the "value" of heterogeneous qualities in monetary terms.

Thus we reach once more the limits of our traditional approach to the appraisal of economic magnitudes in terms of market prices. Indeed the problem of quantification of social costs and social benefits cannot find a completely satisfactory solution on the basis of exchange values. As extra-market phenomena their magnitude cannot be adequately expressed in numerical terms which serve the purely formal and much more simple business calculation. Nor is this surprising. For there is no reason to assume that it is tenable to transfer criteria of formal rationality to the sphere of social costs and social benefits, which can be properly evaluated only in terms of criteria of substantive rationality and dynamic analysis. The question of the adequacy and transferability of concepts raises issues which lie outside the domain of the present paper. And yet they cannot be entirely avoided. Suffice it to indicate here with dogmatic brevity what we regard as the essential implications of our general position.

We have made it clear that any concern with social costs and social benefits calls for a substantive approach to economic analysis. The evaluation of social costs and social benefits presupposes an emancipation from calculations in terms of formal market prices and a consideration of actual human wants and the ways and means by which resources can be mobilized for the enhancement of public welfare. This presupposes a deliberate concern for "the ultimate aims of man" as Alfred Marshall²⁵ put it. Substantive economics cannot refrain from taking account of individual wants and social requirements. That is to say we cannot avoid making distinctions between "essential" and "non-essential" needs²⁶. Such a distinction can be based upon objectivized

²⁵ Alfred Marshall, *Principles of Economics* (London, MacMillan and Co., 1933) (8th ed.) p. 17.

²⁶ See, for instance, Veblen's distinction between "productive consumption" and "conspicuous waste" and "superfluities", and Vershofen's equally dualistic classification of wants into those which serve the maintenance of human life

social minima which could serve as a starting point for the identification of major social deficiencies. We must identify those sectors of the economy most likely to lag behind in economic and social development. This would enable us to determine social priorities in the light of available means and to decide upon the increase of resources in the light of established needs. To repeat, the criteria of social evaluation are not supported by the formal rationality principle (e.g. maximization of expected net monetary revenues) but are based upon the principle to maintain adequate levels of satisfaction of essential human wants at the lowest possible costs within the limits of available resources²⁷.

This is not a problem of defining a formal general optimum but a pragmatic task of improving the actual state of individual and social welfare. Indeed, what matters most in this context is the determination of the general direction in which to move and less the attainment and calculation of equimarginal utilities from the last additional dollar spent in all lines of endeavor. In practice the determination of social priorities and hence the quantification problem is considerably simpler than would appear in the light of the refinements of traditional formal value and price theory. While there are always a number of ends to consider (except perhaps in times of emergency) they are not as numerous as is sometimes believed. Indeed, if there were a multitude of ends, if we permitted them to become unlimited in number and scope we could not act at all. We must select and deliberate about our ends and in this deliberation we must be concerned less with the calculation of indeterminate and indeterminable future results, which escape our foresight and are always contingent on new developments, than with present deficiencies and short-term projections in the light of available means. The concrete situation, if properly surveyed and analyzed in the light of available means, limits the possible number of goals and narrows our choices²⁸.

and those which serve the desire for prestige and status (Geltung) in society. See T. Veblen, *The Engineers and the Price System* (New York, B. W. Huebsch, 1921) pp. 108-110, and *Vershofen*, *Wirtschaft als Schicksal und Aufgabe*, (Leipzig, Kochler und Amelang, 1930) p. 265.

²⁷ We thus support Gottl's insistence that the (substantive) notion of economy must include ipso facto the exploration and determination of actual needs and is concerned with the equalization and adjustment of needs to the "situation" and the "situation" to the needs. F. von Gottl, *Wirtschaft und Technik, Grundriss der Sozialökonomik*, vol. II, (Tübingen, J. C. B. Mohr, 1924) p. 11.

²⁸ While it would be "wilful folly", as Dewey put it (*Human Nature and Conduct*, op. cit. p. 229) to fasten upon some single all-important end without regard to the consequences which such a neglect of other ends carries with it, it is nevertheless true that social goals must be set and deliberately selected and, as such, inevitably imply a subordination and perhaps neglect of other ends. This need not be a violation of the principle of substantive rationality provided we are proceeding in accordance with a social scale of essential and less essential needs.

In fact, objective and scientifically arrived at minimum standards tend to assume, for instance in the field of public health, the character of a norm of almost overruling importance in view of the fact that any violation of such standards endangers human health and survival. If this is granted maintenance of social minima once agreed upon becomes literally a technical question which, unlike an economic question, leaves little or no doubt as to the choice of the most appropriate means in accordance with the principle of achieving the result with the least expenditure of resources²⁹. That is to say the maintenance of a safe social minimum, once defined and socially agreed upon, would call only for the traditional cost-consciousness and awareness of technical efficiency of the engineer. Needless to add that we are not suggesting that the establishment of social minima in some fields transforms all economic problems into technical questions. What we do suggest as undeniable is the fact that as we extend the applicability of social minima we "rationalize" and "objectify" the determination of social costs and social benefits and remove their evaluation increasingly from the realm of subjective or ideological self deceptions and distortions.

This brings us finally to the problem of the social evaluation of social benefits and social costs which has remained the least explored problem of social theory despite the fact that the issues have been raised from time and time. What has kept the discussion in a state of suspense is the subjectivist-utilitarian bias of our value theory and the Benthamite tendency to consider society (or the nation) as a theoretical fiction. Let us emphasize therefore, from the very outset, that far from being in conflict with individual wants, social needs and social benefits actually are the consequences of private decisions. The exploration of these interrelationships between private and social needs is the legitimate objective of government and the prerequisite of a civilized and democratic society. "A government that wants to meet the hopes and wishes of the citizen must take upon itself the consequences of the citizen's own planning"³⁰. The requirements of civilized life and the principle of substantive rationality demand that the tendency toward social imbalance of the price system be counteracted by the continuous objective determination of social need and potential social benefits. Such determination must not be guided by market prices—not even competitive market prices—because the market reflects only effective demand and, moreover, is directly responsible for the emergence of social imbalance and social costs. That is market demand reflects fully the inequalities of income, the time preference of the individual and, particularly in

²⁹ M. Weber, *op. cit.* 161 and F. von Gottl, *op. cit.*

³⁰ Statement by Prime Minister Erlander of Sweden in Washington, *The New York Times*, April 4, 1961.

affluent societies, the effects of sales promotion. The determination of social needs and social benefits must reflect the substantive i.e. recognizable needs and desires of the average low-income consumer. In short, social evaluation must be more democratic (substantively speaking) than the evaluation which emerges in the interaction of supply and effective demand. If this consideration is relevant for advanced countries it is even more so for the underdeveloped world which has long suffered from a neglect of social overhead investments and even greater inequalities in incomes. In short, the theory of social value must be based upon a democratic theory of consumption²¹. There is no reason why, at least in principle, decisions as to social priorities could not be arrived at by a majority vote. The removal of India's deficiencies in sanitation, drinking water, or electricity just as the elimination of air pollution in the United States can be made the subject of a referendum.

We do not deny that the social evaluation of the relative importance of social benefits and social costs will always carry elements of a political decision as to social purposes and goals. In this connection it cannot be emphasised too strongly that the determination of social benefits and social costs does not take place in a vacuum but will always be in part derived from the concrete conditions and necessities of the socio-economic and political situation. Admittedly this relationship does not give rise to an unequivocal and self-evident determination of social goals and social values; but it limits the influence of arbitrary ideological factors and facilitates the formulation of aims and priorities which are accessible to scientific interpretation and the pragmatic test²².

²¹ "What kind of consumption should be planned? Should it take the consumption of the more highly developed countries as a model? Should it be guided by whatever market demand exists...? Or should production be tailored above all to serving as cheaply as possible the recognizable needs and desires of the average low-income consumers? If these questions are not faced deliberately they may be answered without thought. In particular there is danger that the consumption patterns of the more developed countries will be followed as a matter of course. The theory of consumption must, I think, be more democratic than this... Cheap bicycles are more important than cheap automobiles". J. K. Galbraith address at Bombay University, July 31, 1961. Quoted from Official text, United States Information Service, New Delhi, p. 10.

²² Max Weber did not deny that such aims and even political aims could be derived from a disciplined interpretation of the objective conditions of the historical situation. Certainly his great courage to stand alone and to say what was often unpleasant for many and his insistent advocacy of clearly political aims and causes (cf. his concept of the lasting interest of the nation, his critical views on bureaucracy and socialism, his belief in the need for the entrepreneurial type despite his conviction of the nefarious political influence of the "gentlemen from heavy industry") can only reflect a basic conviction that it was possible to derive ends from a dispassionate analytical observation and comparison of events and social conditions („die Dinge aus sich selbst zu verstehen") and brings him almost close to John Dewey's position that ends are of the nature of hypotheses which can be established and worked out in the

There remains the important question of how the necessary consistency and interdependence of the various parts of the economic process can be established in harmony with social values and social development goals particularly under dynamic conditions. With this question we cannot avoid reopening a discussion which has long been considered as closed and has all but disappeared from economic analysis: the problem of calculation in real terms. All experiences made during the last decades in connection with economic planning seem to support the conclusion of those who have argued that planning and the translation of social goals into an internally consistent development process call for a calculation in real terms rather than in terms of prices.

This is relevant for our discussion. For social costs and social benefits are to a large extent extra-market phenomena. Hence the price system cannot be relied upon to provide the criteria for their social evaluation. Social costs as well as social benefits are heterogeneous in character, they cannot be evaluated in terms of a single denominator. As far as social benefits are concerned the criteria available are social minima based upon a substantive and democratic evaluation of social needs and requirements and their comparison in real (physical) terms with available resources. What makes it possible and necessary to reopen this problem afresh are recent advances in our techniques and our knowledge concerning the quantitative input-output relationship between different industries. These studies have opened up new possibilities to express in quantitative terms the real costs of different social goals. Input-output balances provide the basis for a rational approach to the important task of coordinating output targets and input requirements throughout the economy. They yield the necessary data for the calculation of interdependencies and growth correlations between different sectors of the economy. Finally, knowledge of the physical interindustry relationships answers the important questions related to planning the capacity of supplementary investments called for by any large scale multipurpose project.

By informing us about the real costs in terms of resources of labor required for the achievement of particular goals or benefits input-

light of the concrete conditions available for their realization. See Dewey, op. cit. p. 234 and Logic, The Theory of Inquiry (New York, Holt, Rinehart and Winston, 1938, pp. 180, 497. On the whole problem see F. H. Blum, op. cit. and The Meaning of Max Weber's Postulate of Freedom from Value Judgments, American Journal of Sociology, Vol. L, No. 1. (July 1944) pp. 44-52. See also G. Weippert, Zur Problematik der Zielbestimmung in wirtschaftspolitischen Konzeptionen, in H. J. Seraphim, (ed.) Zur Grundlegung wirtschaftspolitischer Konzeptionen, Schriften des Vereins für Sozialpolitik, Neue Folge, Band 18, (Berlin, Duncker and Humblot 1960) pp. 135-8. See however, H. Giersch, Das Problem der Objektivität des wirtschaftlichen Urteils und der Lösungsversuch der neueren Lehre vom wirtschaftlichen Wohlstand, Zeitschrift für die gesamte Staatswissenschaft, Bd. 107, 1951, pp. 247 ff.

output studies would contribute to the quantification (in real terms) of social benefits. The problem of social choice and the determination of social preferences thereby becomes casier than is usually assumed. There is no reason why such choices and priorities cannot find expression in schedules of (controlled) relative prices expressed in monetary terms for accounting purposes. However, even if this is done the criteria of substantive rationality and economic optimum will always have to be expressed in terms which permit the measurement of the attainment of higher levels of productivity or decreasing real costs. In practice this can only mean that conditions of economy-wide balances between total supply and social demand are maintained through the speedy removal of deficiencies, bottlenecks and excess capacities. Indeed what often counts most in practical affairs is the making of decisions with a minimum of delay. This time dimension of decision making is of the greatest importance in judging the substantive rationality of economic planning. For due to the interdependence of the economic process delays in decision making often have more far-reaching effects than bad decisions made on time³⁰. Admittedly we face here the question of how far measurements of dynamic technical efficiency can serve as an index of substantive socio-economic efficiency. To deal with this question would take us beyond the scope of the present paper.

As we have indicated above, calculations in real terms as indeed any substantive approach to economics has its own problems and sources of inefficiencies³¹. No one will deny that political factors and ethical value judgments are bound to influence the decisions to minimize social costs and to realize social benefits through social investments and public

³⁰ "A bad decision made on time will not usually be as costly as a good decision made too late. The bad decision can often be reversed at low costs. The time lost waiting for the good decision can never be retrieved." J.K. Galbraith, *Public Administration and the Public Corporation, Address, Indian Institute of Public Administration, August 25, 1961. Official Text, United States Information Service, New Delhi, p. 6.*

³¹ Max Weber traced these problems to the fact that the standards of substantive rationality may not command the necessary minimum of consensus in society; that the "administrators" may be swayed by their own personal sentiments which might differ from those of some social groups; that political pressures of important social groups might force them to adopt standards favorable to them, and, above all, that changes in technology and preferences would necessitate new calculations and a reallocation of the "input-mix". Nevertheless, while Max Weber felt that Otto Neurath's plea for calculations in kind was open to criticism, he considered his suggestion as "penetrating" and "stimulating" and did not deny that "calculation in kind" could become a rational technique. In fact he expressly stated that as long as the maintenance of social minima objectively defined without discrimination of some segments of the population is the standard of calculation the substantive approach may actually satisfy the criteria of the formal optimum. Max Weber, *The Theory of Social and Economic Organization* op. cit. pp. 202-212.

works. The economy is never completely free of such political and ethical influences. And it is true that conflicts of interests and elements of coercion will intrude into the political process and hence influence the evaluation of social benefit (and social costs) and the determination of social priorities. However, the fact that for many decades silicosis was not recognized as a social cost or that the same social costs may be treated differently in different societies may indicate differences in the distribution of political power but it does not refute the objective character of social costs. Similarly, the fact that many underdeveloped countries do not provide an adequate system of education or sanitation cannot affect the objective character of the social benefits obtainable from "investments" in the human factor. Nor can the realization that different people may place a different (subjective) value on the benefits of education and health deny the objective character of the advantages which a literate and healthy population enjoys over an illiterate and disease-ridden one.

Social Costs and Social Benefits — Their Implications for Public Policy and Economic Development

The foregoing analysis has left no doubt that the principles of formal rationality cannot define an optimum of social efficiency. On the contrary, by systematically neglecting the extra-market phenomena of social costs and social benefits, formal rationality is basically in conflict with and opposed to substantive rationality. While the former may be useful as a scientific fiction for the explication of the behavior of the entrepreneurial unit engaged in business accounting — although even this usefulness has been questioned — it differs in content from substantive rationality and hence does not provide an adequate norm for the formulation of economic policies.

It is therefore pertinent to ask whether and how the presence of social costs and social benefits influences the formulation of practical policies in industrially advanced countries and what may be their significance for the underdeveloped world. We have already indicated that the recognition of social costs and social benefits is not simply a matter of empirical research but depends to some extent upon the distribution of power in society (both "original" and "countervailing" power in Galbraith's sense). The greater the spread of countervailing power the greater the likelihood that taxes and protective legislation will be used to translate social costs into private costs and that provisions will be made for public investments for the creation of social benefits. Whether and which social costs and social benefits will be taken into account depends therefore upon the political structure of society.

There can be no doubt that the existence of social costs and social benefits calls for interference with the competitive process. This interference which has the purpose of protecting society against socially destructive processes aims at translating the "variable" (or shifted) social costs into fixed "social overhead charge"³⁶ and by means of subsidies, public investments or public enterprises, encourages or enforces the production of social benefits. Such interference does not differ basically from the system of laws which regulates traffic or declares certain activities as unlawful if they are directed against the person or property rights of the individual. Whether these interferences with the competitive system have actually gone far enough or have gone beyond what was necessary is a question which cannot be answered in general terms but require detailed case studies.

In any event much of our contemporary labor and social legislation have the purpose of internalizing the social costs of production into entrepreneurial cost accounts. It has been suggested that not only the history of economic and social legislation but of economic development in general could be written as the history of the success or failure to internalize the social costs of production and of the struggle to limit and resolve the conflict between individual and social interests³⁷. That is to say economic history and economic policies have been shaped by precisely those aspects of economic life which economic theory in its preoccupation with formal rationality has either neglected or ignored altogether.

More significant, particularly in the context of the economics of growth, is the question of the relevance of social costs and social returns for the acceleration of the development process. It can hardly be denied that the process of economic growth is bound up with substantial social costs such as the large-scale disruption of traditional processes of production and of old ways of life. Indeed, many of the classical cases of social costs such as the expulsion of farm workers from the land, the impairment of the health of women, children and of adult laborers, the depletion and erosion of the soil, the pollution of air

³⁶ Borrowing and extending the meaning of J. M. Clark's concept of overhead costs Blum speaks of social overhead or constants costs with reference to all those elements of costs and benefits for which society has already chosen to assume responsibility and speaks of social variable costs with reference to those elements of costs and potential social benefits which society permits to be shifted or to go unrealized. See F. H. Blum, *Social and Economic Implications of the Fair Labor Standard Act*, Industrial Relations Research Association, Proceedings, Cleveland, Aug. 1956, pp. 167/183.

³⁷ K. P. Hensel, *Über die wirtschaftliche und wirtschaftspolitische Willensbildung und Willensverwirklichung in verschiedenen Ordnungen*, in H. J. Serraphim, (ed.), *Probleme der Willensbildung und der wirtschaftspolitischen Führung*, Schriften des Vereins für Socialpolitik, Neue Folge, Band 19, (Berlin: Duncker and Humblot, 1959) p. 21.

and water, the obsolescence of old skills, the easy shift of the social overhead costs of labor in periods of unemployment, the development of city slums arose first in the course of rapid economic advances in Western Europe during the Industrial Revolution. Indeed, it may be argued that the institutional arrangements which concealed the social costs of these early innovations and the absence of legislation which made it possible to shift these costs to third persons or to society-at-large were largely responsible for the dynamic character of economic change during the initial stages of the Industrial Revolution. Hence, any attempt by social legislation to force entrepreneurs to bear at least part of these social costs may have the effect of slowing down the process of economic development. In the light of this doctrine²⁷ it would appear that rapid economic development presupposes the systematic neglect of social costs; and current attempts in many underdeveloped countries to force their productive units to internalize some of the social costs of production will have the effect of slowing down the rate of economic growth. *Prima facie* this argument seems to be irrefutable. However, closer analysis particularly of the economic effects of social costs and social benefits on the process of economic development reveals its limitations. In the first place, while it is true, that the systematic neglect of social costs may make it possible to invest in projects which could not be undertaken if the social costs had to be internalized it is equally true that the social costs once shifted have important adverse and cumulative repercussions on economic and social welfare. Thus, if in their effort to minimize the cost of current production farmers in the underdeveloped world increase the rate of soil depletion and erosion at a more rapid rate in for instance Africa, Asia and South America; if expansion of industrial production in the growing cities of Asia is associated with the uncontrolled growth of slums and the widespread pollution of air and water²⁸; if the introduction of new industrial techniques is permitted to proceed without regard to the non-amortized value of older equipment in existing firms and the obsolescence of older skills; in short, if nothing is done to minimize these social costs of development, private costs are bound to rise before long if, indeed, the whole development process may not be brought to a halt by the exhaustion of the soil, the impairment of the human factor and the inevitable political polarization which such a policy of laissez-

²⁷ For a recent elaboration of this thesis see A. O. Hirschman, *The Strategy of Economic Development*, (New Haven, Yale University Press, 1958) pp. 58-59.

²⁸ The average monthly fall of soot in Calcutta is currently estimated at 25 tons per square mile, *Economic Weekly*, (Bombay), 1/2/60. Needless to add that practically all domestic and industrial wastes in the underdeveloped countries are discharged without prior treatment into waterways.

faire is bound to entail. In addition, and more specifically, it is an illusion to believe that social losses affect only future generations. Destructive farming practices and methods utilized in minimizing current costs of production in agriculture which deplete and erode the soil may raise the costs of next year's crops not only on those farms whose owners were responsible for the soil destruction, but on all farms in the region. Similarly, air and water pollution affect not only human health but raise the costs of production generally. The same point can be made in connection with all those practices which lead to exhaustion of other renewable and non-renewable resources. In short, social costs are really not "unpaid", if they are not avoided they have to be paid by somebody. And their cumulative effect may actually slow down the development process.

Finally, the thesis that protective legislation and the resulting internalization of social costs into private costs tends to retard the rate of economic growth also ignores the fact that the prevention of social costs may be considerably less costly for society than the damages caused by destructive productive practices or, for that matter, the attempt to repair the losses and damages once they have occurred. In other words the (marginal) real costs involved in the prevention of air pollution is likely to be lower than the (marginal) real costs of repairs and additional medical care called for by the effects of air pollution.

The case for a more comprehensive system of social accounting and a determination of social priorities in underdeveloped countries is even stronger if we consider the case of social benefits and external economies. One of the characteristics of underdeveloped countries is their traditional neglect of social overhead capital. Investments in the human factor and in a variety of public institutions have been wholly inadequate or non-existent and have left a heritage of serious deficiencies in education, in road and transportation systems, and in public health, etc. while available economic surpluses were used either for artistic or religious purposes, monumental constructions or for "leisure goods" in Veblen's sense of the word. The innovating entrepreneur in underdeveloped countries cannot hope to appropriate and internalize many of the external economies which are created by his investment decisions. In short, while profit and capital accounting may be formally correct it is substantively speaking incorrect because it cannot consider the very real social and external benefits of investment. The practical implications of this divergence of private and social benefits for the development process may be summarized briefly as follows: Just as the social costs of production are not registered by the market directed economy, the price mechanism fails to take account of social benefits and external economies. The neglect of these extra-market phenomena

disqualifies the market calculus as an effective guide for investment decision. An underdeveloped economy guided exclusively by the competitive calculus would destroy the fabric of society by the cumulative effects of a variety of social costs and the inevitable neglect of essential social overhead investments in such areas as education, sanitation, defence, administration, medical care, water supply and a host of similar public services. Actually no democratic society can and will tolerate this subordination of the social system to the dictates of formal rationality. The universal reaction of society to the neglect of social costs and social benefits has taken a variety of forms all of which have had the effect of compelling the private producers to internalize at least a portion of the social costs and to assume partial responsibility in the form of higher taxes for public investments.

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ECONOMIC DEVELOPMENT IN A NEW
PERSPECTIVE:
EXISTENTIAL MINIMA
AND SUBSTANTIVE RATIONALITY

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In his 1956 lectures delivered at Cairo MYRDAL challenged the economists of underdeveloped countries to free themselves from the traditional modes of economic theorizing predominant in the advanced countries. He appealed to the young economists in the underdeveloped world 'to have the courage to throw away large structures of meaningless, irrelevant and sometimes blatantly inadequate doctrines and theoretical approaches and to start their thinking afresh from a study of their own needs and problems¹.

However, the achievement of intellectual independence seems to be an equally painful process as the attainment of political independence and the long up-hill climb to the threshold of self-sustaining economic growth. Theoretical reconstruction presupposes a combination of competence and lack of conventionality which are difficult to come by for students of economics from underdeveloped countries, who earn their Ph. D.s at one of the graduate schools in a developed country. By the time he returns to his own country he has usually completely accepted the prevailing conventional wisdom which he proceeds to transmit to succeeding generations of students. Like most social processes the transmission of ideas and theories is subject to a kind of inertia or cumulative causation which tends to make the process of teaching and learning move in the same direction as the original impulse. The inevitable gap between theoretical structures and the world of experience may thus be widened until the stage is set for the intellectual discovery that traditional concepts and theories have lost their relevance. To some extent the current disenchantment with the rate of economic development in many countries is the result of the inadequacy of theoretical frameworks to diagnose the nature of the problem and to prescribe appropriate courses of action. Increasing international and internal

1. GUNNAR MYRDAL, *Economic Theory and Underdeveloped Regions*, London 1957, p.101.

(regional) disparities of economic development, serious shortfalls in the fulfilment of output targets, the 'population explosion', mounting unemployment, persistent rural and urban poverty, increasing inequalities and concentration of wealth (even in societies aiming at a 'socialist' pattern), the halting transformation of traditional agriculture, the growing capacity and willingness of industrial and commercial classes to corrupt public officials and, last but not least, the deterioration of the administration of law and justice, and the resulting political instability—these are some of the symptoms which have contributed to the growing disenchantment with economic development as a practical task and a theoretical problem.

As a case in point we refer to the repeated failures of economic plans to attain specifically worked out targets of output. With the exception of Japan where planned targets seem to have been repeatedly surpassed—a phenomenon which likewise suggests inadequate analysis and prognosis—most developing countries show a persistent record of gaps between plan and performance. Such gaps raise serious questions as to the adequacy of the explanatory framework used to account for, and to anticipate the future course of events. The inadequacy may be due to over-simplification of what are essentially cumulative processes of stagnation or growth. This over-simplification is often the result of a deliberate omission of relevant and strategic variables and relationships in the system.

Explanatory structures which view growth and development in terms of economic variables or relationships under static assumptions rather than as a process of socio-cultural evolution must be regarded as particularly suspect and belong to those inherited 'meaningless, irrelevant and blatantly inadequate doctrines and theoretical structures' which can be shown to be derived from the predictions of conventional economic thinking and which hamper the scholar and the planner in the underdeveloped world. Most macro-growth models abstract by design from the effects of a host of institutional and technological factors which determine the formation of capital and the utilization of existing equipment. What is more, macro-explanatory frameworks tend to divert attention from specific complementarities and growth correlations between interrelated inputs and sectors and seem to ignore altogether factor price relationships and hence the profitability of outputs and factor inputs which, at least

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in market orientated economics, are the prerequisite of investment. Similarly, the discussion of planning criteria which is often based upon static micro-economic theory and particularly firm analysis carries with it the predilections of inherited static theorizing of which the traditional dichotomy of 'given' ends and 'given' means is the most basic and the most misleading in its implications.

The present article advances a number of positive suggestions for the reformulation of economic thinking in the light of the particular conditions and requirements of less developed countries. Our critical comments will be concerned primarily with macro-growth models and the traditional means-ends dichotomy.

I. How Trustworthy are Economic Growth Models?

Economic growth models have a long history in economic analysis. In fact their use goes back to QUESNAY and MARX. Their increasing application in the economies of development and particularly economic planning can be traced back to efforts to spell out some of the 'dynamic' implications of Keynesian macro-economic analysis for relatively short periods in advanced countries. In harmony with neo-classical and Keynesian thought the problem of growth is viewed as a consistency or equilibrium problem. Growth models of this kind focus attention on rates of growth (r) (in the sense of the additional income as a percentage of total income) which are compatible with the implications of the rate of investment (z) and the investment or capital coefficient or the ratio of capital to output (k). The warranted or equilibrium rate of growth is that rate of income (or output) increase resulting from the increase of investment (and hence of the capital stock) which gives rise to neither an excess nor a deficit of total demand (in relation to total output) given the average capital (or investment) coefficient.

A more general formulation is advanced by MAHALANOBIS² and LANGE³ who demonstrate with considerable elegance and simplicity

2. P. C. MAHALANOBIS, 'National Income, Investment and National Development' (1952), in *Talks on Planning*, Calcutta 1961, pp. 9-18.

3. OSKAR LANGE, *Introduction to Econometrics*, New York 1965, p. 270, and 'The Output-Investment Ratio and Input-Output Analysis', *Econometrica* 28, April, 1960, pp. 310-324.

that the rate of growth is the rate of net investment times the average income coefficient of investment (β) which relates the income or output to the (total) capital stock in its present physical composition. In other words: $r = \alpha + \beta$. This formula avoids the commitments to Keynesian economic analysis by simply setting forth the (tauto)logical implications of the respective definitions of

$$r = \Delta Y/Y; \quad \alpha = I/Y; \quad \beta = \Delta Y/I$$

How relevant are such models for the analytical comprehension of the development process and economic planning in underdeveloped countries? As a first approach to an answer it may be interesting to confront some of the macro-economic relationships with the empirical record of the long-run trend of output, investment and capital formation.

Commenting on the results of his detailed studies of ten or twelve countries extending over several decades KUZNETS advanced the conclusion that 'the rather simple relations assumed in much economic analysis—close associations between levels of income and the savings proportions and between capital formation proportions and the rate of growth—are not confirmed by the long-term records⁴'. What the long-run records of ten to twelve countries disclose are highly variable and uncertain rates of growth associated with different rates of capital formation. According to KUZNETS, these variations are due to the great variety not only of other factors with which the rate of capital formation was combined but also to variations of the conditions under which these factors were combined in the past. KUZNETS concludes that the influence of the omitted social and technological conditions is so far reaching as to leave little of the underlying association to the economic variable. In short, 'capital formation does not matter as much as capital utilization. And utilization depends upon a host of economic and social conditions which sometimes permit attainment of high rates of growth with little capital, but at other times impede the growth-inducing effects of even larger amounts of capital⁵'.

4. SIMON KUZNETS, 'Quantitative Aspects of the Economic Growth of Nations: VI. Long Term Trends in Capital Formation Proportions', *Economic Development and Cultural Change*, IX, 4, II, July, 1961, pp. 55/56.

5. *Ibid.*, p. 56.

It may be argued that institutional and technological factors while admittedly less accessible are nevertheless neatly caught by the income coefficient of investment. This is, of course, correct. However, they are caught only in the form of an aggregate or average relationship which conceals, and diverts attention from, what may be the most relevant and strategic factors which need to be isolated in the study of stagnation and development in the underdeveloped world. The income coefficient of investment (output-investment ratio) covers with the blanket of an average the composition or structure of the capital stock, the joint character of most inputs, the potentialities of new techniques which need to be translated into specific and complementary valued inputs and outputs, including social costs and social benefits (the so-called externalities), and above all the institutional arrangements which have blocked the application of new technologies in the past and hence the institutional and socio-cultural changes which would be necessary if the new capital inputs are to be used more effectively.

It would be unfair to imply that model builders are unaware of these omissions. In fact, as we have pointed out, some of these omissions are quite deliberate and serve the purpose of simplification or abstraction necessary for theory construction and interpretation. Nevertheless deliberate omission and abstraction always tend to be undertaken selectively and as such often reflect tacit pre-analytical or methodological commitments and distinctions which are implicit but rarely innocent or without theoretical and practical implications. While MAHALANOBIS stresses the empirical range of variations of both α and β in different countries and under different forms of economic organization, and points out that they tend to fluctuate from time to time depending upon the pattern of investment, he regards it as not improbable that their average values would remain fairly stable over a number of years. 'Thus both the rate of investment (α) and the income coefficient of investment (β) may perhaps be treated over a number of years as characteristic parameters of a particular economic system'. Similarly LANGE points out that the national income coefficient is not a magic number representing the productivity of capital but is better understood as 'an average reflecting in

6. P. C. MAHALANOBIS, *op. cit.*, p. 10.

an overall fashion the technological conditions of production obtaining in the national economy'. That is to say β viewed as an average is regarded primarily (or even exclusively) as a technological datum. Now LANGER adds immediately that the composition of this average can be chosen by changing the composition of investment in such a way that β becomes as great as possible thereby assuring a higher rate of growth, given the rate of investment (α) compatible with the maintenance of a given standard of consumption⁷. This is precisely the point. The rate of investment and the income coefficient are averages and may be treated as characteristic parameters of a particular economic system; however, they are subject to change. The problem of economic development is to increase savings and investments (capital formation) by channeling disposable surpluses into productive activities, and to raise β by selecting the appropriate capital structure, by identifying the essential complementary inputs, by taking account of social costs and social benefits and by introducing and implementing such institutional changes which may affect positively the effective utilization of the capital stock. In short the crux of the development process consists in increasing the rate of investment and in raising the income coefficient of investment or, at least to minimize its decline⁸. As soon as the problem is viewed in this fashion it would become relevant and necessary for economists to turn their attention to the study of all those component factors which influence the ratios α and β and to identify the truly strategic factors which have kept and tend to keep the coefficients at their traditional stagnation levels.

7. OSKAR LANGER, 'The Output Investment Ratio and Input-Output Analysis', *op. cit.*, p. 311.

8. *Ibid.*, p. 324.

9. During the initial stages of economic development the output investment ratio may actually be forced down due to heavy capital requirements, long periods of gestation of many internal improvement (social overhead) projects. For an elaboration of a theory, positing on the basis of KUZNETS' data, a general tendency of increasing marginal capital coefficients (declining β) during the so-called threshold stage of economic development see R. F. BRANTO, 'The Threshold of Economic Growth', *Kyklos*, XV, 1962, pp. 7-28, esp. pp. 26-28. For an earlier development of this hypothesis see H. J. BRUTON, 'Contemporary Theorizing on Economic Growth', in B. F. HOSELYTZ, *Theories of Economic Growth*, Illinois 1960, pp. 277-284.

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Macro-economic models do not preclude such inquiries: on the contrary, they suggest them and require an identification of the actual components of the growth determining coefficients—components which could be influenced in the desired direction and would thus bring about a dynamic transformation of society and the structure of the economy. It is at this point that conventional distinctions between economic and non-economic variables as well as traditional predictions for the study of the economy under static conditions have tended to act as pre-analytical screens. For the factors which have kept the rate of savings, capital formation and investment, and the income coefficient of investments in underdeveloped countries at their traditional stagnation levels may be precisely those which economic theory normally classifies as either non-economic or as constant for purposes of theoretical analysis. As far as the rate of investment is concerned a dynamic and disaggregative analysis would have to focus on those institutional and human (i.e. qualitative) factors which are keeping the rate of capital formation at their traditional inadequate levels. The key questions would seem to be: what accounts for the widespread frustration of savings and investment and what prevents entire societies from developing an awareness¹⁰ of technically feasible and economically worthwhile investment opportunities? Which institutional reforms and investments in social overhead would be required in order to bring forth higher savings and investment rates? As far as the income coefficient of investments is concerned the investigation must obviously focus on the prerequisites of effective capital utilization and the choice of an 'input mix' in particular sectors and for the economy as a whole which could lead to an increase of its general productivity. Here again institutional and qualitative elements play a major role as, for instance, effective public administration, implementation of public policies, law enforcement, proper maintenance and repair of existing capital equipment, improvements in the quality of the human factor and increase of labor productivity (through better education and training, more rational work habits and work disciplines, proper concern for time

10. Of course, even full awareness of such opportunities is only a necessary but not a sufficient prerequisite for investment. For even the awareness of possible profits need not necessarily lead to action as long as the so-called profit motive is experienced only as a general wish and is not matched by a determination to action.

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schedules) and improvement in management. Equally if not more important in connection with β is the realization that income coefficients of any economy and particularly of the underdeveloped economy depend upon the identification of important input complementarities and the removal of specific bottlenecks, the provision of social capital and its maintenance as a public function and a fuller utilization of existing capacities. One of the reasons for the slow rate of economic growth in many underdeveloped countries is the lack of awareness of the widespread existence of considerable opportunities for improving the rate of utilization of existing and newly invested capital. The tendency to consider β as constant has the effect of diverting the economist's attention from these important opportunities for higher rates of growth at relatively small additional investments.

Although macro-economic growth models have had a long history in economic analysis, it is only recently that they have been advocated and used as a basis for economic projections and calculations of consistency conditions in the formulation of development plans in underdeveloped countries. It is this use of the abstract model constructed for analytical purposes as a guide to formulate practical policies and plans which raises the question as to their trustworthiness. Even in developed countries where statistical data are comparatively reliable¹¹ and where an institutional environment exists that is favorable to growth, macro-economic models offer no guarantee against serious errors in forecasting. In underdeveloped countries where statistical measurements are inadequate and notoriously unreliable the use of models tends to over-simplify the development process and to mislead the planner in the choice of economic policies. In their concentration on a few relationships of aggregates, models offer no help in solving the key problem of the growth process: namely the identification of the specific investments and institutional reforms which are required in order to break into the cumulative process of economic stagnation and to bring about sustained economic growth and development. While macro-economic growth models achieve a degree of quantification, mathematical exposition and analytical rigor which is unique in the social sciences, these

11. See, however Oskar Morgenstern, *On the Accuracy of Economic Observations*, Princeton 1963, esp. chs. 1, 2, 14 and 15.

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achievements are purchased at the price of a serious loss of pragmatic relevance for the theoretical analysis of the growth process as well as for the determination of criteria of decision making in connection with the formulation of development policies.

II. The False Dichotomy of Ends and Means

We are now turning to one of the most fundamental assumptions of economic analysis: the dichotomy of ends and means¹². Micro-economic analysis and equilibrium theories tend to construe rational action as a decision concerned with the allocation of 'given' (scarce) means to 'given' ends ordered in accordance with a given preference scale. For purposes of analysis, ends and means (goals and resources) are treated as separate, distinct and essentially independent of each other. This distinction of ends and means is, of course, a simplification which serves the purpose of theory construction in accordance with the general schemata of allocation which characterizes all static analysis. While this conceptual distinction between 'given' means and 'given' ends doubtless simplifies the problem of choice and allocation, in effect it tends to over-simplify the problem to the point of obscuring rather than illuminating the essential elements of rational decision making. An animal may be said to have given 'ends' of even overruling importance from which it cannot or does not depart. The behavior of a compulsive neurotic may also be construed as an allocation of 'given' means to (compulsively) fixed ends—fixed so to speak independently of actually or potentially available means. Also, the dichotomy of 'given' ends and 'given' means bears a certain resemblance to the situation of a business firm with a given, unchanging, and easily determinable or measurable end such as the maximization of its monetary net returns with inputs and outputs valued in terms of the same monetary denominator¹³.

12. GUNNAR MYRDAL was one of the first economists to subject this dichotomy to a critical analysis; see 'Ends and Means in Political Economy', in *Value in Social Theory*, edited by PAUL STREETEN, London 1958, pp. 206-230; see also PAUL STREETEN, *ibid.*, pp. XXI-XXV.

13. The resemblance is superficial only inasmuch as profit maximization need not be the only or even the overruling given objective pursued by business

But this is a unique and highly simplified and mechanical model of decision making which does not adequately represent the specifically human capacity of rational choice. The latter rests upon man's unique and, as compared to animals, superior ability of abstract thought which enables him to cope creatively with a changing environment. This capacity is based upon the fact that individual 'ends' or social goals are neither fixed nor 'given' as in the case of animals or compulsive neurotics. Thus human behavior is not adequately represented by the simple and mechanical scheme of adjusting means to given ends. What man brings to the world of action and choice are not ready-made ends or goals but general aspirations and inclinations which have their origin in the physiological structure of the human organism and his socio-cultural environment. These aspirations and inclinations are so to speak the raw materials out of which human goals and values are shaped. In the actual process of decision making goals are not pre-existing but may be said to be continuously emerging. They are progressively specified in the course of a confrontation of alternative possibilities with available means. It is true ends may become routinized and assume the character of habits and customs particularly under static social and cultural conditions. However, the truly important ends and particularly non-routinized objectives require an exploration of possible alternatives and a judgment as to their consequences in the light of available means. That is to say, far from being given or fixed beforehand or independent of the means, judgments as to the aim, the kind and the direction of action required are themselves in need of and subject to an exploration in the light of possible alternatives of their anticipated consequences and the alternative costs of their realization. In the course of this exploration new inclinations will frequently be discovered and the level of aspirations may be modified. In other words, the rational act may be said to transform into specific objectives what are at first merely general inclinations and aspirations. This is equally if not even more true for social decisions. Without exploring alternatives and adjusting levels of aspirations in the light of available means or costs it is not possible to specify ends and to determine which of

and accounting calculations. For a convenient summary of alternative theories of the firm see R. M. CYERT and J. G. MARCH, *A Behavioral Theory of the Firm*, Englewood (NJ) 1963.

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these can be reasonably pursued. In short, neither individual ends nor social goals can be formulated independently of an exploration of the means available for their satisfaction. Hence, ends and means must be considered to be typically interrelated and the determination as to which goals are to be selected and pursued is an integral part of the process of rational choice and rational conduct. The inappropriateness of the traditional theory of rational economic behavior for the formulation of criteria of rational choice stems from the specifically human intelligence which by adapting ends to means and means to ends makes possible the emergence of rational behavior.

It will be useful to examine the origin and the implications of the false dichotomy of ends and means. As early as 1922, JOHN DEWEY pointed out that the procedure followed by economic theory was modelled on the pattern of a business or accounting calculation where the end (such as maximum net profit) is typically taken for granted and rarely subject to discussion¹⁴. In contrast to these simple business calculations DEWEY made it clear that all crucial decision making included invariably an exploration of the objectives pursued both as far as their content and their implication for action were concerned. More recently K. H. PARSONS objected to the notion of given ends by pointing out that 'the technical name for positions taken and withheld from examination is prejudice'¹⁵ and that the assumption of given ends leads eventually to the idea that "'ends"—the guiding conceptions in conduct—cannot really be studied or that they should be handed down authoritatively'¹⁶. This is the case, for example, when it is argued that not only individual ends must be respected as ultimate data but that social objectives must be treated by economic theory as given and that economic analysis is concerned only with the explication of the conditions of optimality in the adaptation of means to these 'given' (social and private) ends. 'Given' ends in the sense of given social objectives in this case assume all the characteristics of 'ordained' values not unlike the 'revealed' values

14. JOHN DEWEY, *Human Nature and Conduct*, New York 1930, p. 215.

15. K. H. PARSONS, 'The Value Problem in Agricultural Policy', in E. O. HEADY et al. (eds.), *Agricultural Adjustment Problems in a Growing Economy*, Ames (Iowa) 1958, p. 297.

16. *Ibid.*, p. 298.

of traditional and medieval thought which also held that the world of action needs to be organized around values presented to mankind as dogmas rather than as propositions subject to examination and modification in the light of evidence concerning their consequences¹⁷. Furthermore, by considering ends including social objectives as given, any investigation into the factors which may play a role in the emergence of individual ends and social goals becomes superfluous and is indeed effectively blocked. As a result, group or power conflicts and their significance in connection with the formulation of social objectives disappear altogether from economic analysis. Indeed the dichotomy of given ends and given means 'solves' the problem of conflict and power in decision making simply by assuming it away. We must thus conclude that the tendency of treating ends as given and independently of the means available and irrespective of alternative possibilities is far from being simply an innocent heuristic and analytical device designed to focus attention on forms of rational behavior concerned with the adaptation of scarce resources to competing ends. By confining the scope of economics to the study of the forms which the adaptation of *given* means to *given* ends may take and by limiting economic analysis to the explication of the 'forms' of such adaptation we do in effect block the way for a systematic consideration of precisely those possible alternatives which the rational mind is capable of exploring and from which it selects what is pragmatically the most worthwhile course of action. Pure economics, by following to its logical conclusions its positivistic predictions for the analysis of artificially closed systems of given ends and given means misses and, indeed, tends to misconstrue the opportunity of transforming the *status quo* — a failure which is problematical enough in a developed economy but which, under conditions of cumulative stagnation deprives the static analytical framework of much if not all pragmatic relevance as a guide to the elaboration of criteria for the transformation and modernization of traditional economics.

While the false dichotomy of given ends and given means severely limits the usefulness of the traditional theory of economic behavior there are other features of the theory which restrict its pragmatic relevance for purposes of public policy making. Thus, in order to be

17. *Ibid.*, p. 296.

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able to define the conditions of optimality, the theory further postulates that the decision maker operates under conditions of complete transparency of the situation. That is to say, the decision maker is represented as being able to anticipate the specific costs and outcomes of the course of action chosen. In short, he knows conditions or elasticities of supply and demand and the terms of substitution. By balancing marginal increments of costs with marginal increments of valued outcomes the pure theory of economic behavior achieves a degree of determinacy in the theoretical representation of choice and optimality which is, from beginning to end, wholly and deliberately fictitious¹⁸.

Never before have such far-reaching cognitive and computational capacities been attributed to man. Indeed these capacities presuppose an omnipotence and prescience which theologians have attributed only to God¹⁹. By postulating ends and means as given, by assuming complete information and complete transparency of the conditions of incremental costs and outcomes, by restricting uncertainty to probability distributions and calculations which, if ever actually carried out, would require an enormous mental effort on the part of the decision maker quite apart from the fact that they would be costly and time consuming—the pure theory then operates with essentially timeless adjustments of 'means' and 'ends' which are identified as conditions of equilibrium and optimality beyond any historical space and time. Indeed, the adjustment and the position of perfect equilibrium and optimality which emerges assumes the character of an 'economic nirwana'²⁰ which differs from the nirwana of oriental religions only by the fact that it can be described and defined mathematically.

Needless to add that the theory of economic behavior has been criticized ever since it took shape from the merger of the hedonistic-

18. More recently the problem of uncertainty and random events in the real world and the future response of other decision makers seems to be rendered innocuous by assuming that these events and responses have a probability distribution which thus replaces older concepts of uncertainty once thought to be irreducible and quantitatively indeterminate and indeterminable. H.A. SIMON, *Models of Man*, New York 1957, p. 203.

19. *Ibid.*, p. 3.

20. STUART CHASE, *The Proper Study of Mankind*, New York 1948, p. 199.

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utilitarian calculus and neo-classical value theory. If the theory of economic rationality survives its critics this is due to the fact that its basic premises are derived not from any empirical observations of human behavior but essentially from introspection which enabled the theorist to discount all empirical evidence to the contrary. Basically these premises and the related postulates of the dichotomy of ends and means as well as the assumption of unlimited cognitive and computational capacities of the decision maker are the methodological prerequisites of the neo-classical equilibrium approach to economic analysis. This approach—i. e. the search for levels of equilibrium—would encounter unsurmountable difficulties if such important elements of action and decision making as ends and means had to be viewed as interdependent and variable and in a process of continuous adjustment and change and if the obvious limits of the cognitive and computational capacities of the decision maker were taken into account. In other words, it is safe to say that it is not the problem of rational choice which has shaped the mode of analysis but the methodology of equilibrium analysis which has molded the neo-classical theory of economic behavior and the corresponding concepts of rationality and optimality²¹.

No wonder, therefore, that the attempt to construct a theory of rational economic behavior and choice without reference to empirical observations appears to have many of the characteristics of an exploration of imagined conditions where ideal not to say utopian solutions are offered to fictitious problems without empirical counterpart or practical relevance. In other words, the theoretical model of economic rationality and choice and the criteria of optimality derived therefrom can hardly be expected to be appropriate and trustworthy for the formulations of judgments as to the kind and direction of rational action in general and for the formulation of rational development policies in particular. That is to say, the model cannot hope to yield relevant criteria of action because it over-simplifies and distorts the problems of rational decision making. To use criteria of choice derived from such a model runs the risk of ignoring genuine sources

21. This is well expressed by the admittedly dogmatic but nevertheless illuminating dictum that 'unless behavior is mechanically reconstructible, behavior is not rational'. EBERHARD FRIE, 'Hedonistic Calculus as Seen from a Distance', *Weltwirtschaftliches Archiv*, Bd. 91, Heft 1/1963, p. 120.

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of economizing which derive from precisely those aspects of the actual situation from which the model tends to abstract. For, the fact of the matter is that ends are not 'given' but are dependent upon means; that the relationship between ends and means is not a one-way street but is reciprocal and that, in other words, the economic problem consists not in adjusting *given* means to *given* ends but in a mutual adaptation of ends and means in a continuous process of exploration which includes a search for alternative possibilities including new technologies and institutional adjustments.

Moreover, as we shall endeavor to show, 'utility'—contrary to the presuppositions of utility theory—can be given a high degree of objective measurability and interpersonal comparability in terms of the logic of 'existential minima' as criteria of actual policy making. In short, we believe that the traditional theory of economic behavior and rational choice can provide us only with criteria of a limited and fictitious rationality which, even if the decision maker possessed the cognitive and computational capacities postulated, would still fall far short of what is feasible and economically worthwhile. That is to say, we believe that the traditional interpretation of economic behavior and rationality has reached an impasse because it can be shown to be without substantive meaning as far as the formulation of criteria of rational action is concerned. It has exhausted itself in a futile attempt to separate the form of rationality from its substance; the latter can be theoretically represented and interpreted only by going beyond the traditional boundaries of pure economic analysis. Such reconstruction will have to take account of the specifically human intelligence which permits the attainment of a substantive economic rationality which the traditional theory has been unable to visualize. Such reconstruction will have to explore the possibilities of objectifying and quantifying the criteria of utility and social welfare; if, indeed, these terms will still be considered sufficiently useful to be retained. It will have to reopen the question of the relationship of economics and equity not only with respect to distribution but particularly in the determination of the social goals of production and public investment; it will have to restudy the role of science, research and technology and their relation to 'economizing' and rational action; it will have to relate the problem of economizing not only to technological but also to institutional change. In short, the

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reconstruction will have to take account of KEYNES' admonition that 'the future depends upon our willingness to entrust to science matters which are properly the concern of science'²².

III. Criteria of Substantive Rationality

The impasse of the traditional theory of economic behavior which tends to obscure the process of rational decision making calls for the elaboration of a body of knowledge which is capable of illuminating the nature and requirements of the rational solution of the substantive problems faced by the developing nations. To make a first attempt in this direction is the purpose of this section. While we shall focus attention on policy making with particular reference to the situation of less developed countries the discussion, nevertheless, is kept sufficiently general to be relevant for the analysis of rational decision making by either the individual, the group or the public policy maker²³. What is the nature and what are the requirements of the rational act when human intelligence is not tied to hypothetical given ends and means but is free to explore and select ends in the light of available or newly discovered means and alternative possibilities?

Any attempt to reconstruct the theory of rational action has to take account of the inevitably fragmentary knowledge upon which decisions are usually based due to the fact that random events may interfere with the outcome and that the anticipated results may be thwarted also by unanticipated responses, or lack of responses, by other decision makers²⁴. Of course, the degree of uncertainty which surrounds the outcome of decisions varies depending, for instance,

22. J. M. KEYNES, 'Economic Possibilities of our Grandchildren', in *Essays in Persuasion*, 1932, p. 373.

23. There may be significant differences here which a new theory of rational action may have to take into account. There will also be differences between decision making concerned with vital and new situations and problems of a minor or routine character.

24. The anticipated results of an irrigation project depend upon the actual use of the new supply of water by the cultivators. The latter may or may not make use of the new opportunities depending upon a host of circumstances which need not be discussed here.

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on institutional arrangements and hence can be reduced. The basic fact remains, however, that many crucial decisions and choices must necessarily be taken with fragmentary knowledge. As such they retain elements of an act of faith or expectation which can be justified only in a hypothetical and probabilistic fashion in the sense that what is believed to be known in the light of the available information is likely to hold in the future²⁵. For these reasons one of the prerequisites of rational action will always be to reduce such uncertainty to a minimum. To this effect some form of anticipation of the course of events under alternative hypotheses must always be an integral part of rational decision making. In practice such a simulated prognosis of the sequence of events in the realm of social and economic decision making calls for a scientific research effort designed to provide the necessary information. Only in the light of such research will it be possible to select the 'right' goals and to determine the 'right' course of action.

Of course, what kind of knowledge is required for the simulated or hypothetical prognosis of the sequence of events, the selection of goals and the determination of the 'right' course of action will differ depending upon the physical and institutional environment and the nature of the technology available or under considerations. For, these elements will determine the range of the necessary inputs, the nature of the activities and the know-how required, and the institutional rearrangements called for by the implementation of any decision or plan. However, one thing is certain: the quality of any plan of action depends upon the degree to which the information used in the simulated prognosis is able to anticipate correctly the actual course of events. For this reason, lack of information, or for that matter, inadequate or wrong information about relationships and sequences of events as well as possible responses to the plan may be just as fatal to its implementation as unbridled guesswork, wishful thinking and fantasy. However, this does not mean that the selection of ends and appropriate courses of action requires the cognitive and computational capacities currently attributed to the rational man in economic

25. In this respect the rational act and economic planning have much in common with decisions of military strategy, the conduct of diplomacy and politics in general. On this aspect of social action see K. THOMPSON, *American Diplomacy and Emergent Patterns*, New York 1962, pp. 7-15.

theory. Selections of ends and choices are after all not made in a social or technological vacuum but rather within a constellation over which we have but limited control. Indeed, not only in international relations but in all fields of decision making the ground on which we stand is never wholly of our own choosing²⁶.

Now it is precisely the fact that the initial situation which calls for action is not of our own choosing but is, so to speak, imposed upon the decision maker which will provide in many instances the first clues and criteria of rational choice and action. This is particularly evident in all cases where the situation borders on an emergency such as internal or external insecurity, a population explosion, an impending famine, threatening floods, or droughts, or the outbreak of an epidemic. But even under more normal conditions the initial situation provides indicators of choice and suggests at least the general direction of action. This is particularly clear in the great number of cases in which the situation is marked by deficiencies of various sorts, and where bottlenecks and shortages prevent the attainment of higher levels of satisfaction. In these cases individual and social decisions are concerned with remedial action. It is important to emphasize that such remedial action takes the form of a move away from 'ills' rather than toward known objectives²⁷. Such remedial action normally aims at an incremental improvement which can be measured by criteria which are implicit in the nature of the deficiency which is under consideration²⁸. For this reason the first prerequisite of any rational action is to ascertain the 'facts' of the situation, i. e. to clarify the extent of the existing deficiencies, to study their qualitative and quantitative consequences by extrapolating probable future developments and effects, and to translate such estimates into specific targets. Rational decision making in these instances calls for a consideration of alternative possibilities in the light of alternative costs.

26. *Ibid.*, pp. 15ff.

27. A. O. HIRSHMAN and C. E. LINDBLOM, 'Economic Development Research and Development Policy Making: Some Converging Views', *Behavioral Sciences*, No. 2, Vol. 7, 1962, p. 216.

28. That is to say the meaning of 'improvement' as the meaning of 'more' or 'less' can be derived from the meaning of the deficiency or the 'amount' under consideration; see C. F. AYRES, *The Theory of Economic Progress*, New York 1962, pp. V-VI ('Foreword 1962').

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That is to say the actual decision making includes the search and the choice of the goal that is to be pursued rather than the simple adjustment of means to 'given' or chosen fixed ends. This is particularly relevant in underdeveloped countries where widespread deficiencies, and bottlenecks play a major role. The traditional theory of economic behavior and choice fails to do justice to these situations. Adequately interpreted the 'situation' provides the decision maker with two kinds of factual information: the nature, extent and possible consequences of the deficiency (the bottleneck or any other form of inadequacy or 'ill'), and at least a suggestion of the technical means required to remove the deficiency either 'incrementally' or fully. It is our contention that substantive and pragmatic criteria of rational decision making can be derived from an analysis of the nature and extent of the deficiency and an evaluation of the costs of the tools or techniques called for to improve the situation.

Organized society has derived operational and relatively workable criteria of action and choice from a direct appraisal of the deficiencies of the situation evaluated in terms of standards derived from what may be called social minima in the sense of existential human needs and social requirements. While it is true that deficiencies do not speak for themselves they are nevertheless highly suggestive of social needs and the courses of action to be followed. Objectively interpreted they may even provide standards and criteria of the necessary scale and adequacy of certain public works and public services designed to raise the level of satisfaction of individual or social needs.

We believe that reasonable and workable criteria of rational action, social choice and social evaluation can be established if economists were willing to explore resolutely the possibility of a reconstruction of their discipline along the lines of an objectification of the content of individual needs and social welfare in terms of existential social minima. Recent advances in our scientific knowledge have brought such a reconstruction within our reach. We possess the quantitative and testable information which would enable us to give empirical content to the concept of an existential minimum of basic human needs and social welfare which, when neglected and permitted to remain unsatisfied, tend to impair human health and efficiency and may even endanger human survival. For example

variations in the rates of morbidity and mortality between developed and underdeveloped countries are clearly attributable to such deficiencies²⁹. Far from being a new discovery existential minima in the sense of basic minimum levels of satisfaction of essential human needs have long played a role in the social allocation of resources and social choice. Their significance has been neglected and lost sight of only under the impact of the dominance of the price system. More recently, however, and particularly as a result of the growing recognition of 'market failures' reflected in various social costs and the neglect of potential social benefits, social minima are again being recognized and are likely to play an increasing role in the formulation of economic policies and development programs.

Needless to add that existential minima depend upon the physical environment, the size of the social product per capita, the state of technology, and the state of our knowledge. Hence they do not only differ from culture to culture but will have to be modified in the light of new facts and formerly unrecognized consequences. In the field of nutrition, for instance, such facts as climate, sex, age, working activity, etc. must be considered in the formulation of existential minima. All this can be done and is being done in the light of quantitative and empirically verified and verifiable data. Social minima can be defined and distinguished from levels of non-essential, secondary or even excess consumption in terms of scientific data which command the consensus of competent scholars³⁰.

Thus maximum tolerable levels of air and water pollution, minimum standards of public health and preventive medicine, medical care and education are increasingly used to counteract the failures of markets to secure at least minimum adequate levels of protection or satisfaction in these fields. A similar objectification of the content of individual and social welfare can be achieved with respect to a wide variety of human needs with a considerable degree of precision. Standards of nutrition are doubtless at the head of the list for such a possible application of the principle of existential minima. Others may be concerned with a variety of social needs and internal im-

29. FRANÇOIS PERROUX, *Feindliche Koexistenz*, Stuttgart 1961, S. 559-565.

30. See, for instance R. L. MEIER, *Science and Economic Development: New Patterns of Living*, New York 1956, pp. 151-170. RALNER SCHICKFELF, *Agricultural Policy*, New York 1954, pp. 36-57. FRANÇOIS PERROUX, *op.cit.*, p. 525 ff.: 531-533.

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provements which are receiving attention not only in underdeveloped countries as 'social overhead' capital or 'infrastructure investments' which some economists had endeavored, unsuccessfully, to introduce into the body of economic analysis³¹.

By ascertaining the 'facts' of the situation i.e. by measuring the extent of the deficiencies through estimates of the proportion of the population who lives below existential minima, and by clarifying the consequences of such deficiencies scientific research not only indicates the existence and the extent of the gap but clarifies the consequences of social action or inaction thereby providing us with criteria of judgment as to the kind and direction of action.

Nor is it difficult either in principle or in practice to translate such gaps and deficiencies into specific quantitative targets of output for specific goods and services could be projected into the future. In fact it is one of the characteristics of calculations in terms of social minima that they provide comparatively reliable data for aggregate projections of approximate future requirements. Especially if combined with reliable population growth rates, existential minima permit at a glance the calculation of emerging requirements and deficiencies. In the light of such data it would become possible to clarify and establish tentative priorities and prepare the ground for the necessary balanced expansion in accordance with minimum adequate consumption levels.

31. For a summary of some of these earlier attempts in terms of such concepts as public works and inappropriable utilities see K. WILLIAM KAPP, 'Social Costs and Social Benefits', in *Hindu Culture, Economic Development and Economic Planning in India*, Bombay 1963, esp. p.175. In some respects these concepts provide a clearer and less ambiguous notion than the over-interpreted concept of external economies. SAMUELSON's concept of public and collective goods and GALBRAITH's concern with the 'dependency effect' and the 'starvation' of the public sector likewise contain elements of pragmatic criteria of social choice and substantive rationality. Whether these criteria are sufficient to counteract the long standing neglect of the qualitative aspects of production and distribution is subject to doubt. Economics as a social science can only benefit if it remains sensitive to the realization that the 'good life', particularly in affluent societies, will depend increasingly on the enhancement of the qualitative aspects of civilization. "The 'Great Society' is a place where men are more concerned with the quality of their goals than the quantity of their goods". From President Johnson's Commencement Address at the University of Michigan (May 1964); quoted from *Time*, May 29, 1964, p. 12.

Of course, there will be deficiencies in more than one group of individual and social needs all of which make demands on available resources. Hence there will be scarcity and conflicting interests which will have to be resolved in a process of deliberation and choice, and the establishment of priorities. Just as individuals are faced with the task of harmonizing or ordering competing wants in view of the limited means available, society is faced with a variety of competing needs as well as with conflicts of interests among its members over the relative importance of such needs and the use or allocation of scarce resources. The solution of these conflicts and the establishment of a workable consensus as to priorities must be considered as essential elements of rational decision making. The method of incremental improvement in the level of satisfaction of existential minima in different fields offers at least in principle an opportunity for the establishment of a reasonable consensus both as to priorities and the time sequence of action to be followed. The fact that the agreement takes the form of compromise or a consensus on actual individual or group requirements makes the decision, socially or politically speaking, workable and gives it a pragmatic rationality which a merely formal rationality cannot claim³². Emerging deficiencies calculated in terms of existential minima or objective welfare criteria provide the decision maker with pragmatic goals or the general direction for incremental improvements in allocation and output. While the exploration and identification of emerging deficiencies are essential prerequisites for rational development programs they are, at best, only general indicators or the point of departure for the decision making process. For it is still necessary to translate general goals and objectives into specific plans and detailed project designs. Their elaboration calls for the same flexibility which must guide the pragmatic exploration of ends and means to which we have referred earlier. The fact that 'ends' and 'means' are not given but need to be discovered and, in fact, emerge only in the light of an inquiry into alternative possibilities means, above all, that the elaboration of

32. Nor would it be correct to believe that the solution of conflicts about ends must necessarily precede the determination of particular policies. 'Individuals often agree on policies when they cannot agree on ends'. G. E. LINDBLOOM, 'Tinjbergen on Policy Making', *Journal of Political Economy*, Vol. LXVI, No. 6, December 1958, p. 534.

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rational plans and project designs requires a creative exercise in socio-economic innovation very much along Schumpeterian lines. That is to say the elaboration of a development program or a particular project must include a survey of opportunities for new ways of doing things—i.e. of new technologies (new tools, new techniques, new input patterns, new products and the corresponding human activities involved) including even the new institutional arrangements made necessary by the nature and the internal logic of the new technologies under consideration. In fact, the significance of these feasibility surveys cannot be over-emphasized; they are integral parts of any rational decision making, particularly at the project making level. Such surveys must establish in considerable detail the technical and institutional interdependencies and implications of alternative plans. They must specify the whole range of 'input' requirements which are necessary to achieve the desired results (or outputs) in a socially adequate and economical manner. In short, feasibility studies are the crux of the whole planning effort. They are the prerequisites of any substantive rationality and a precondition for the 'success' of the plan.

The nature and scope of such feasibility studies will differ from case to case depending upon the nature of the problem and the deficiencies involved; that is to say the evaluation and determination of the physical, economic and institutional feasibility of a given project includes necessarily the selection of the technology as well as the choice of institutional and administrative arrangements needed to implement the project at reasonable levels of technical and economic efficiency. For the choice of the technology implies a series of more or less inflexible and hence complementary technical interdependencies of inputs which must be reflected in the investment plan. This is perhaps less evident as long as the plan is concerned with relatively simple tools and techniques although the general principle that technologies have their specific input- and socio-institutional implications applies even to pre-industrial or pre-scientific technologies. However, as soon as we are concerned with technologies which are based upon modern science the relevant production function (if the concept is still appropriate) becomes infinitely more complex (both quantitatively and qualitatively) and more comprehensive than the traditional function. For technologies based upon

modern science call as a rule for a considerable variety of complementary inputs (extending both backward and forward) and for relatively sophisticated work patterns, rational attitudes and cognitive capacities as well as specific institutional arrangements. Thus, whereas traditional rice farming under given soil and climatic conditions makes use of tools and techniques which employ primarily land and labor, rice cultivation based upon modern science calls for an input pattern which would include improved and specifically developed varieties of rice (by hybridization); for planting in accordance with scientifically proven standards, the proper use of fertilizers, adequate watering and protective practices (e.g. weeding and insect control) all of which transforms the nature of farming from a traditional routine to a science-conscious activity³³. Indeed, any omission or deviation in the pattern of required inputs may defeat the successful application of the new technology in the project area. This is merely another way of saying that the selection of the technology provides the project planner with a series of additional indicators and objectives which simplify his task by indicating the complementary technical pattern of inputs (conventional and non-conventional) that is called for by the technology. Planning techniques and formal criteria which do not take account of these implications of modern technology make a mockery of rational decision making. For they abstract from what are probably the key prerequisites of the process of economic growth and development. To treat institutions as given facts or 'constraints' understood as binding 'objectives' which must be 'honored' in the formulation of development programs is likely to lead to the frustration of the new technology and the failure of the plan. If some institutional changes are not feasible politically, it would be better to postpone the introduction of the new technology rather than waste scarce resources by committing them to projects which are bound to remain technically unworkable or to operate far below their potential efficiency. Political problems are not solved but only postponed or shifted to another level by investments in unworkable projects—unworkable that is because the planner failed to anticipate the technical input inter-

33. For a lucid account of current research under way in South-East Asia see *The International Rice Research Institute Report*, 1963, IIRRI, Los Baños, Laguna, Philippines.

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dependencies of the new technology and because society is incapable or unwilling to bring about the necessary creative institutional adjustment. All this is in open contrast to traditional development planning and project designs which frequently fail to take into account the full implications of modern technology and which accept institutions as 'constraints'. Indeed such development planning needs to be reminded of THORSTEIN VEBLEN's bitter dictum about the triumph of imbecile institutions over life and culture³⁴.

IV. Summary and Conclusions

The present use of macro-economic growth models and the application of the traditional theory of rational behavior in the analysis and formulation of economic development programs seems to have reached an impasse. This impasse is the result of the traditional modes of economic thinking predominant in some of the advanced countries. Economic theorizing has become the victim of a positivistic and essentially static methodology which tends to misconstrue the problem of 'economizing' as a formal problem that calls only for the explication of the *forms* of allocating 'given' means to 'given' ends in an optimal manner. It is this mode of thinking which tends to oversimplify and to distort the problem and to mislead the analyst. Consequently, the criteria derived from the theory have remained largely irrelevant and untrustworthy as guides to the rational solution of practical problems faced by the policy maker. While these criteria seem to be superficially appropriate as a framework of analysis for the explanation of the behavior of the firm (as long as maximization of net returns is in fact the only objective, and social benefits play no role) they lose their relevance for policy making under the much more complex conditions of cumulative stagnation which are constantly threatening the development process. In these circumstances choice and decision making are not tied to hypothetically given ends and given means. Indeed, under any circumstances human intelli-

34. 'History records more frequent and more spectacular instances of the triumph of imbecile institutions over life and culture than of peoples who have... saved themselves alive out of a desperately precarious institutional situation...' (THORSTEIN VEBLEN, *The Instinct of Workmanship*, New York 1914, p.25).

gence can achieve its true potentialities only if it explores and adjusts ends to available or newly discovered means and if it devotes itself to the search of alternative technological, economic and institutional possibilities. This search for alternative possibilities calls for an inquiry into the 'facts' of the situation or, in other words, the deficiencies which need to be overcome. In the course of such an inquiry the rational mind identifies and modifies, by anticipation *in abstracto* (i.e. hypothetically) the implications of alternative courses of action and their relative costs and selects those possibilities which seem to be relatively most desirable and workable considering their overall benefits and total costs. Search for alternative possibilities, prognosis of alternative courses of action and social decision making are thus interrelated processes in the course of which the choice of ends and the formulation of 'right' action (policies) are progressively specified on the basis of comprehensive feasibility surveys. The more complex the situation and the more advanced the technology required the more important it is to be guided by the internal logic of the technology. For this reason feasibility studies of an interdisciplinary character become the crux and indeed the prerequisite of the rational act. Such feasibility studies serve the purpose of making explicit the full implications of the new technology and of weighing their consequences for necessary changes in social and institutional arrangements without, however, uncritically succumbing to a 'technocratic' surrender of human values to technical constraints. It goes without saying that such surveys must be conducted in accordance with the principles of a scientific investigation. Furthermore while it is possible to draw a conceptual distinction between the purely technical and the so-called economic efficiency (understood in terms of *valued* inputs and *valued* outputs) in practice the line between the two will often be blurred and certainly not as easily determinable as it appears in formal economic analysis.

Any policy aiming at incremental improvements of the level of satisfaction of irreducible human needs will have to be based upon a definition of existential minima as basic norms of the pragmatic rationality to be pursued in the use and allocation of resources. Such existential minima have the aim and effect of objectifying the content of individual and social welfare. The criteria of efficiency and optimality and the evaluation of the performance of an economy are

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thereby radically changed. In contrast with the purely formal definition of economic efficiency or optimality in an allocation of 'given' means to 'given' ends under the fictitious conditions of transparency and computability of benefits and costs (evaluated in market terms), existential minima measure the extent to which actual gratification of human needs falls short of norms the relevance of which can be ascertained empirically and objectively. Far from discounting empirical evidence existential minima are derived from such evidence and remain open to the scientific test. For this reason also they are subject to modification in the light of new knowledge. In addition to providing a reliable basis for future projections of human needs and requirements, social minima yield new and objective criteria for the measurement of growth and development as well as the over-all social efficiency in the performance of particular economic systems. Instead of measuring growth and performance in terms of aggregates as national output per capita or even income and capital coefficients—all of which are measurements derived from categories inside the economy—social minima would permit us to measure the economic performance in terms of objectified norms of human welfare and satisfaction. It would become possible for the analyst and the planner to measure actual achievements in terms of the actual removal of shortages and deficiencies, or, more concretely, in terms of the number (or the percentage) of the population who have reached the existential minimum level of satisfaction of basic human needs and requirements. Not only the gap which separates the underdeveloped from the developed world but significant variations in the performance of different forms of economic organization could thus be ascertained with a considerably greater degree of accuracy than current national income data permit.

Unlike the utility concept of formal equilibrium analysis which is not designed to raise the question of how far human needs and requirements are actually satisfied, existential minima would make the level and extent of actual satisfaction of human needs the point of departure of economic analysis. For social minima are related to man's requirements as an individual as well as a member of society. As we have shown, they have their origin and derive their content from individual human needs. This sensitivity to and concern with actual human needs distinguishes the concept of an existential

minimum of essential human needs from the utility concept of formal analysis. Unlike the latter, social minima differentiate between what are basic irreducible needs and what is non-essential—a distinction which is of particular significance in underdeveloped countries but does not lose its importance in 'affluent' societies. It is in this distinction rather than in the physiological character of empirically established norms that we see the human orientation of a concept of existential minima. In short the essential feature of social minima is the fact that they would place unsatisfied individual needs and social requirements into the center of economic analysis. It is this responsiveness to unsatisfied essential needs and requirements which distinguishes the pragmatic-social rationality from the formal and limited rationality of the market place. The concept of rationality thereby assumes a new and comprehensive meaning which would provide a humane foundation to economic analysis which traditional utility and current welfare economics do not possess.

The practical implications of such reconstruction of economic analysis would be far-reaching. Not only would it introduce pragmatic criteria of basic equity into the allocation of means and the distribution of outputs and thereby counteract the wasteful allocation of resources for ostentatious and ceremonial purposes which tends to delay, if not to defeat, the development process in many underdeveloped countries today. It would also give substantive content to the concept of rationality and new meaning to the objectives of economic development. Perhaps it is not over-optimistic to expect that such an approach to the economics of the underdeveloped world might break through the present apathy and disenchantment with the pace of economic development and enlist the participation and the creative potentialities of large masses of people in these new nations. The new rationality concept would also be in harmony with the democratic principles, rights and responsibilities which many of these countries are claiming to adhere to or to aim at.

Finally, the systematic exploration of technical, economic and institutional alternatives and the use of existential minima as welfare criteria would also have the effect of giving a reasonable degree of quantitative precision to what has often rather ambiguously been referred to as the need for a broadening of economic science into an integrated discipline of social economics whose basic concepts,

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measurements and criteria would be of universal relevance for all forms of economic organization. Among the key concepts of such a discipline would be the concept of social system and man — not *homo economicus* who, despite all his fictitious cognitive and computational capacities, is nevertheless confined to given means and given ends — but man who, with his specifically human intelligence is capable of using reason and science for the exploration of goals and as a basis for judgments as to the kind and direction of action to be followed.

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SUMMARY

The article questions the relevance and trustworthiness of macro-economic growth models, the inherited theory of rational action and particularly the dichotomy of given means and given ends, for the interpretation and planning of the development process in traditional societies marked by cumulative stagnation. The continued use of these theoretical structures may, in fact, be one of the reasons for the recurrence of serious gaps between plan and performance and the current disenchantment with the slow rate of growth in many underdeveloped countries.

As a positive contribution to the problems under discussion the author suggests that economists may find it useful to develop pragmatic indicators of incremental improvements which could be derived from an objectivization of the content of 'welfare' in terms of so-called existential minima representing minimum adequate levels of satisfaction of essential human needs. Combined with the use of such indicators would have to be the search for alternative goals and possibilities by means of technical, institutional and economic feasibility studies which must be considered the crux of the planful act particularly in underdeveloped countries endeavoring to introduce technologies based upon modern science. The use of such indicators reflecting existential minima would have the effect of making economic theorizing more responsive to human needs and provide the discipline with new criteria for the evaluation of the substantive rationality of decision making and of different forms of economic organization.

K. WILLIAM KAPP

ZUSAMMENFASSUNG

Der vorliegende Artikel soll zur Analyse und Planung von Entwicklungsprozessen in Ländern mit kumulativer Stagnation beitragen. Zu diesem Zweck untersucht der Autor die Bedeutung und Zuverlässigkeit makroökonomischer Wachstumsmodelle, die herkömmliche Theorie des rationalen Handelns und im besonderen die Dichotomie zwischen gegebenen Mitteln und Zielen. Dass Pläne und Wirklichkeit oft auseinanderklaffen und gegenwärtig in vielen unterentwickelten Ländern Enttäuschung über die niedrigen Wachstumsraten herrscht, kann mit der ständigen Verwendung dieser mehr theoretischen Modelle zusammenhängen.

Die Ökonomen sollten sich deshalb darum bemühen, neue Wachstumsindikatoren zu entwickeln. Diese Indikatoren könnten dadurch gewonnen werden, dass man Wohlstandssteigerungen zu den Existenzminima – die als Minima der hinreichenden Befriedigung elementarer menschlicher Bedürfnisse definiert sind – in Beziehung setzt. Zugleich müssten mit Hilfe von Untersuchungen über die technischen, institutionellen und wirtschaftlichen Möglichkeiten einander ausschliessende Ziele und Entwicklungsmöglichkeiten aufgezeigt werden; darin liegt überhaupt das Grundproblem unterentwickelter Länder, die sich um die Einführung moderner Technologien bemühen. Die Verwendung von auf den Existenzminima beruhenden Wachstumsindikatoren würde die ökonomische Theorie mehr an die menschlichen Bedürfnisse anlehnen und dabei gleichzeitig der Wissenschaft neue Bewertungskriterien für die Rationalität von Entscheidungen und anderen Formen wirtschaftlicher Aktivität liefern.

RÉSUMÉ

Cet article contribue à l'analyse et à la planification de procédés de développement dans des pays avec une stagnation cumulative. Pour cette raison, l'auteur analyse l'importance et la véracité de modèles de croissance macro-économiques, la théorie traditionnelle de l'action rationnelle et en particulier la dichotomie entre les moyens donnés et les buts donnés. L'emploi continué de ces modèles théoriques peut en fait, être une des causes de la contradiction entre les plans et la réalité et la déception actuelle dans beaucoup de pays sous-développés au sujet des taux de croissance faibles.

Les économistes devraient donc s'efforcer à développer d'autres indicateurs de la croissance. Ceux-ci pourraient être dérivés des augmentations du bien-être atteints par des améliorations comparées au minimum d'existence, qui représenterait la satisfaction élémentaire des besoins humains essentiels. En même temps il faudrait rechercher les buts et possibilités de développement contradictoires à l'aide d'études techniques, institutionnelles et économiques; car ce sont là les

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problèmes principaux des pays sous-développés voulant introduire des technologies modernes. L'emploi d'indicateurs de croissance se basant sur le minimum d'existence rapprocherait la théorie économique aux besoins humains et fournirait à la science économique de nouveaux critères pour l'évaluation de la rationalité des décisions et d'autres formes de l'activité économique.

American Institutionalism: The System of Economic
Analysis of Veblen and His Followers.

Nature of the Problem: American Institutionalism has sometimes been criticized as an omnium gatherum of unconnected ideas and doctrines with hardly any claim to logical consistency and scientific rigor. It is accused of providing at best an impressionistic description of an ever changing economic environment. The proposed research project takes issue with this view on American Institutionalism. It is true American institutionalists have not achieved a minimum degree of systematization which is the strength of an established school. Institutionalism has always remained a relatively open system of thought that has incorporated and assimilated into its own framework such elements of classicism as seemed to be relevant and fruitful for the analysis of particular problems. If American institutionalism is still not fully recognized as a distinct approach to the formulation of questions and the ordering of ideas, as well as a set of doctrines with an American birth certificate, this is due to the fact that its founders were preoccupied with the practical applications of their theories and, moreover, were more or less disinterested in any systematization. Their pragmatic attitudes have been inherited by many contemporary institutionalists. The continued failure to systematize is one of the major weaknesses of American institutionalism and a challenge to ~~anyone~~ who believes in its essential fruitfulness for the analysis of contemporary economic problems.

The purpose and scope of my project may be described as an attempt to systematize institutionalist analysis. From the wealth of institutional writings I intend to bring together those ideas and theories which can be shown to be logically related. In areas which have been neglected by institutionalist thought, I shall apply their approach in an analysis of contemporary economic problems.

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With this end in view I intend to demonstrate that American Institutionalists, influenced as they were by Peirce's and Dewey's pragmatism, start from an essentially common view of the economic process. They share a common method of ordering ideas and of formulating questions. They suggest that all economic relations have important institutional components, and that scientific inquiry in economics calls for more than a study of price and market phenomena. They do not take social institutions, including legal arrangements or the distribution of original and countervailing power, for granted but consider them as active and changing factors in the economic process. They insist that the number of relevant variables in most economic relationships is far greater than is usually assumed and they look with suspicion upon models of extreme simplicity and rigor. They feel that simplified linear constructs are not able to take adequate account of the cumulative interdependencies which connect economic and non-economic variables. They consider economics as an empirical science which must come forward with generalizations that are subject to verifications or refutation.

Institutionalists have devoted considerable attention to the analysis of economic growth, the functioning of the economic order as a whole, and its structural changes. Veblen advanced the elements of a distinct theory of economic growth and development which emphasized the fact that all societies have a disposable surplus and that the rate of growth depends largely upon institutional factors which determine the use to which such surplus is put in different societies. In the analysis of the American mixed economy, special emphasis is placed on the corporation as the master institution which serves as the mobilizer of the nation's disposable surplus. The study of the corporate structure and of corporate finance assumes therefore central importance and is logically connected with such key problems as the cumulative character of all credit transactions, the threat of a recurrent inflation of all monetary values, the problem of instability and the various remedies by which business enterprises seek to avert the recurrent threat to their earning

capacities and capitalizations. For this reason, institutionalists have always placed the problem of economic instability in the center of their analytical preoccupations.

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Institutionalists have stressed the social or collective nature of all human action. They have developed tools for the analysis of industrial relations and collective bargaining. Without rejecting the relevance of the theory of relative prices for the analysis of the competitive sector, institutionalists have advanced a theory of "administered" prices, wages and profits which is at the same time a theory of "administered" distribution and points to serious "built-in" inflationary pressures in the contemporary mixed economy. The interpretation of this mixed economy with such heterogenous economic structures as those represented by the competitive sector, the sector of concentrated private business and the public sector calls for more than one theoretical framework. Accordingly, institutionalists have advanced theories of competitive prices, of administered prices and of public pricing. All institutionalists have shown considerable interest in the formulation of theories of individual and particularly of consumers' behavior and have stressed the need to interpret such behavior as subject, at least in part, to direction by producers or sellers. They have shown considerable ingenuity in taking account of "nonrational" action, i.e., action without reference to clear economic objectives, or without awareness of true costs, or without close calculation of expected gains. Institutionalists have made far-reaching contributions to the theory and practice of national accounts and national income statistics.

In problem areas in which American institutionalists have made few, if any contributions, as for instance in the analysis of foreign trade and public spending, a systematic topical exposition may have to go beyond the work of Veblen and his contemporary followers and apply the institutional approach to the issues raised.

The methods and procedures of the proposed research project are determined by its basic aim: To systematize the contribution of American Institutional thought. The project does not call for any field study or quantitative investigation. It requires a comprehensive assessment of the work of American Institutionalists. From a wealth of specialized studies and monographs, I propose to select those generalizations which are most characteristic of institutionalist analysis and most relevant for the interpretation of contemporary economic problems, and which can be shown to be logically interrelated. This procedure raises several questions. First, there is the fact that we cannot expect unanimity among institutionalists on all problems under discussion. How are we to deal with disagreement and dissension among American institutionalists? Second, there are European predecessors and contemporaries such as Max Weber, G. Myrdal, Francois Perroux and others. How far can one ignore their work in a study of this kind? Third, institutionalism has felt the influence of classicism and neo-classicism. Can this process of assimilation be neglected? To overlook differences of opinion in any school would do violence to the obvious fact that no school of social thought is likely to be entirely free of dissension and disagreement. To ignore the work of European predecessors and contemporaries would run counter to the fact that ideas do not respect national boundaries especially where traditions are held in common. To neglect influences from classicism or neo-classicism would be equivalent to deny the fact that intellectual assimilation is continuous. These are open questions which can find their solution only through a judicious and balanced exposition of the material.

Relation to existing studies: The research project is based upon the work of American Institutionalists such as Thorstein Veblen, J. R. Commons, W. C. Mitchell
W.H. Hamilton, A.F. Burns,
J. M. Clark and their contemporary followers such as G. C. Means, A. A. Berle and others. It will draw also upon the work of such historians of American economic

thought as Joseph Dorfman, A. G. Gruchy, Paul Homan, A. L. Harris, M. G. White and others. I am not aware of any previous attempt to systematize the work of American institutionalist thought.

Success in an undertaking of this sort will depend upon the extent to which it improves Institutional thought. To make explicit the systematic character and logical connections between the various parts of American institutionalist thought would perfect this branch of our knowledge by giving it greater clarity, greater accuracy and greater comprehensiveness. More than this, the proposed study would set forth the strength of a body of economic thought which has particular relevance in those fields of analysis which are still open theoretical issues in our discipline such as the question of external (social) costs and external (social) economics, private wants and public purposes, public investment criteria and the issues raised by the economic development of countries with institutional arrangements which differ substantially from those found in the West. Finally, by showing the essential fruitfulness of the much neglected specifically American contribution to economic analysis the study would exert a balancing effect on the prevailing trend toward formal analysis in terms of formal constructs without reference to any social space and time. Insofar as we succeed in systematizing American institutionalist thought, our study may carry conviction to other members of the profession and represent a challenge to rejuvenate and broaden the scope of modern economic analysis.

Present state of project: It is difficult to say with precision how much of the basic research remains to be done. I have studied American Institutionalism for more than ten years, particularly in connection with the teaching of a graduate course devoted exclusively to this subject and my more recent work in the field of economic development and institutional change. My studies

related to comparative systems and collaboration in an interdepartmental graduate seminar devoted to methodology in the social sciences, also has drawn upon the contributions of American institutionalists. I estimate that a release for one year from teaching and administrative duties at Brooklyn College would enable me to advance the actual writing of the manuscript. I hope to be able to publish the study within a period of three years.